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Nascimbeni, F., Burgos, D., Brunton, J., & Ehlers, U. D. (2024). A competence framework for educators to boost open educational practices in higher education. *Open Learning: The Journal of Open, Distance and e-Learning*, 39(2), 150–169.
<https://doi.org/10.1080/02680513.2024.2310538>

A competence framework for educators to boost Open Educational Practices in higher education

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Abstract

Despite the recognition of the benefits that can be achieved through the use of Open Educational Resources (OER) and, more broadly, Open Educational Practices (OEP), there has been little research on the competences that are needed to enable educators to utilise such practices. To contribute to closing this gap, this paper presents a framework of the competences that educators in higher education should develop in order to effectively engage in OEP. The framework development was based on an in-depth analysis of a set of existing successful open teaching practices, which allowed to identify the underlying competences needed to engage in each one of them. The competence framework consists of one transversal attitude (that of being open to constructively engaging in OEP) and two competence categories (those relating to OER and those relating to open pedagogies). These two categories include a total of eight competences, described in detail through the corresponding knowledge and skills. The paper closes with a reflection on how to facilitate the attainment of these competences, that could become a key part of existing capacity building actions for educators at all levels, and suggests some directions for possible future research.

Keywords: Open education, OER, Open Educational Resources, Educators' competences, Higher education

Introduction

The existence of a multitude of Open Educational Resources (OER) offers a tremendous potential for educators in higher education, who can include these materials in their courses in various ways (Naidu, 2016; UNESCO, 2019). At the same time, some in the academic community are still reluctant to open and share their resources with others. This is a legacy of the times when universities enjoyed a monopoly on knowledge and education (Knox, 2013; Zhang et al., 2020).

While OER have played a leading role in open education literature (Paskevicius, 2017), it is noted in the literature that there is a growing awareness of more broadly conceptualised open processes (Koseoglu & Bozkurt, 2018). This growing awareness can be viewed in the context of the scholarly debate regarding the need for a more holistic understanding of openness that considers the impact of open practices in supporting innovative education (Kimmons, 2016; Nascimbeni, 2020). Open Educational Practices (OEP) have been widely recognised as potential enablers of quality, access, and effectiveness in higher education (Ehlers, 2014; Wiley & Hilton, 2018), and both governments (Inamorato dos Santos et al., 2017) and international organisations (UNESCO, 2019) are stressing the importance of adopting these kinds of practices in education. Responding to this need, an increasing number of institutions worldwide are working to mainstream the adoption of OEP across their educational offerings (Allen & Seaman, 2014). Historically, in the first wave of open education, universities focussed on the creation and use of OER; in the second wave, they worked to be part of the MOOC panorama (as in Massive Open Online Courses); while more recently, there has been a move towards developing educators' awareness, motivation and capacity to work with OEP (Ehlers, 2014; Grodecka & Śliwowski, 2014; Agbu et al., 2016; Conole & Brown, 2018).

This paper aims to respond to the expanded interest of researchers and practitioners in an holistic vision of open education, and provides a competence framework that can help educators' transition from the creation and/or use of OER, and associated competences, to the broader realm of OEP. Such a competence framework, apart from contributing to the advancement of the concept of the Open Educator (Tur et al., 2020; Nascimbeni & Burgos, 2016; Inamorato dos Santos, 2019), would help higher education institutions to design capacity-building activities for their teaching staff, promoting the generalised growth and application of open teaching approaches (Amiel, 2013; DeVries, 2013; Nerantzi, 2018).

Current research on OEP and on open education competences

In order to scope the field of educators' open practice competences, we first reviewed the most recent literature on OEP. Then we searched for definitions and considerations related to the concept of the Open Educator. Finally, we analysed the few existing attempts to define and profile the competences of educators related to OEP.

Open Educational Practice as a developing concept

The concept of OEP is increasingly coming to the fore of the open education debate (Bali et al., 2020), complementing OER as another fundamental pillar of openness in education (Cronin & MacLaren, 2018; Havemann, 2020). The relationship between OER and OEP is made clear in one of the most common definitions of OEP, where Ehlers (2011) conceptualises it as ‘practices which support the (re)use and production of Open Educational Resources through institutional policies, promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning paths’ (Ehlers 2011, p. 3). The OEP matrix presented in Figure 1 suggests different degrees of openness in the use and creation of OER, along with the dimensions of technological innovation and pedagogical innovation. Along the three stages of OER usage, from ‘no OER (re-)usage’ to ‘medium OER (re-)usage or creation’ to ‘high OER (re-)usage and creation’, the scale covers different realities within organisations, and different individual teaching behaviours. Following Baumgartner’s (2007) approach of teacher – tutor – coach, the matrix breaks down the concept of pedagogical practice into three degrees of openness that represent different stages of teaching and learning frameworks. ‘Low’ then refers to learning designs in which objectives and methods are rooted in ‘closed’ transmissive and reproductive approaches; ‘Medium’ represents a stage in which objectives are still pre-determined and given, but methods of teaching and learning are represented as open pedagogical models; and ‘High’ represents a level where both learning objectives and methods are social, collaborative, and reflective.

		OER Usage		
		Low No OER (re-) usage	Medium OER (re-)usage or creation	High OER (re-)usage and creation
Learning Architecture	High Social practices, Collaboration, Sharing (Reflection in action), • „open“ objectives • „open“ methods	A	B	C
	Medium Dialog, Procedures, Rules (Know-how) • „closed“ objectives • „open“ methods	D	E	F
	Low Knowledge transmission (Know that) • „closed“ objectives • „closed“ methods	G	H	I

Figure 1: Open Educational Practice matrix (Ehlers, 2011, p. 4; 2014, p. 94)

Building on an analysis of existing approaches, Huang et al. (2020), through a conceptual framework, define OEP in terms of the interrelationships between four openness conditions (OER, Open Assessment, Open Collaboration, and Open Teaching) and one enabling technology condition, as presented in Figure 2. The first identified relationship is between the OER, enabling technology, and open teaching conditions. This combination produces OEP that allow students to engage in open and collaborative learning processes using OER, facilitated by the use of participatory technology. The

relationship between open teaching, enabling technology, and open collaboration produces OEP in which educators foster students' open collaboration via enabling technologies, such as social media and online networks. The relationship between open collaboration, enabling technology, and open assessment produces OEP where students are assessed in collaboration with external stakeholders or communities, possibly resulting in open assessment reports. Lastly, the relationship between open assessment, enabling technology, and OER is about facilitating individual or group assessments involving collaboration among learners, producing open assessment evaluations that can result in enhanced OER (Huang et al., 2020).

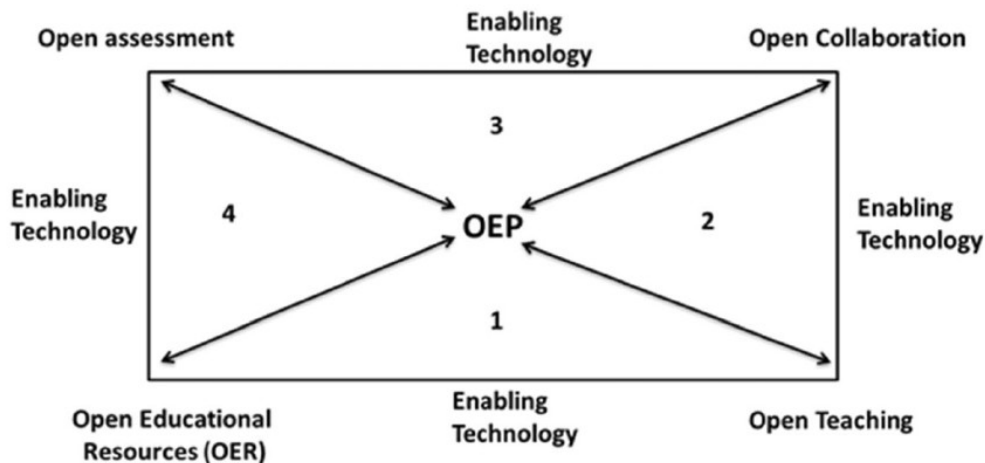


Figure 2: OEP framework for open education (Huang et al., 2020, p. 6)

These two ways of conceptualising OEP show that educators need to acquire and develop different competences depending on the way they intend to use OER and/or engage in other open practices. As the level of openness in a pedagogical setting increases, so do the number and variety of related competences.

Teachers as Open Educators

Higher education institutions are increasingly realising that educators are the cornerstone of an effective OEP adoption. Therefore, they are creating capacity-building activities to equip their teaching staff with the necessary competences to work 'in the open' (Nascimbeni et al., 2018). Nerantzi's (2018) cross-boundary collaborative open learning framework presents one method by which to engage staff in cross-institutional academic development relating to open learning. Still, it is not easy to determine what competences should be added to those already mastered by educators in order to help them become effective Open Educators. Although the term 'Open Educator' is quite widely used, openness as an educator characteristic has not been researched as much as OER and OEP. Nascimbeni and Burgos (2016) have defined the Open Educator in relation to how such educators operate across the key realms of teaching activity: design, content, pedagogic approach, and assessment:

An Open Educator chooses to use open approaches, when possible and appropriate, with the aim to remove all unnecessary barriers to learning. He/she works through an open online identity and relies on online social networking to

enrich and implement his/her work, understanding that collaboration bears a responsibility towards the work of others. An Open Educator implements openness along four main activities. He/she implements open learning design (...), uses open educational content (...), adopts open pedagogies (...) and implements open assessment practices (Nascimbeni & Burgos, 2016, p. 4).

More recently, Tur et al. (2020) have researched the threshold concepts that teachers need to attain to become Open Educators, concluding that

The open educator is, on the one hand, an open creator of knowledge who is committed to spreading high quality educational resources and opportunities for all. On the other hand, the open educator is committed to open practices from a critical perspective by opening up the whole teaching and learning process from design, to implementation and assessment with all the implications and dramatic possibilities for educational transformation that this may have (Tur et al., 2020, p. 9).

Similarly, Daukšienė et al. (2020) noted that increasing the use of OER has a positive impact on both curriculum development and educator capacity. Meanwhile, the Joint Research Centre of the European Commission has tried to systematise a set of guidelines on open education for academics (Inamorato dos Santos, 2019). Finally, Cronin notes that, for a set of Irish teachers who participated in a study, using OEP meant 'having a well-developed open digital identity; using social media for personal and professional use, including teaching; using both a Virtual Learning Environment (VLE) and open tools; using and reusing OER; valuing both privacy and openness; and accepting some porosity across personal-professional and staff-student boundaries' (Cronin, 2017, p. 7).

These approaches agree on three main points, which have guided our own research. First, openness in education is related to progressive educational practices, change, learner empowerment, and the promotion of unrestricted access to education (Knight, 2008; Spiro & Alexander, 2012; Boudreau, 2014). Second, technology is instrumental to collaboration, as it opens up possibilities for interaction and sharing and deeper levels of interaction and discussion, although it is important to remember that technologies can both facilitate and hinder student success (Brunton & Brown, 2020). Lastly, curriculum transformation through OER should be seen as a deliberate process involving responsiveness to the social context, epistemological diversity, and renewal of pedagogy and classroom practices, all supported by an institutional, and/or cross-institutional, culture of openness and critical reflection (Ehlers, 2020; Mays, 2017; Nerantzi, 2018).

Open education competence frameworks

Competences connected to the use of open content are present in some digital competence frameworks, such as the European Commission's DigComp (Vuorikari et al. 2022), DigCompEdu (Redecker, 2017), and the Australian Competency Framework for Teachers (Department of Education and Training of Western Australia, 2004). On the other hand, OEP are strongly connected with personal attitudes and preferences (Cronin, 2017), as well as with contextual factors (Nascimbeni et al., 2018), and this makes it difficult to divide the components of open teaching into distinct dimensions corresponding to a set of practical skills.

An interesting conceptualisation of open education competences has been proposed by Hegarty (2015), who identifies eight attributes that represent the key competences necessary for engaging in open pedagogical work.

Notably, the majority of these competences are actually ‘open declinations’ of typical educators’ competences, confirming the idea that academics need to start with their existing teaching practices to find ways to share and collaborate openly, and this must be accompanied not so much by new competences, but rather by a mindset shift (Inamorato dos Santos, 2019). The components of the eight dimensions indeed overlap in many ways, and are all part of a way of teaching that fosters trust, sharing, collaboration, connectedness, peer interaction, and review.

Another competence framework for open education was produced in 2016, following a broad consultation with stakeholders, by the International Organisation of La Francophonie (see Table 1), limited to the area of OER (Gregoire & Youga Dieng, 2016).

Table 1. OER competences framework (table by authors, based on Gregoire & Youga Dieng, 2016)

Competence area	Competences
Becoming familiar with OER	Distinguish an OER from another resource List some factors in the emergence of OER Consider a specific role in the OER movement
Searching for OER	Use a search tool to find OER Select appropriate OER
Using OER	Distinguish the different types of Creative Commons licences Respect the terms of Creative Commons licences
Creating OER	Design OER Revise OER Remix OER Co-create OER
Sharing OER	Choose a licence for an OER Assign a licence to an OER Publish an OER Promote an OER

Methodology

The main methodological challenge in identifying teaching competences for OEP is relating the general concept of competence to the specific open education context. Open education tends to be considered either a subset of technology-enhanced teaching, or an area of its own. In addition to developing open education competences, many higher education educators need to improve their digital literacy and digital teaching competences as well (Nascimbeni, 2018; Redecker, 2017; Vuorikari et al., 2022). Competences are usually researched and defined based on an evaluation of mastery in a

specific field, which requires observing and describing the practices of those involved in a certain professional domain, field, or task. In line with this approach, our analysis and categorisation of competences has relied mainly on the analytic technique of pattern matching (Yin, 2003). We searched for patterns relating to OEP and open education competences in a number of selected texts and observed open teaching practices, so that prototypical mastery in a particular task could be defined. Pattern matching is based on a thorough identification of dominant patterns within a particular observed phenomenon. The empirical patterns found in the evidence can be compared with those predicted by the key assumptions of a study (Yin, 2003). We have followed the steps listed below.

Desk research was conducted to find evidence of professional competence requirements for educators in open teaching situations. In order to identify the competences, a literature review was carried out using existing capacity-building courses and handbooks on open education. The main source for this literature review was the OER Knowledge Cloud, the repository managed by Athabasca University that collects more than 2795 records dealing with Open Education and OER. We wanted to know whether these resources reported such competences, and to identify the competences existing in more than one document. We identified and analysed 12 online courses and 16 handbooks, focussing on different aspects of open education, that contained categorisations of teaching competences in the area of open education. A list of the items we screened is presented in Annex 1. We analysed the way learning outcomes and resulting competences were described, and we sorted these by common attitudes, knowledge areas, and skills, which are the key components of each competence (Lopez et al., 2020).

The outputs of the first phase were categorised into eight fields of requirement, which we call ‘competence areas’. They were then divided into two sections. The first section relates to OER, and consists of 1) Using open licences; 2) Searching for OER; 3) Creating, revising, and remixing OER; and 4) Sharing OER. The second section relates to open pedagogies, and consists of 5) Designing open educational experiences; 6) Guiding students to learn in the open; 7) Teaching with OER; and 8) Implementing open assessment.

A mixed desk and field research phase on open teaching practices was conducted through pattern analytical research, with the aim of connecting open teaching practices with associated competences. In order to identify the relevant open teaching practices, we looked for anchor sequences that contained patterns resembling the competence requirements, and that illustrated them by putting them in a specific context. We identified 24 open teaching practices, which are presented in Annex 2. For each practice, we interviewed the leading practitioner with the aim of identifying the necessary competences to engage in that practice, complementing the interviews with desk research on all the practices. A detailed description of these practices can be found in the handbook produced by the OpenGame project (García-Holgado et al., 2020).

In order to confirm the components of the competences identified in the practice patterns analysis in terms of attitudes, knowledge areas, and skills, we organised an online focus group with a number of open education experts. This led to the development of a framework that depicts the complexity of using open education approaches in a way that is intelligible to both educators and practitioners who are building openness capacity among higher education educators.

Emerging open education competences for educators

The eight competences emerging from the research process are made up of: four competences relating to OER (use open licences; search for OER; create, revise, and remix OER; and share OER); and four relating to open pedagogies (being able to design open educational experiences; guide students to learn in the open; teach with OER; and implement open assessment). Notably, while these last four competences often still involve OER, they are more complex and multi-layered, and relate more to the use of a range of open teaching practices in context. We will now present the eight competences, with associated examples gathered from the analysed teaching practices.

Competence 1: Use open licences

This competence is associated with knowing the comparative advantages of open licences, and with knowing what the different types of open licences are, how they differ, and how they can be used. The skills associated with the use of open licences are: applying an open licence to a teaching resource; recognising the respective requirements and restrictions of a licence; and knowing how to determine whether a resource has a licence and of what sort. This is a foundational competence for educators seeking to engage in open teaching practices. Most of the sets of competences needed to overcome indicative teaching challenges necessarily include this competence, which is a foundation for other competences. It is difficult to envision how an educator would appropriately find and use, or create, an OER without being able to use open licences. One example of an associated practice would be setting up an open licence on a resource that an educator has created so that it can be shared with and used by others within the bounds of that licence.

Competence 2: Search for OER

The search for OER competence is associated with being familiar with the major OER repositories and knowing which repository is best suited to a particular need. This entails being able to find OER that are relevant for one's teaching and assess the quality and usefulness of existing OER. While an educator may be able to engage in some open teaching practices in the OER category without knowing how to search for and find OER within repositories, the majority of practices relating to searching for, finding, assessing, and using OER produced by others would be inaccessible without this competence. Examples of practices in this area are replacing a required reading commercial textbook with an open textbook, or incorporating openly licensed online videos into existing learning materials.

Competence 3: Create, revise, and remix OER

The knowledge associated with this competence is of the different options for adapting an OER, including translation, illustration, modification, contextualisation, etc. The skills associated with being able to engage in the adaptation of an OER are: creating an OER (taking into account the specificities of different types of licences, as well as the potential for reuse, for example with regard to format, language, level of content granularity, etc.); revising an OER produced by oneself or others (taking into account the specificities of different types of licences); and creating an OER composed of various other OER, taking into account the specificities of licences. This competence represents a move beyond mere foundational engagement with OER, i.e. being able to find OER, understand the associated licences, and assess the usefulness of that OER for

one's teaching. Here, the scope for an educator's active engagement with OER is widened, as the OER with appropriate licences are created by the educator. This could be from scratch, as a revised version of an existing OER, or as a composite or remix of other existing OER that had been identified and assessed by the educator. Examples in this range of practices include creating a resource and licensing it with an open licence, or adapting and revising an open textbook from an OER repository to suit an educator's local context.

Competence 4: Share OER

The share OER competence is associated with knowing how to publish and share OER, and knowing which OER repositories have a good reputation, so as to assess their usefulness for disseminating the OER widely and effectively. The skills associated with sharing OER are: identifying relevant OER repositories and using them to publish a resource with an open licence; and sharing an openly licensed resource through social media and other means. This competence facilitates an educator in sharing OER they have created, as their knowledge and skills in this area would determine how widely that OER circulates, and correspondingly, how much impact it could have in associated fields. One example of related practice is the action of sharing a specific OER through an OER repository or through a website built specifically to house that type of OER.

Competence 5: Design open educational experiences

This competence is associated with engaging in learning design 'in the open', sharing and/or working collaboratively with others in open communities, and facilitating student engagement in designed open learning experiences within the curriculum. The skill associated with this competence is designing engaging open educational experiences. This foundational competence intersects with broader knowledge and skills relating to effective learning design approaches. The ease with which an educator can develop this open education competence is moderated by their ability to design effective learning experiences in general. An example of a related practice is a situation where a module, or the way a module is taught, is designed so that students can participate in the development of the curriculum covered in the module.

Competence 6: Guide students to learn in the open

The competence "guide students to learn in the open" is primarily associated with knowing about connected and network learning strategies (Downes, 2019), in order to apply these strategies to guide students through open learning activities and experiments. It is also associated with knowing about issues and risks related to online privacy and personal data management, as well as with knowing how to relate this knowledge and associated practical advice to students. One skill associated with this competence is that of helping students learn through the open web (for example, navigating the more general aspects of the open web, such as social networks and online communities; or navigating aspects of the open web specifically related to OEP, such as locating and navigating OER repositories). Another skill is providing guidance to students regarding the issues and risks related to online privacy, personal data management, and working 'in the open'. An increased layer of complexity is present in this competence, as the educator not only needs to have developed their own knowledge and skills necessary for using OEP in their teaching, but also needs to guide others in developing the knowledge and skills necessary to competently engage in open practices as part of their learning experience. The ease with which an educator can develop this competence is moderated by the degree to which they can effectively facilitate

knowledge and skill acquisition in general. An example of a practice related to this competence is an activity where students create and/or edit Wikipedia pages as part of their learning experience.

Competence 7: Teach with OER

This competence is associated with, on the one hand, knowing how to search for, create, revise, remix, and share OER using open licences, and on the other, knowing how to facilitate and guide others in their engagement with OER. Further, this is linked with the skills of helping students search for and use OER, either individually or collaboratively, and/or helping students produce OER, either individually or collaboratively. This competence is heavily intertwined with other competences already presented, such as the educator's personal mastery of open licences and OER, as reflected in competences one to four above, combined with the educator's ability to facilitate learning and guide others. In this case, the facilitation and guidance are specifically related to student engagement with OER practices in their learning. As with the "guide students to learn in the open" competence, the ease with which an educator can develop this competence is moderated by the degree to which they can effectively facilitate knowledge and skill acquisition in students in general. This competence is also closely related to the "design open educational experiences" competence, as the ability to teach with OER is also moderated by the educator's ability to appropriately design and prepare OER-related student activities. An example of a practice related to this competence is guiding students in collaboratively creating open online publications.

Competence 8: Implement open assessment

The "implement open assessment" competence has to do with knowing the comparative advantages of open assessment, and understanding its methods and tools. The skills associated with this competence are: deploying OER for an assessment; guiding students in doing their work openly/in public; and guiding students in producing OER for formative or summative assessment. To implement open assessment in their teaching, educators must, again, use their own understanding of open licences and OER to design an assessment and guide students as they engage, individually or collaboratively, with that assessment. The ease with which an educator can develop this competence is moderated by their experience with different types of assessment; for example, assessments involving group work, artefact creation, problem-based learning scenarios, etc. Three examples of practices relating to this competence are where students: analyse an open dataset as part of their assessment; blog or vlog publicly as part of their assessment; produce an OER, such as a public health infographic, that is shared publicly, as part of their assessment.

A conceptual framework of competences for Open Educational Practices

The conceptual framework presented in Table 2 includes the eight competences that emerged from the research process detailed in the methodology, divided into two areas (OER and open pedagogies), with their corresponding knowledge and skills, and with one underpinning transversal attitude. These competences, so arranged in the presented framework, represent the original contribution of the reported research process. Following the existing literature (Cronin, 2017; Bali et al., 2020; Havemann, 2020), the proposed attitude is transversal to all competences, and relates to an educator's willingness to work openly, sharing work with others and/or using the work created by

others. The competence framework in Table 2 assumes that an educator's engagement with OEP is necessarily underpinned by an 'open attitude' (Ehlers, 2014). This means being ready to both openly share one's work and use the knowledge created and openly distributed by others, in order to improve access, participation, and the quality of teaching and learning. The motivation for holding this open attitude can be internal (influenced by personal values) or external (influenced by unit-, institutional-, or national-level policy on the use of OEP, their inclusion in promotion metrics, etc.) (Cronin, 2017; Nascimbeni et al., 2018).

Table 2. The educators' competence conceptual framework for Open Educational Practices

A. Attitude	Be ready to openly share your work, and to use the knowledge created by others, in order to improve access, participation, and quality of teaching and learning		
Area	Competence	B. Knowledge	C. Skills
1. OER	1. Use open licences	Understand the (comparative) advantages of using open licences and know the existing types of open licences	1.1. Apply an open licence to teaching resources 1.2. Recognise the requirements and restrictions of a licence, and know how to determine whether a resource has a licence and of what sort
	2. Search for OER	Know OER repositories and identify those that are the most suited to your needs	2.1. Find OER that are relevant for your own teaching 2.2. Assess the quality and usability of existing OER
	3. Create, revise and remix OER	Know the options for adapting an OER (translation, illustration, accessibility, contextualisation, etc.)	3.1. Create an OER, considering the specificities of licences and the potential for reuse (format, language, granularity) 3.2. Revise an OER, considering the specificities of licences 3.3. Create an OER composed of various pre-existing OER
	4. Share OER	Know OER repositories; how to publish an OER; how to share an OER	4.1. Identify relevant OER repositories and publish a resource 4.2. Share a resource through social media and other means
2. Open pedagogies	5. Design open educational experiences	Know how to share and/or work collaboratively with others in open communities; how to facilitate student engagement in open learning experiences	5.1 Design engaging open educational experiences
	6. Guide students to learn in the open	Know about connected and network learning strategies; be aware of the issues connected to online privacy and personal data management	6.1. Support students with learning through social networks, online communities, etc. 6.2. Provide guidance to students about online privacy and personal data management
	7. Teach with OER	Know how to search for, create, remix, and share OER, and how to facilitate and guide others in their engagement with OER	7.1. Support students in searching for and using OER (either collaboratively or individually)

			7.2. Support students in producing OER (either collaboratively or individually)
	8. Implement open assessment	Know the comparative advantages of open assessment and be aware of the existing open assessment methods and tools	8.1. Deploy OER within an assessment 8.2. Guide students in doing their work in public 8.3. Guide students in producing OER for formative or summative assessment

Discussion

The conceptual framework presented above builds on previous attempts to define the knowledge and skills that educators need to teach in the open (Hegarty, 2015; Gregoire & Youga Dieng, 2016), and at the same time moves beyond these previous efforts, principally due to three main features.

First, by focusing on OEP for the framework, we want to explicitly enlarge the discourse beyond the use of open content, including but going beyond the concept of OER-enabled pedagogies (Wiley & Hilton III, 2018). By specifically focussing on OEP, we mapped those competences that are needed to improve the quality of teaching and learning processes by innovating the educational environments, both with and without OER. However, we recognise the importance of OER, which allows educators to benefit from the experiences and work of others, as exemplified by the practices collection presented in Annex 2. OEP are, in fact, inherently based on collaboration between content creators and users, because they involve the reuse of resources that have been created by others, as well as the co-creation of content with peers and/or with students (Daukšienė et al., 2020). Whereas OER focus on content and resources, OEP create an educational environment where OER are used or created as learning resources. Where an OER approach focuses largely on the questions of how resources can be made available, an OEP approach asks how OER can be used in the educational context.

Second, our conceptual framework explicitly includes, together with the knowledge and the operational skills needed to use OEP, the *open attitude* that must accompany the teaching change process in a sustainable way. The term ‘practice’ signifies that an holistic context is addressed, rather than one specific element, be it the resource, the learners or teachers, or the educational or organisational context. A certain educational context is associated with any OEP, where OER are used in a context of reflective educational practices, where learners’ peers and teachers validate the learning processes and results through critical dialogue. Given that openness is strongly connected with personal attitudes and preferences (Veletsianos, 2013), an open attitude is a key prerequisite. Similarly to the eight dimensions of the open education framework suggested by Hegarty (2015), presented in Figure 3 above, the competences we have mapped are all part of a way of teaching that fosters trust, sharing, collaboration, connectedness, peer interaction, and review. All these practices need to start from an appropriately open mindset. Also, in the realm of openness, it is fundamental to give students control of their work, for example, by letting them choose the open licences they prefer, or by letting them decide which parts of their work they want to publish openly (Ward, 2017).

Third, our framework introduces a critical aspect in all its areas of competence, as much as possible. In a society where openly sharing knowledge is becoming in many cases the norm, a fundamental component of educators’ literacy should be the capacity to both share the knowledge they produce and to use the knowledge produced by others in a responsible, transparent, and traceable way (Villar, 2019). Learning how to teach through open communities and with open and networked practices implies both a set of technical skills, such as understanding copyright, and a fundamental change in the daily practices of course design, content production, teaching, and evaluation (Nascimbeni & Burgos, 2016). By relying on the open web, educators should be able to work through open and connected online identities, meaning that they should adopt a transparent and consistent attitude in online spaces related to their teaching work (Ross et al., 2014) and

should rely on online social networks to enrich their teaching by setting up and nurturing their personal learning network (Tour, 2017).



Figure 3. Eight attributes of open pedagogy (Hegarty, 2015, p. 4).

Finally, our framework resonates with the recent definition of OEP by Bali et al. (2020), who use, among others, two continuums to define OEP. First, OEP can go from content-centric practices (whose main purpose is to produce or create open content) to process-centric practices (which focus on the processes of interaction amongst participants). Second, OEP go from teacher- to learner-centric practices, depending on the extent to which the process of openness is adopted by teachers (also in collaboration with colleagues) or by learners.

Conclusions

The key role of educators in making OEP mainstream and in building more relevant open education ecosystems has been widely recognised in both policy and research contexts (UNESCO, 2019; Allen & Seaman, 2014). Consequently, the concept of the Open Educator has been circulating in the open education community for some years. However, there has been little research to identify the competences that an educator should master to work efficiently and responsibly in open settings. In this paper, we have tried to answer this question by proposing a conceptual framework that considers competences beyond successful real-life open teaching practices, together with an analysis of the definitions of competences from the literature (including handbooks and guidelines for educators). The framework presented in this paper should obviously be used together with other, more general competence frameworks for educators, including those specifically focussing on digital teaching (Nascimbeni, 2018; Redecker, 2017; Vuorikari et al., 2022), since an Open Educator must first be a good educator.

We recognise that the conceptual framework presented in this paper is only a first approximation of the full profile of the Open Educator. It should be a starting point for a number of reflections and further research, particularly on the different proficiency levels that an educator should reach in every mapped competence to become an Open

Educator. Nevertheless, at a moment when the policy attention on OER is high (UNESCO, 2019), and when the global need for accessible e-learning solutions is increasing due to crises worldwide (e.g., the COVID-19 pandemic) (Huang et al., 2020), we believe that acquiring the competences defined by our framework would help educators become drivers of change inside education systems, by allowing them to explore the possibilities of developing and using open content and approaches in an holistic and tailored manner.

Acknowledgments

This research has been carried out in the context of the OpenGame project (Promoting Open Education through Gamification; Grant number: 2019-1-ES01-KA203-065815, <https://opengame-project.eu>), with the financial support from the European Commission led by the Research Institute for Innovation & Technology in Education (UNIR iTED, <http://ited.unir.net>) at Universidad Internacional de La Rioja (UNIR), and with the following consortium members: The University of Salamanca (USAL), University of Nantes, Universidade Aberta (UAb), Duale Hochschule Baden-Württemberg Karlsruhe (DHBW) and Dublin City University (DCU).

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Appendices

Annex 1. Courses and handbooks analysed

Courses

- Becoming an open educator, OEP Scotland project.
<https://www.open.edu/openlearncreate/course/view.php?id=2274>
- Creating open educational resources, Open University UK.
<https://www.open.edu/openlearn/education/creating-open-educational-resources/content-section-0?intro=1>
- Designing with open educational resources, University of Maryland.
<https://www.edx.org/course/designing-with-open-educational-resources-oer>
- Five days of open education, York St John University.
<http://blog.yorks.ac.uk/moodle/2016/03/11/5-days-of-open-education-day-5-becoming-an-open-educational-practitioner/>
- GoOPEN wiki, WikiEducator.
http://wikieducator.org/GoOPEN#Finding_OER_and_open_content
- How to make an open online course, Open University UK.
<https://www.open.edu/openlearncreate/course/view.php?id=2221#tabs-2>
- Introduction to openness in education, David Wiley. <https://learn.canvas.net/courses/4>
- Learning to (re)use open educational resources, P2P University.
<https://www.open.edu/openlearncreate/course/view.php?id=2500>

Open education, Open University UK. <https://www.open.edu/openlearn/education-development/open-education/content-section-0?active-tab=description-tab>

Open education: Fundamentals and approaches, OpenMed project.
<https://course.openmedproject.eu/welcome/>

Using open educational resources in teaching, Politecnico di Milano, Italy.
https://www.pok.polimi.it/courses/course-v1:Polimi+OER101+2019_M4/course/

Web literacy – Open practices, Mozilla. <https://learning.mozilla.org/en-US/web-literacy/participate/open-practice/>

Handbooks

Aesoph, L. M. (2016). Adaptation guide: A reference to adapting or revising an open textbook. <https://opentextbc.ca/adaptopentextbook/>

Aesoph, L. M. (2018). Self-publishing guide: A reference for writing and self-publishing an opentextbook. BCCampus. <https://opentextbc.ca/selfpublishguide/>

Crump, M. (2018). Open tools for writing open interactive textbooks.
<https://crumplab.github.io/programmingforpsych/>

Doner, S., & Chandler, A. (2017). OER toolkit for trades instructors.
<https://pressbooks.bccampus.ca/oertoolkitfortrades/>

Elder, A. (2019). OER starter kit. <https://iastate.pressbooks.pub/oerstarterkit/>

Falldin, M., & Lauritsen, K. (Eds.). (n.d.). Authoring open textbooks. Open Textbook Network. <https://press.rebus.community/authoropen/>

Inclusive Design Research Centre. (2017). FLOE inclusive learning design handbook.
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Jhangiani, R., & DeRosa, R. (n.d.). Open pedagogy notebook.
<http://openpedagogy.org/openpedagogy/>

Mays, E. (Ed.). (2017). A guide to making open textbooks with students.
<https://press.rebus.community/makingopentextbookswithstudents/>

Meinke, W. (2018). UH OER training.
<http://pressbooks.oer.hawaii.edu/oertraining2018/>

Wiley, D. (Ed.). (n.d.). An open education reader. <https://openedreader.org/>

Annex 2. Open Educational practices analysed

Practice 1: Use open textbooks as teaching resources: the WikitoLearn example

Practice 2: Use a MOOC in the classroom

Practice 3: Implement ‘open flipped classroom’ teaching

Practice 4: Integrate course content with an OER slide playlist

Practice 5: Transform your course into a MOOC: the AMMIL methodology

Practice 6: Create an OER-based module for teaching foreign languages

Practice 7: Switch from a commercial textbook to an open textbook

Practice 8: Transform your MOOC into an OER

Practice 9: Use open video tutorials to foster explorative learning

Practice 10: Co-produce OER through teachers' content clubs

Practice 11: Share innovative teaching practices through an online repository

Practice 12: Produce OER playlists with the help of artificial intelligence

Practice 13: Co-design your syllabus with your students

Practice 14: Use OER to support socialisation of prospective students

Practice 15: Use OER for personalised and inclusive pedagogy: the path2 in approach

Practice 16: Edit Wikipedia in the classroom

Practice 17: Make your course digital with the help of your students

Practice 18: Use open data as teaching resources: a case from social sciences

Practice 19: Assess students' work by sharing it publicly

Practice 20: Implement OER-based renewable assignments

Practice 21: Engage students with professional communities of practice

Practice 22: Have students collaboratively create online publications

Practice 23: Foster students' collaboration through online dialogue

Practice 24: Use social media to build an open and collaborative learning environment