

**OER provision practices in context:
a socio-technical study on
OpenCourseWare initiatives
in Spain**

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Abstract

Based on the idea of broadening access to learning opportunities for all by means of new Information and Communication Technologies (ICTs), the Open Educational Resources (OER) movement has gained ground during the first years of the 21st Century while capturing the imagination of educators, university leaders, policy-makers and opinion leaders all over the globe.

Drawing on socio-technical theories and adopting a case study research design, which involved the analysis of both qualitative and quantitative data, this thesis addresses the manifold tensions and paradoxes that may emerge out of the interplay between a highly predefined model of OER provision and the everyday realities and institutional contexts of different higher education settings. In particular, it focuses on the process of implementation by Spanish universities of OpenCourseWare (OCW) initiatives, a widely adopted model of OER provision that was originally devised at the Massachusetts Institute of Technology.

By examining the enactment of technology as a situated phenomenon, this study sheds light on the roles that OCW initiatives play in relation to the strategic orientation of universities and how the actual involvement of scholars in the creation of this type of materials is often curbed by some entrenched institutional arrangements and prevailing academic cultures. The findings of this thesis have theoretical as well as practical implications, which suggest that the replication of models of OER provision outside the specific settings in which they were originally devised is a rather problematic endeavour. More generally, it supports the idea that the implementation of ICTs must be always accompanied by social structures that are mindful and respectful of local specificities and institutional arrangements.

Another key conclusion is that, if universities are genuinely committed to broadening access to higher education opportunities and supporting participation in life-long learning by means of ICTs, it is crucial to understand the ways and extent to which OER initiatives can actually contribute to achieving such goals.

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List of acronyms

ANECA	National Agency for Quality Assessment and Accreditation (Spain)
CAQDAS	Computer-Assisted Qualitative Data Analysis
EHEA	European Higher Education Area
HEFCE	The Higher Education Funding Council for England
ICTs	Information and Communication Technologies
JISC	Joint Information Systems Committee (UK)
MIT	Massachusetts Institute of Technology
OA	Open Access
OCL	Open Content Licence
OER	Open Educational Resources
SCORE	Support Centre for Open Resources in Education
STIN	Socio-Technical Interaction Network
UNESCO	United Nations Educational, Scientific and Cultural Organization

1 Introduction

Over the last decade many universities and scholars have embarked on the release of 'Open Educational Resources' (OER). Further, provision of these kinds of materials has attracted the attention of both public bodies and private organisations who have acted as key advocates and supporters. This thesis focuses on the implementation of a specific model of OER provision at Spanish universities.¹

This introductory chapter starts by outlining the overall research problem that I address in the thesis. After doing so I will define in more specific terms the purpose and the scope of the study, introducing a set of research questions and heuristics that guided the design of the study. Finally, I will provide a brief summary of the structure of the thesis and the content of each chapter.

1.1 Research problem

At the very end of the 20th century, the Massachusetts Institute of Technology (MIT) started to define an online lifelong learning initiative that would eventually be launched in 2001 under the name of OpenCourseWare (OCW). With the aim of finding a strategic position in a shifting educational environment marked by the rapid diffusion of the Internet, MIT's leaders decided to prompt the creation and release on the public Web of educational materials covering the entire content of all the courses taught to their students. While it was predated by a few other endeavours pursuing similar goals, the MIT's initiative was unique in managing to

¹ My doctoral studies have been funded by a scholarship from the Andalusian Regional Ministry for Innovation, Science and Enterprise. Additional funding which helped me to conduct the fieldwork was provided by the University of Oxford and Santander Universities as well as by St Antony's College (Carr and Stahl Fund).

capture the imagination of policymakers, journalists and other kinds of opinion leaders all over the world (Goldberg 2001; UNESCO 2002; Diamond 2003).

The MIT-OCW triggered the onset of a movement articulated around the goal of advancing the right to education for everyone by making educational materials available on the Web. Indeed, this initiative led to the coinage of the term OER, which covers other types of resources apart from full-length courses. Besides informing the agenda of the so-called OER movement, the MIT's pioneering initiative inspired other universities that started to replicate the model and launched their own OCW sites. Indeed, a global consortium would be launched just a few years after the inception of the original initiative (Carson 2009).

Such a scenario offers a unique opportunity for studying the tensions and dilemmas that may arise when an ICT-based initiative that was originally devised within a specific setting is extrapolated to other cultural contexts and institutional arrangements. In this regard, it calls for an analysis of the different meanings that may be attached by university leaders, educators and other key stakeholders to such initiatives.

1.2 Purpose and scope of the study

This thesis addresses the problems that may arise when a specific type of OER initiative, namely the OCW model of OER provision, is extrapolated to settings that are substantially different from the organisational context in which it was originally devised and first implemented. In particular, the study focuses on the design, implementation and configuration of OCW initiatives at three Spanish universities.

It presents a multiple case study that relies on a number of mixed methods deployed within a primarily qualitative strategy of inquiry. The study offers a

comparative analysis across a set of three universities that present different levels of engagement (i.e. low, moderate and high) in the creation and release of OCW materials. Thus, it focuses on the supply side of OER, namely on a range of practices and actions revolving around 1) the provision of materials and 2) the development of associated technical and social structures.

The study pays particular attention to the socio-technical arrangements that unfold out of the interplay between the general characteristics that define the OCW model and the particularities of each specific setting in which it is implemented. In order to do so, it was necessary to approach a varied range of social actors who play a relevant role in the release of OER, whether they are involved in the development of technical infrastructures, the design of policy frameworks, the creation of materials or other complementary actions such as the provision of support and training.

1.3 Research questions

The following overarching research question guides the study: *To what extent and in what ways is the provision of OCW content embedded into the activity of Spanish universities?* This general question is addressed by means of three more specific research questions:

1. What is the role of OCW initiatives with regard to the strategic orientation of universities?
2. To what extent does the implementation of OCW initiatives contribute to the adoption of OER-based practices and increase in OER awareness?
3. How do OCW creators perceive such activity in relation to their professional identities and activity?

The first question involves looking at the connection between OCW initiatives and the strategic orientation of each of the universities under study. Thus, it is necessary to examine the rhetoric around OER and relevant policy frameworks. Likewise, it requires gaining insight into the resources allocated to each initiative, paying especial attention to external forces that may favour their implementation, such as higher education policy frameworks, the work of organisations operating as OER advocates and the positioning of other universities – neighbours and/or other prestigious universities – in relation to OER.

The second question requires assessing the overall level of involvement and awareness at each university in relation to both their OCW initiatives and, more generally, the provision of OER at large. In this regard, it is concerned with whether the creation of OER can be actually regarded as a practice or should be seen more like a one-off or non-recursive activity. Although the focus is on the supply side, this study also examines the extent to which authors were engaged in the reuse of OERs created by others and aware of the legal and ethical implications underpinning the OER movement.

The third question calls for examining the provision of OCW content from the perspective of contributors, paying particular attention to the meaning of such activity in relation to their personal interests, values and professional roles. Moreover, it involves looking at the dispositions and attitudes of such actors towards the creation of teaching materials in general and the use of educational technology at large.

At a different analytical level, I have used the set of heuristics provided by the STIN strategy (see Chapter 3) with the aim of unpacking these socio-technical networks that revolve around the release of OCW content. Drawing on those

heuristics, I formulated a set of more specific questions that are defined by Stake as *topical* and “call for information needed for description of the case” (Stake 1995, p.25).

1. Who are the relevant actors and what are the key organizational units within an OCW initiative production system?
2. What are the resource flows associated with the implementation and functioning of an OCW initiative? How was the funding secured?
3. What are the architectural choice points for the system and the main rejected alternatives?
4. What were the pressures/incentives and impediments to implementing an OCW initiative?
5. What are the pressures/incentives and impediments to participating in an OCW initiative and how have they evolved over time?
6. Who becomes involved in the release of educational materials when an OCW is implemented? Who is less prone to participate?
7. How do scholars obtain knowledge about the implications of participating in an OCW initiative? How do they develop the required skills?
8. To what extent do OCW initiatives redefine interactions between scholars and external actors (e.g. colleagues and students from other universities, self-learners, etc.)?

1.4 Chapter summary and thesis structure

I started this general introduction by presenting the overall research problem addressed in this work. Then I outlined in more precise terms the purpose and scope of the thesis and then moved on to present the research

questions guiding the study, as well as a set of heuristics that helped me to articulate the process of inquiry.

In **Chapter 2** I introduce the notion of OER and frame it into a wider socio-historical context, connecting the principles and values that underpin this movement with broader trends that have expanded access to education for broader segments of the population. Whereas the noble goal of democratising education has been central at a rhetorical level, it discusses other pressures that were key to the reconfiguration of access to educational opportunities.

The second chapter also offers a detailed account of the genesis and development of the OCW model of OER provision as originally devised at MIT. In this respect, I review various sources that provide insights into the expectations and motives that led to the implementation of the initiative, as well as into the institutional arrangements that enabled the participation of virtually all faculty members teaching at that institution. The chapter finishes with a review of the emerging field of research on OER and positioning this thesis in relation to it.

Chapter 3 presents the theoretical framework where the study is grounded. I start by framing the Social Informatics approach as a field that studies and theorises the relation of ICTs and society without giving priority to either the social or the technical dimensions. After discussing the main assumptions and cumulative findings of Social Informatics and defending the suitability of a practice lens, I focus then on the body of literature that examines the interplay of ICTs with learning and educational processes.

I close the third chapter by supporting the case for advancing a Social Informatics of learning and education and presenting the Socio-Technical

Interaction Networks (STIN) analytical strategy, which is one of the main theoretical contributions of the Social Informatics approach.

Chapter 4 presents the interpretive-naturalistic paradigm of inquiry as the overall approach to social research that underlie this study. Then, I explain the specific research strategy and case study design that I follow, introducing the sites of study and providing a justification for the selection of the three sites. After that, the chapter moves on to discuss the particular methods and procedures that I deployed to generate and analyse relevant data. The study relied on multiple sources of data and methods of analysis, which I applied in order to draw conclusions in relation to both the sites of study and the manifold contexts into which they are embedded. Finally, a brief section reflects on the measures adopted to ensure that the research is of high quality and carried out ethically.

Chapter 5 commences with an overview of the main characteristics of the higher education system in Spain, presenting key regulatory frameworks, bodies and institutions that define the activity and structure of universities, as well as the professional activity of academics. Given that the academic profession in Spain is highly regulated by legislation and government actors operating at a state level, it is essential to pay attention to this complex environment in order to understand the adoption of OER provision practices at local contexts, as well as their integration into the activities and professional identities of faculty members.

The fifth chapter also reflects on the overall level of attention paid to the notion of OER across Spanish universities, as indicated by the results of a Web impact analysis. Moreover, it discusses the role of Universia and the Santander Group as key actors. The chapter ends looking at the varying levels of engagement in the provision of OCW content across universities.

Chapters 6, 7 and 8 present the data generated and analysed in relation to each of the sites covered in the study. The structure of each of these chapters is directly informed by the STIN framework. While the three universities are embedded into the same higher education system (not only at a state level, but also at the regional one), their OCW initiatives have generated significantly different levels of participation (i.e. low, moderate and high) among their faculty members. The same data generation and analysis procedures were replicated at the three sites (in order to facilitate a comparative view), although they are tailored to the specificities of each setting in order to maximise learning opportunities about each OCW initiative.

I analysed local policies, aid schemes, grey literature and other relevant documents in order to gain insight into the discourses around OCW, and more generally OER, at each of the universities under examination. I also crawled the three OCW sites and extracted tabular data from them with the aim of obtaining relevant data – e.g. to know the total number of authors, identify prolific authors, map out authorship networks, understand collaboration dynamics, etc.

These chapters report on data generated by means of 46 qualitative interviews total, divided approximately equally across all three universities. The recruitment strategy prioritised OCW authors that were particularly active in terms of number courses contributed to the OCW initiatives at their universities and/or the breadth and level of elaboration of their materials. Likewise, I also selected a smaller number of informants at each university that were involved in the release of other types of OER, in order to gain insight into their views on the OCW model of OER provision.

Finally, **Chapter 9** offers a comparative perspective across the three sites and presents the main conclusions. It focuses on differences and commonalities with regard to the process of implementation of OCW initiatives at the three universities. Furthermore, it discusses the findings in relation to the literature review and stresses the theoretical implications of the study. At a more practical or applied level, it draws conclusions of general interest beyond the case under investigation, aiming to provide valuable insights for decision-making processes regarding OER initiatives and, more generally, for the design, implementation and uptake of ICTs in the academic environment.

2 Literature review

2.1 Introduction

The provision of OER by universities can be understood as part of a broader historic trend articulated around the progressive opening up of educational opportunities to an increasingly large number of citizens. While the idea of education as one of the core universal rights might have operated as the justification underpinning many relevant endeavours, it is important to pay attention to pressures that may have worked as key elements in the opening up of academic communities and the gradual *massification* of universities (Altbach et al. 2009). This chapter starts by framing OER in such a wider historical framework.

Then I will focus on the particularities of the OCW model of OER provision as originally devised at MIT. In this respect, I will pay attention to the conditions and institutional arrangements where the model first emerged and the keys of its further diffusion across universities all over the world.

The chapter ends with an overview of the emerging body of knowledge on OER, which, as I will argue, is leading to the formation of a field of research in its own right. More specifically, I will highlight some of the weaknesses and limitations of the field and will discuss issues addressed in previous research that are key to the research questions guiding this thesis.

2.2 On the quest for universal access to education: contextualising the OER movement within a wider historical framework

The phrase ‘Open Educational Resources’ was coined in the context of a forum held by UNESCO in 2002. According to the recommended definition outlined in that meeting, OER refers to: “The open provision of educational resources, enabled by information and communication technologies (ICTs), for consultation,

use and adaptation by a community of users for non-commercial purposes” (UNESCO 2002, p.24). A new definition of OER was suggested ten years after that seminal forum. According to that refined definition, the term may be used to designate:

teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. (UNESCO 2012, p.1)

While the original definition limited the concept to a particular technology (i.e. ICTs), the updated version is more inclusive in this respect. For instance, traditional printed books can be regarded as OERs according to the new definition, provided they were published under an open licence (most often Creative Commons) or are already part of the public domain. Therefore, the emphasis of the new definition is on the reduction of legal restrictions regulating access to educational materials, which expands the range of things that users are allowed to do with them. Indeed, the definition of 2012 is less restrictive in this regard, as it did not reject the possibility of users repurposing OERs for commercial purposes, unlike the original definition.

By including the word ‘research,’ the latter definition overlaps partially with the cognate notion of Open Access (OA) publishing, which is typically reserved to talk about scientific publications and does not always imply users’ right to reuse content. While research publications are often used at universities as educational resources, especially at graduate studies level (Butcher 2011), they were not devised primarily for instructional purposes. As noted by Downes, “there ought not to be an *a priori* stipulation that something may or may not be an educational resource” (2007, p.31). However, it is worth making an analytical distinction between those materials that were primarily designed as educational resources

and other materials whose main purpose was different (e.g. communication of research findings to a community of specialists), even though they may be of great value in certain teaching and/or learning contexts. The OER initiatives studies in this thesis were aimed at facilitating learning by supplying materials that most often had been specifically conceived for instructional purposes.

The notion of OER rapidly gained ground over the first decade of the 21st century, attracting a considerable amount of attention from a diverse range of actors willing to support and advocate adherence to the cause, including inter-governmental organisations (e.g. UNESCO, the OECD, the Commonwealth of Learning, etc.), private foundations (e.g. the William and Flora Hewlett Foundation, Bill & Melinda Gates Foundation, Open Society Foundations, etc.), policy-makers working at different levels,² university leaders, and educators around the globe. Taking this into account, it is possible to talk about the emergence and gradual institutionalisation of the so-called ‘OER movement’ (Atkins et al. 2007; D’Antoni 2008; Glennie, Harley, Butcher, et al. 2012; Hylèn 2007; Iiyoshi & Kumar 2008; Walsh & Ithaka S + R 2011).

The principles underlying such a movement have been condensed into several manifestos that contributed to its institutionalisation and further diffusion, namely the *Cape Town Open Education Declaration* (Open Society Foundations & Shuttleworth Foundation 2008), the *Déclaration de Dakar sur les Ressources Éducatives Libres* (UNESCO et al. 2009) and the *Paris OER Declaration* (UNESCO 2012). In essence, the OER movement is grounded on both the idea that “everyone has the right to education,” as stated by the *Universal Declaration of Human Rights*,

² For further information consult the registry of OER policies maintained by Creative Commons: http://wiki.creativecommons.org/OER_Policy_Registry

and the belief that this noble aspiration can and should be pursued by means of ICTs (Caswell et al. 2008; Huijser et al. 2008). This is in tune with the ideals underlying the OA principle, namely that scientific knowledge should be circulated as broadly as technically possible, so anyone with interest in it can gain access (Willinsky 2006).

Before the rise of the OER movement as such, scholars all over the world had been sharing their materials with peers and the public by means of the Internet, especially after the invention of the World Wide Web. Indeed, the Internet is often depicted as an infrastructure that contributed to eroding the boundaries between the public and private dimensions of academia.

Presentations that would have been heard by a few people at a seminar are now widely available online via posting of slides, speaking notes, and Webcasts. Manuscripts, preprints, technical reports, and other written works that were circulated privately are now posted publicly. Online communication has accelerated the amount of informal communication among scholars and simplified the dissemination of formal products of scholarship. (Borgman 2007, p.49)

However, the possibility of having free (i.e. at no cost) access to materials is only a necessary, but not sufficient, condition for materials to qualify as OER. At the very least, users must have the right to reuse and share content with others.

We believe that a baseline definition of ‘open’ requires that the owner or copyright holder allow others to freely reuse and redistribute the work. Allowing others to remix and revise the work further enhances openness, and provides opportunities for new, derivative OERs to be created. (Hilton III et al. 2010)

In this regard, the OER movement is highly concerned with the legal regimes that regulate how people can access and use educational and cultural content. That is, besides calling for the use of Internet-based technologies in order to facilitate universal access to content, it has also played a key role in the development of legal mechanisms aimed at facilitating the legitimate consumption and reuse of such content. Indeed, the early origins of the movement may be traced to 1998, the year

when David Wiley created the Open Content Licence (OCL) as “an attempt to apply the pragmatic arguments made in favour of open source software to educational materials and other content, including scholarly research, music, literature and art” (Wiley & Gurrell 2009, p.13).

However, the Creative Commons licences subsequently displaced the OCL and played a pivotal role in the implementation of most OER initiatives and, more generally, the overall diffusion of the so-called ‘free culture,’ which is characterised by practices involving the creation and circulation of digital artefacts as public goods (Lessig 2004; 2008). While these ‘sharing practices’ have often been described as a quintessential element in the formation of cultural patterns typical of the networked socio-technical environment (Benkler 2006; Castells 2009; Gere 2008; Lessig 2004; Mao 2008), they are largely at odds with current legal frameworks and business models. Indeed, the legislation of many countries does not even allow people to transfer to a portable media player the music contained on a CD that they acquired legitimately (Hargreaves 2011, p.68).

Open licences emerged as a response to the restrictive nature of author rights legislation at a global scale. The goal was to “ensure that copying and sharing happen within a structured legal framework that is more flexible than the automatic all-rights-reserved status of copyright” (UNESCO & COL 2011, p.2). In other words, these licences allow content creators to expand, in a standardised way, the range of legitimate activities that users can do with their works.

One of the first examples of an OER initiative was Connexions,³ which was launched in 1999 by Rice University with the aim of enabling authors to collaborate around the creation of reusable learning objects (Baraniuk 2008; Baraniuk et al. 2002). However, it was the Massachusetts Institute of Technology's OpenCourseWare (MIT-OCW) initiative that acted as a catalyst for the formation and spread of the OER movement as such (see next section). OER initiatives of all kinds and scales proliferated over the first decade of the 21st century, both within the realm of formal education institutions (see for instance the wide range of projects supported by HEFCE⁴ under the UKOER programme⁵) and elsewhere (e.g. Wikipedia,⁶ Khan Academy,⁷ P2PU⁸).

The first generation of OER initiatives were aimed at increasing access to educational opportunities by means of materials that were available to the public on the Web for self-directed learning. Most recently, the interest in the development of frameworks for the evaluation and accreditation of learning based on the use of OER has increased (Camilleri et al. 2012; Conrad et al. 2013), especially after the advent of the so-called Massive Open Online Courses (MOOCs) (Haggard et al. 2013; Yuan & Powell 2013). This second generation of OER initiatives attempts to provide students not only with educational materials, but also with the opportunity of participating in teaching-learning processes that involve interacting with instructors and peers, as well as undertaking a structured set of learning activities during a specific timeframe.

³ <http://cnx.org>

⁴ The Higher Education Funding Council for England (www.hefce.ac.uk).

⁵ www.jisc.ac.uk/oer

⁶ www.wikipedia.org

⁷ www.khanacademy.org

⁸ <https://p2pu.org/>

Advocates of the OER movement have often seen digital media as an inexorable force capable of reducing inequalities and prompting fundamental changes in the higher education arena. However, I approach OER here as a socio-technical construct that can be only understood as the result of a complex interplay between ICTs and other social, political, economic and cultural factors. Under certain circumstances, the Internet and associated technological innovations might be capable of altering how people gain access to resources that are key to learning, research and other activities and processes that are core to the missions and day-to-day functioning of universities. However, the actual consequences of ICTs – which may either enable or constrain human action – are always modulated by the particularities of specific contexts of design, use and implementation. Thus, access may be reconfigured in multiple ways and at different organisational levels, for instance by: “changing cost structures, expanding or contracting the proximity of access, restructuring the architecture of networks, creating or eliminating gatekeepers, redistributing advantages between senders and receivers, and enabling more or less user control” (Dutton 2010, pp.24–25).

If we are to fully grasp the factors behind the onset and subsequent unfolding of the OER movement, it is crucial to put it – and the whole idea of ‘openness’ in education – into a wider historical perspective. The notion of openness has been used to describe a broad range of practices and trends within the academic arena. However, it must be borne in mind that the word ‘open’ is a rather polysemic term, so it does not refer necessarily to the idea of increasing access to educational resources and opportunities, whether for everybody or especially for people who have been traditionally excluded from them.

According to Peters (2008), the idea of openness in education underpins several utopian trends that are ultimately rooted in Enlightenment philosophical principles. In particular, he identifies five key strands or endeavours that have partially coalesced and overlapped, namely 1) the Open Classroom, 2) Open Schooling, 3) the Open University, as a pioneering provider of distance learning, 4) the OCW initiative and 5) the Open Education movement, which according to him “combines the established tradition of sharing good ideas with fellow educators and the collaborative, interactive culture of the Internet” (Peters 2008, p.10).

While the three latter strands understand openness primarily in terms of increasing citizens’ access to educational opportunities, the two former are mainly concerned with the redefinition of traditional learning spaces and dynamics within educational settings. More specifically, they focus on primary education settings and favour the idea of free movement, emphasising the importance of learning by doing and playing as well as challenging teacher-centred dynamics and hierarchies. Despite differences with regard to the way the notion of openness is interpreted in all these movements, Peters and Roberts (2012) claim that:

it is important to recognize the relation of openness to ideals of democratic government with its roots in Enlightenment thought concerning the constitution of science, civil society, and democratic practice. As such, the concept is linked to freedom of speech, peer review, freedom of the press, and other freedoms that have become the basis for constitutional law. (Peters & Roberts 2012, p.33)

Focusing on the notion of openness in relation to science, David (2004; 2008) contends that the ethos, norms and institutions favouring the disclosure of new discoveries and knowledge production methods are mainly rooted in the patronage system emerged in Europe during the late Renaissance period, which gradually displaced the secrecy typical of alchemy. In this context, the reputation of Europe’s ruling families increasingly relied on their ability to attract to their

courts prestigious savants, whose work fulfilled both utilitarian and ornamental purposes.

Disclosure of both new knowledge and reliable techniques for solving practical problems offered a means for the mutual validation of claims to expertise, and public challenges and competitions among the mathematically adept provided a vehicle for building reputational renown. (David 2008, p.29)

In their reconstruction of the history of openness in education, Peter and Deimann (2013) identify several key moments in which the access to learning opportunities was extended to a wider segment of the population. Their historic journey starts with a short lived period in the Middle Ages, at a time when the first European universities were starting to appear as student-driven initiatives. It continues with the introduction and rapid diffusion of the printing press (15th and 16th centuries), the emergence of coffee-houses equipped with libraries (17th century), the foundation of self-education societies (18th century) and miners' libraries (19th century).

Apart from Europe's universities at an embryonic stage, the above-mentioned initiatives took place outside the higher education arena. However, Peter and Deimann (ibid.) also point to three university endeavours that were key to the broadening of access to education. The first one is the University of London (est. 1836), which admitted any male student capable of taking its degrees – regardless of race or religion – and became in 1878 the first university in the UK where women could study. Furthermore, about two decades after its creation, it launched an External System that “opened up the degree to those who could not come to London to study” (University of London 2008).

The second one is the consolidation over the 20th century of the idea of gaining access to knowledge as a people's right. They illustrate this trend with the

1918 Cordoba Reform, in Argentina, and in particular with the case of the University of Buenos Aires, which marked an era of free (i.e. at no cost) access to education at university level. The last landmark that they highlight is the rise of distance education, which they exemplified with the renowned case of the UK's Open University (est. 1969), the University of South Africa and the Indira Gandhi National Open University in India.

A key development that Peter and Deimann failed to notice in their review is the emergence of the so-called 'university extension' movement, engendered in Cambridge and Oxford universities as the result of various political and social factors coalescing in the Victorian era, a time when the university sector was threatened by a profound reform imposed by the state.

The term 'extension' originally referred to the idea of increasing access to education within Oxford itself for men with less economic resources available, as requested in 1845 by a group of dons via an address presented to the university's governing board. However, the idea of university extension was subsequently reserved to talk about a series of peripatetic lectures initiated by Oxbridge scholars in the 1870s, signalling "a recognition of their responsibility to the community in general, and not just to their own matriculated students, when they began to send lecturers out into the towns and cities of late-Victorian England" (Goldman 1995, p.11).

The campaigning efforts of a young scholar called James Stuart (1871) acted as a springboard for those series of extramural lectures, but it is important to stress the role of other contextual factors that made this endeavour feasible. While its philanthropic value is undeniable, the idea of reaching new audiences must be also construed as part of a strategic move aimed at proving the national role

fulfilled by Oxbridge universities, hoping to neutralise or at least minimise the risks of a reform led by external forces.

Within the walls, there was widespread apprehension that if the universities failed to reform themselves adequately the mid-Victorian state would reform them against their will. There was growing appreciation of the hostility of the provincial middle classes to the curriculum, culture, and cost of the universities [...] And some dons feared that Oxford and Cambridge would lose their cultural centrality and academic pre-eminence unless they found ways of reaching and bringing in new audiences. It was as a response to these concerns and challenges that Oxford and Cambridge began to debate the merits of what became known as university extension. (Goldman 1995, p.13)

The idea of contributing to the provision of lifelong learning opportunities open to society at large gradually permeated the mission of other universities and is now a usual area of activity within the higher education sector, which has in turn become “increasingly socially embedded, in the sense that universities and colleges are interacting closely with a multitude of external communities and that each has particular demands in terms of the services it expects from higher education” (Brennan et al. 2008, p.11). The idea of university extension is part of a wider strand of activities that are usually referred to as the ‘third mission’ of universities. Although these activities rely on the research and teaching missions, they encompass a heterogeneous set of initiatives aimed at transcending the traditional boundaries of academia. Indeed, they are also often known as outreach, knowledge transfer, and public or community engagement activities.

Community engagement then is an umbrella term that refers to a wide variety of principles and practices, including:

- community-university partnerships to address questions of mutual concern;
- strategies of economic and social regional development;
- teaching and learning for civic participation (including service learning);
- collaboration with local business and industry
- support for social and cultural initiatives, and;
- locally relevant and applied teaching and research.

(Jongbloed et al. 2007, pp.46–47)

The interaction of each particular university with its local environment and society at large via third mission activities is shaped by a combination of strategic choices and contingent historical factors that may lead to prioritising some areas over others (Laredo 2007). More generally, the idea of devoting resources to the provision of OER must be framed not only in relation to other competing priorities within the so-called third mission, but also taking into account the overall orientation and circumstances of each university.

The three missions of the modern university – teaching, research, and public service – live in constant tension with each other at different levels. Governments have tended to set priorities for different kinds of higher education institutions, often designating "teaching only" and "research only" institutional types. Universities, to the extent that they enjoy autonomy to develop their own plans and programs, must often make hard choices in setting priorities and allocating resources, in cases where they retain multiple missions. (Altbach et al. 2009, p.139)

Whereas OER initiatives are often framed in relation to the role of universities in the provision of life-long learning opportunities, they are increasingly seen as a suitable way of providing formal education. That is, OER initiatives – especially when taking the form of MOOCs – are increasingly being discussed not only as university extension or third mission activities, but also as a way of fulfilling the teaching mission of universities. In order to understand this move it is crucial to take into account the process of steep massification that the higher education sector has been experiencing over the last century, following a trend initiated in the U.S. shortly after the World War II.

In this context, OER is often defended as a potential 'fix' to the imbalance between the increasing demands of education at a university level and the overall lack of resources that governments devote to meeting such demand. As indicated in the introductory section of the *Guidelines for Open Educational Resources (OER) in Higher Education*: "Forecasts suggest that current global enrolments of 165

million will grow by a further 98 million by 2025. However, this growth is unlikely to be accompanied by equivalent increases in the human and financial resources available to the higher education sector” (UNESCO & COL 2011, p.1).

The massification of universities is one of the key trends shaping the current higher education sector at a global scale (Altbach et al. 2009; Becher & Trowler 2001; Bieńkowski et al. 2012). Under the pressures of what is usually described as an information or knowledge-driven economy, governments all over the globe are pushing universities to accommodate an increasing number of students while being provided with less and less public funding. The absolute number of people enrolled in tertiary education at a global scale has increased steadily over the last few decades, rising from 28.6 million in 1970 to 152.5 million in 2007 (UNESCO 2009). Given that about 100 million people were enrolled in tertiary education studies in 2000, it is noteworthy that a great deal of the growth occurred in less than a decade.

The increase in the overall population of tertiary education students has been accompanied by a wider distribution across regions, leading to an exponential decrease in the share of students located in North America and Western Europe. Whereas in 1970 almost half the global population of tertiary education students were in those regions, in 2007 they accounted for just 23%. Interestingly enough, the share of students in East Asia and the Pacific at that time was already considerably higher (31%).

Nevertheless, the differences across regions with regard to the proportion of people gaining access to higher education are still staggering. For instance, more than half of the population of high-income countries, within the relevant age cohorts, have access to tertiary education (Teichler & Bürger 2008; OECD 2011).

According to Trow's typology (1973; 2000), these countries have now reached a 'universal' level of higher education provision. On the contrary, only a reduced economic elite can afford higher education in poorer regions. Indeed, while the gross enrolment rate in North America and Western Europe was 71% in 2007, only 6% of sub-Saharan Africa's population in the relevant age group was enrolled in tertiary education that very same year (UNESCO 2009). As noted by Altbach et al.:

This situation has sparked an interest in finding more versatile and cost-effective ways – new and old – of meeting tertiary education needs. Distance education has thus emerged as an extremely important option for higher education expansion and delivery in many quarters, particularly in the period since the 1990s, which has witnessed rapid and groundbreaking advancements in information and communications technologies (ICTs). (Altbach et al. 2009, pp.123–4)

Under these circumstances, OER initiatives are often expected to help alleviate the problems of those countries where universities cannot cater to an increasingly large proportion of their population wishing to have access to higher education.

Developing countries are pinning their hopes for economic advancement on building a skilled workforce, which means that postsecondary education is fast becoming an imperative for vast segments of the world's population. For these areas of the world, where the existing infrastructure cannot keep up with exploding demand, the open access to educational resources made possible by online technologies may provide a solution. (Oblinger & Lombardi 2008, p.389)

Indeed, the idea that individuals and organisations in developing countries could be among the main beneficiaries of OER underpinned the emergence of the first OER initiatives and was key to the subsequent articulation of the OER movement (Huijser et al. 2008; Materu 2004; UNESCO 2002; Vest 2004; Walsh & Ithaka S + R 2011).

Despite the initial and still prevailing enthusiasm in this respect, empirical studies are starting to challenge the idea that the release of OER can actually

increase access to knowledge, promote equity and offer a valid alternative to educational institutions in developing countries or elsewhere. As noted by Guri-Rosenblit (2005, p.18) in relation to MIT-OCW, but applicable to many other OER initiatives: “Very few, if any, independent students will be able to benefit from the MIT materials and substitute them for registering at a teaching institute and very especially so at the undergraduate level.”

Interestingly, rather than being driven by the belief that all individuals have the right to education as an end in its own, the gradual massification of higher education seems to be more like a response to economic imperatives. In particular, universities are expected to generate a workforce that can meet the needs of a ‘knowledge-driven’ economy that is allegedly deriving from the technological revolution associated with the so-called ‘Information Society’ (for a critical view of these two concepts see: Friesen 2008; Webster 2006).

In parallel, tuition fees have been growing rapidly even in countries with a relatively long tradition of free public higher education that lasted until just a few years ago. As noted by Brennan et al. (2008, p.19):

The question of ‘who benefits’ from higher education is often translated into the question ‘who should pay’ for higher education. The acquisition of educational credentials can be regarded both as providing ‘positional advantage’ for those who possess them (and hence a ‘private good’) and as contributing to the creation of a more productive workforce and a successful national economy (and hence a ‘public good’).

Whereas higher education used to be thought of mainly as a ‘public good’ that contributes directly to the betterment of society, not only in economic terms, over the last few decades policymakers have increasingly approached it as a ‘private good.’ Under these circumstances, some authors suggest that instead of making higher education more egalitarian, OER initiatives could be indeed enabling the

emergence of a two-tier system (Knox 2013. See section 2.3 for a more detailed discussion of this).

By framing the idea of openness in education and science within a larger historical framework, which spans well beyond the advent of digital technologies, it is possible to see the emergence of OER as a socio-technical phenomenon that bears some resemblance to past times that were also characterised by “population growth and diffusion of technological innovations, accompanied by intellectual and social ferment” (Peter & Deimann 2013, p.9). In addition, this historical lens offers a more balanced view of the actual role of philanthropic aspirations, which must be always framed in relation to other instrumental goals and ideological agendas that are playing a key role in the diffusion of openness in formal education institutions and beyond.

2.3 The OCW model of OER provision: genesis, development and diffusion

In the spring of 2001 the Massachusetts Institute of Technology (MIT) launched a new initiative under the name of OpenCourseWare (OCW).⁹ The MIT-OCW was the result of a “study aimed at defining and evaluating MIT's options in the changing educational environment of the Internet” (Abelson 2008, p.165). After considering different possibilities, MIT decided to embark on the design of an Internet-based lifelong learning initiative. While the MIT-OCW was directly aimed at increasing access to educational opportunities for all and advancing the idea of education as a universal right (Caswell et al. 2008), it was not conceived as a distance education venture.

⁹ www.ocw.mit.edu/

The goal was to release a comprehensive set of educational resources that could be used by curious people all over the world as the basis for self-regulated learning processes as well as by educators and curriculum developers. In this regard, it is important to stress that it did not provide users with any kind of tuition, assessment or certification.

We do not intend for students to enrol in OCW course or degree programs, nor will offer MIT credit through the OCW program. We will not arrange for interactions with the MIT faculty through the OCW Web site [...] The OCW site will simply be a collection of our teaching materials [...] OCW is best thought of as a twenty-first century adaptation of a publishing initiative. Faculty members participation in the program will be much more akin to writing and publishing textbooks than to teaching courses. (Lerman & Miyagawa 2002, p.24)

Another core feature of the MIT-OCW is that educational resources were not only accessible for free (i.e. at no cost), but that they could be also modified and re-used for non-commercial purposes. Thus, the MIT-OCW can be regarded as an example of initiative aimed at harnessing the affordances of the networked digital ecosystem in order to create “social and institutional structures that allow individuals and groups to produce information free of the constraints imposed by the need to sell information as goods in a property-based market” (Benkler 2003, p.9). Instead of charging users ‘per view,’ MIT developed a founding model based on contributions and grants from a varied range of organizations, most notably the Hewlett and Mellon foundations, as well as small donations from individual users and MIT’s own budget (d’ Oliveira et al. 2010).

Despite direct precedents such as Connexions and the Open Content Licence, MIT was the first higher education institution willing to 1) place the provision of open educational materials as a core element of its strategic orientation and 2) approach such initiative as a university-wide endeavour – i.e. the ambitious goal was to release, and keep regularly updated, teaching materials specifically

developed for all its courses. Moreover, the MIT-OCW initiative soon attracted an unusual level of attention from journalists (Goldberg 2001; Olsen 2002), influential actors on the educational sector at a global scale and universities wishing to replicate the initiative. Indeed, the MIT-OCW led to the coinage of the wider concept of OER (UNESCO 2002) and acted as a catalyst in the emergence of the OER movement as such.

If we are to fully grasp the diffusion of the OCW model of OER provision and, more generally, the advent and development of the OER movement, it is key to look back on the origins of the MIT-OCW. The initiative emerged as the result of a reflection process on how new media could be best deployed in order to support MIT's mission, which reads as follows:

The mission of MIT is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century.

The Institute is committed to generating, disseminating, and preserving knowledge, and to working with others to bring this knowledge to bear on the world's great challenges. MIT is dedicated to providing its students with an education that combines rigorous academic study and the excitement of discovery with the support and intellectual stimulation of a diverse campus community. We seek to develop in each member of the MIT community the ability and passion to work wisely, creatively, and effectively for the betterment of humankind. (MIT 2013)

After discarding the initial idea of devising a for-profit MIT distance education venture, the team in charge of elaborating the proposal decided to emphasise the idea of using technology to enhance the dissemination of knowledge – at least as embodied in teaching material. The ultimate goal was to address some of the most pressing challenges faced by humankind at that time. In particular, it was being implied that the MIT-OCW could help to narrow the digital divide and offer a solution to the difficulties faced by many regions of the world when it comes to meeting the needs of talented and motivated learners as well as to

providing a reasonable proportion of the population with educational opportunities (d' Oliveira et al. 2010; Kirkpatrick 2006; Vest 2004).

Even further, the president of MIT at the time when the OCW was conceived saw in this initiative the seed of an emerging meta-university: “a transcendent, accessible, empowering, dynamic, communally constructed framework of open materials and platforms on which much of higher education worldwide can be constructed or enhanced” (Vest 2006, p.29). According to him, this joint global effort could eventually help to achieve economic efficiencies across the higher education sector and raise the overall quality of education. In brief, the OCW initiative embodied the promise of changing the educational landscape in two critical ways: 1) closing the socio-economic gap of access to education and 2) enhancing the overall quality of education (Lerman et al. 2008).

Nonetheless, apart from aiming to contribute to the common good and betterment of the world (Vest 2004), the MIT-OCW was also expected to enhance the reputation and leadership of MIT as a global trend-setter in the field of educational technology (Abelson 2008). Interestingly enough, rather than pursuing such goals by incorporating ICTs into campus-based academic programmes (i.e. blended learning) or by offering formal education to non-residential students (i.e. e-learning), the focus was on redefining the relation between MIT and its external stakeholders by means of an initiative that can be framed as an example of university extension.

A major concern during the process of design and implementation of the MIT-OCW was to ensure that the efforts to reinforce the relationship between MIT and society at large would not undermine in any way its service as a residential institution, which was a higher priority (Abelson 2008). After the consultation

process with faculty members it became clear that their “participation would largely depend on how much of the publication process could be offloaded to other staff; the plan for implementing OCW had to minimize faculty burden” (Lerman et al. 2008, p.219). As Lerman and Miyagawa stressed, faculty members “operate essentially at capacity, and doing any new task inevitably means not doing something else” (2002, p.27). The \$3.7 million annual budget (d’ Oliveira et al. 2010) was essential in order to secure the extra support associated with the development of OCW courses.

Besides the ability to mobilize the required resources, Lerman et al. (2008) argue that another key factor is that the initiative drew on a culture of open sharing that was already deeply entrenched in the academic community of MIT, mainly taking the form of a widespread circulation of pre-prints and open source licensing, but also with regard to teaching resources. After meetings with 33 individual departments and administrative units to discuss the initiative, the planning group concluded that it was largely perceived as an opportunity to support on-going practices and concerns:

The most widespread reaction was that OCW would help with course content modernization, providing resources and unburdening faculty from technical production chores. There was also recognition that MIT faculty were putting course materials on the Web anyway, and that doing this on a large scale would be more efficient in terms of technology and in addressing policy issues. (Abelson 2008, p.169)

As a specific model of OER provision, the MIT-OCW played a key role not only at the onset of the OER movement, but also in its further articulation and consolidation. Shortly after it was launched, the MIT-OCW initiative started to attract the interest of other higher education institutions and organisations all over the globe wishing to replicate it (Vlădoiu 2011).

Between 2004 and 2005 an increasing number of universities decided to follow the example set by MIT and launched their own OCW sites. After receiving an overwhelming number of requests for guidance, MIT collaborated with other universities and organisations in the creation of the Global OCW Consortium,¹⁰ which was officially launched in 2006 (Carson & Forward 2010; Carson 2009). The overall goal was to facilitate and promote the adoption of the OCW model of OER provision, as well as to foster cooperation between universities that were already on board. As stated in the memorandum that all affiliates must sign before joining the consortium, members commit to develop an OCW site that:

- Publishes course materials created by faculty (and sometimes other colleagues or students) to support teaching and learning from at least 10 courses from a duly accredited institution
- Is IP-cleared, meaning that the opencourseware publisher has the rights to make the materials available under open terms and that nothing in the materials knowingly infringes the copyrights of others
- Offers the materials free of charge for non-commercial use
- Is universally accessible via the Web
- Permits use, reuse, adaptation (derivative works), translation, and redistribution of the materials by others.

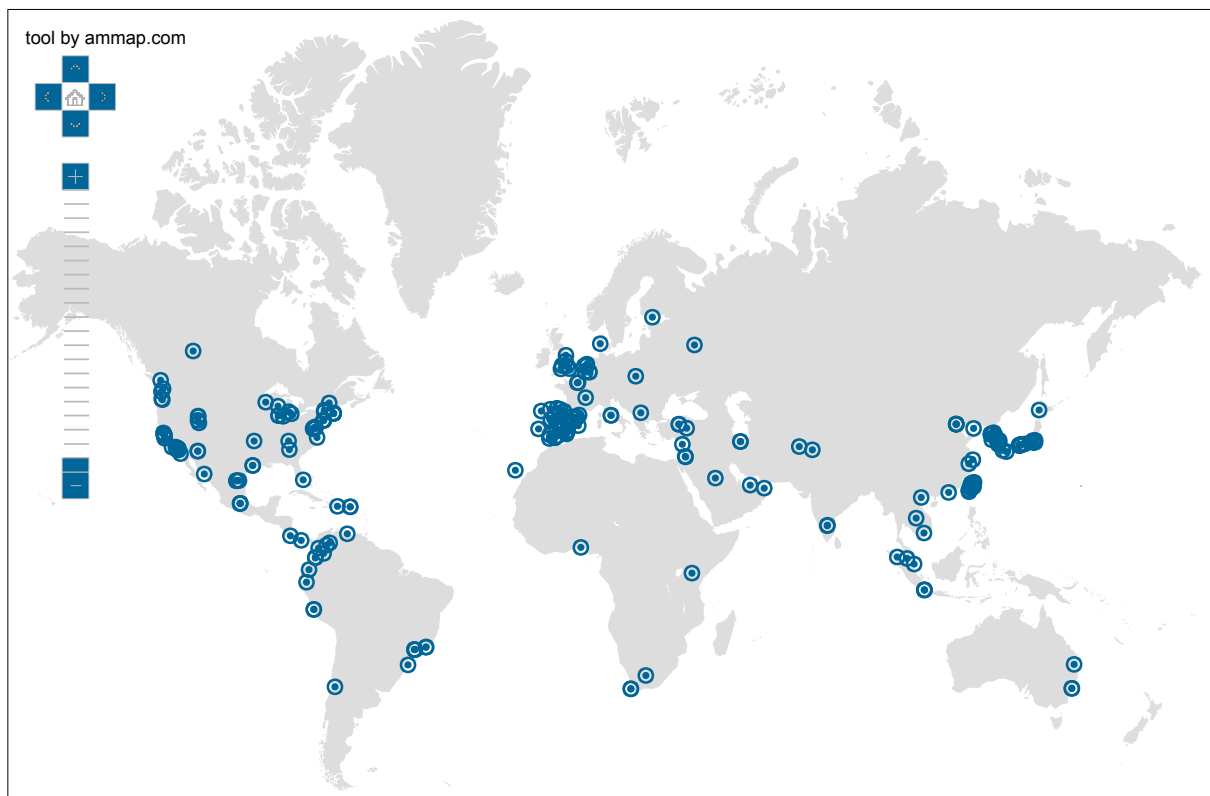
(The OCW Consortium n.d.).

The number of organisations that have become members of the OCW Consortium suggests that university leaders around the globe see the OCW initiative as amenable to replication within an extremely diverse range of contexts and higher education systems. In March 2014 there were 207 universities from 52 countries affiliated with the OCW Consortium. In addition, there were 59 organisational members, including JISC and the Higher Education Academy in the UK, and 15 associate consortia.

¹⁰ <http://www.ocwconsortium.org>

The case of Spain is particularly prominent in this regard due to the relatively large number of universities that have joined the OCW Consortium over the last decade. In particular, about 43% of universities in Spain are members of that organisation. Spain was also the largest country in terms of absolute number of higher education institutions affiliated with the OCW Consortium until very recently and is now outnumbered just by the US, which has 36 institutions of higher education in the consortium.

Figure 1 - Members of the OCW Consortium



Source: Web site of the OCW Consortium (March 2013)

In addition, Spain was the first country to lead the creation of a regional OCW Consortium, gathering universities in the Ibero-American area (i.e. Spain, Portugal and Latin America). The formation of that associate consortium was initiated and steered by Universia, an international network of universities sponsored by the Santander Bank (see Chapter 5). Nevertheless, looking just at the relatively large

number of affiliated universities in Spain may result in misleading conclusions about the actual impact or awareness of OCW initiatives in this context. Indeed, for some universities it took several years to launch their sites and many of them have released very little content for the moment.

2.4 OER Research as an emerging field of study

The proliferation of initiatives and advocacy efforts over the last decade has been accompanied by the emergence of a community of researchers interested in taking OER as an object of study. Indeed, the idea of conducting research on OER is embedded into the overall agenda of the OER movement. For instance, one of the recommendations included in the *Guidelines for Open Educational Resources (OER) in Higher Education* is that higher education institutions “promote research on using, reusing and repurposing OER” (UNESCO & COL 2011, p.7). Similarly, in the *Paris OER Declaration* governments are recommended to:

Foster research on the development, use, evaluation and re-contextualisation of OER as well as on the opportunities and challenges they present, and their impact on the quality and cost-efficiency of teaching and learning in order to strengthen the evidence base for public investment in OER. (UNESCO 2012, p.2)

What is more, it may be argued that OER research is being gradually institutionalised as an area of study in its own right, as suggested by 1) funding provided by a wide range of influential organisations, 2) universities with organisational structures specifically devoted to the study OER, 3) networks and events aimed at fostering scholarly communication and collaboration between OER researcher and, most notably, 4) a fast growing body of publications, including both peer-reviewed works and grey literature.

A wide range of public and private organisations have funded research aimed at gaining insight into the creation, circulation, use, re-use and impact of OER. A list

of some of the most prominent examples include the William and Flora Hewlett Foundation (e.g. Atkins et al. 2007; Boston Consulting Group 2013; Hewlett Foundation 2011; Hewlett Foundation 2013), the Bill and Melinda Gates Foundation (see the MOOC Research scheme¹¹), UNESCO (e.g. D'Antoni & Savage 2009; McAndrew & Cropper 2011; Santos 2011), COL (e.g. Glennie, Harley, Butcher, et al. 2012; Hoosen & Neil Butcher & Associates 2012), the OECD (Hylèn 2007) and JISC in the UK (Bacsich et al. 2011; Masterman & Wild 2011; McGill, Falconer, Littlejohn, et al. 2013; White & Manton 2011; Yuan & Powell 2013).

In addition, several aid schemes of the European Commission have also funded OER research. Just to mention a few, the Open Educational Resources Quality Initiative (OPAL)¹² and the OportUnidad Project¹³ were respectively funded by the EU Lifelong Learning Programme (Education and Culture DG) and the Alfa III Programme (Development and Cooperation – EuropeAid). Moreover, the EC's Institute for Prospective Technological Studies (IPTS) has recently launched the project Open Educational Resources and Practices in Europe (OEREU)¹⁴.

A few universities have also developed organisational structures of different kinds that are specifically concerned with OER research. For instance, universities in both North America and Europe host a UNESCO Chair in OER, namely Athabasca University¹⁵ (Canada) and the Dutch Open Universiteit.¹⁶ In a similar vein, the UK's

¹¹ <http://www.moocresearch.com/>

¹² <http://www.oer-quality.org>

¹³ <http://www.oportunidadproject.eu>

¹⁴ <http://is.jrc.ec.europa.eu/pages/EAP/OEREU.html>

¹⁵ <https://unescochair.athabascau.ca/chair/oer>

¹⁶ <http://oer.unescochair-ou.nl/>

Open University hosted the Support Centre for Open Resources in Education¹⁷ (SCORE) during 2009 and 2012, a HEFCE-funded initiative that included among its aims the production of OER research. Most recently, in 2013, that university launched the OER Research Hub¹⁸ with the support of the Hewlett Foundation.

The Open Learning Network¹⁹ (OLnet) and the Global OER Graduate Network²⁰ are examples of international networks aimed at fostering collaboration among OER researchers. The former, an initiative supported by the Hewlett Foundation and jointly run by the Open University (UK) and Carnegie Mellon University (US) from March 2009 to April 2012 brought together an extensive community of researchers formed by members of both universities and fellows from other organisations. More than eighty documents were produced in the course of the project, including reports, journal articles, book chapters and conference papers on topics such as participatory learning, learning design of OER, collective intelligence, the OER effectiveness cycle, and OER reuse.²¹ As for the Global OER Graduate Network, it is an initiative of the above-mentioned UNESCO Chair in OER at the Dutch Open Universiteit in an attempt to articulate a scientific community built around the study of OER. In particular, it intends to encourage the development of PhD theses focusing on OER and to foster the interaction between graduate students working on that topic.

Academic events have traditionally operated as a key element in the institutionalisation of any emerging field of study. On the one hand, they may contribute to strengthen the cohesion of the communities of researchers and

¹⁷ <http://www8.open.ac.uk/score/>

¹⁸ <http://oerresearchhub.org>

¹⁹ <http://www.olnet.org/>

²⁰ <http://oer.unescochair-ou.nl/>

²¹ A full list of publications is available at <http://www.olnet.org/content/publications>

practitioners that are engaged in the study of OER. On the other hand, conferences may increase the visibility of such communities and draw the attention of new researchers and stakeholders to this area.

The relatively large number of conferences on OER hosted over the last few years can be taken as an indicator of the emergence of OER research as a distinct area of scholarship. It not only shows that a certain critical mass of research on OER is now being conducted and that researchers are interested in sharing their work with peers, but also that the topic is perceived as relevant by funding bodies, which is particularly relevant in the current context of scarcity.

OER is the focus of international academic events taking place on a regular basis, most notably the OpenEd Conference²² and the OCW Consortium Global Conference,²³ which were held for the first time in 2003 and 2005 respectively. Most recently, in 2010, the UK's OER Conference²⁴ was initiated. In addition, relevant one-off events have been also devoted to OER research, such as the OpenLearn Conference: Researching Open Content in Education, held at the UK's Open University in 2007, or the two-day seminar scheduled as part of the UNESCO OER World Congress in 2012.²⁵

Moreover, OER research is now usually featured in keynotes and presentations at conferences with a wider scope, mainly in areas such as education and computer sciences. Studies on OER have been often presented at the IEEE Global Engineering Education Conference (EDUCON),²⁶ the International

²²<http://openedconference.org/>

²³<http://conferences.ocwconsortium.org/>

²⁴<http://oer14.org/>

²⁵www.unesco.org/oercongress

²⁶www.educon-conference.org

Conference on Networked Learning,²⁷ and the annual conferences of the UK's Association for Learning Technology²⁸ and the European Distance and E-learning Network (EDEN).²⁹

The fact that several books specifically devoted to OER – and, more generally, to the notion of openness in education – have been published over the last few years also supports the claim that it is becoming an area of research in its own right (e.g. Glennie, Harley, Butcher, et al. 2012; Iiyoshi & Kumar 2008; Peters & Roberts 2012; Walsh & Ithaka S + R 2011). Another relevant indicator is that recent edited books on educational technologies and the transformation of the higher education sector at large are paying a considerable amount of attention to OER (Lane 2008, p.e.g.; Read 2008; Sclater 2010; 2011; Shaffert 2010; Wheeler 2010).

Perhaps due to the practical orientation of OER research, numerous reports and other kinds of grey literature have been released over the last few years by organisations involved in the development and/or promotion of OER initiatives. Most of these publications are aimed at either raising awareness of OER (e.g. Butcher 2011; Higher Education Academy & JISC n.d.) or reporting on the development and impact of projects and programmes articulated around the provision and/or evaluation of OER (e.g. Camilleri & Ehlers 2011; Geser et al. 2007; Mansell et al. 2010; Massachusetts Institute of Technology 2006; McGill, Falconer, Littlejohn, et al. 2013).

²⁷ www.networkedlearningconference.org.uk

²⁸ <https://www.alt.ac.uk/>

²⁹ www.eden-online.org

However, the still modest but fast-growing number of peer-reviewed publications concerned with OER is perhaps the best indicator of its gradual consolidation as an area of study in its own right. After submitting a carefully designed query to Scopus, “the largest abstract and citation database of peer-reviewed literature” (Elsevier B.V. 2014), I retrieved 268 articles and 213 conference papers – published between 2001 and 2013 – dealing with OER or open content in education to some extent, as indicated by the inclusion of relevant terms in their titles, abstracts or keywords.³⁰ More than half of these publications explicitly mentioned the term OER in their abstracts, while OCW was the main focus of a narrower subset (see Table 1). A considerably higher number of documents ($n = 605$) are returned by the query if the term MOOC is also included.

Table 1 – Nº of articles and conference papers in the sample mentioning the terms OER or OCW in their title or abstracts

	Total	OER in title	OER in abstract	OCW in title	OCW in abstract
Articles	268	97	154	29	48
Conference papers	213	65	104	25	52
Total	481	162	258	54	100

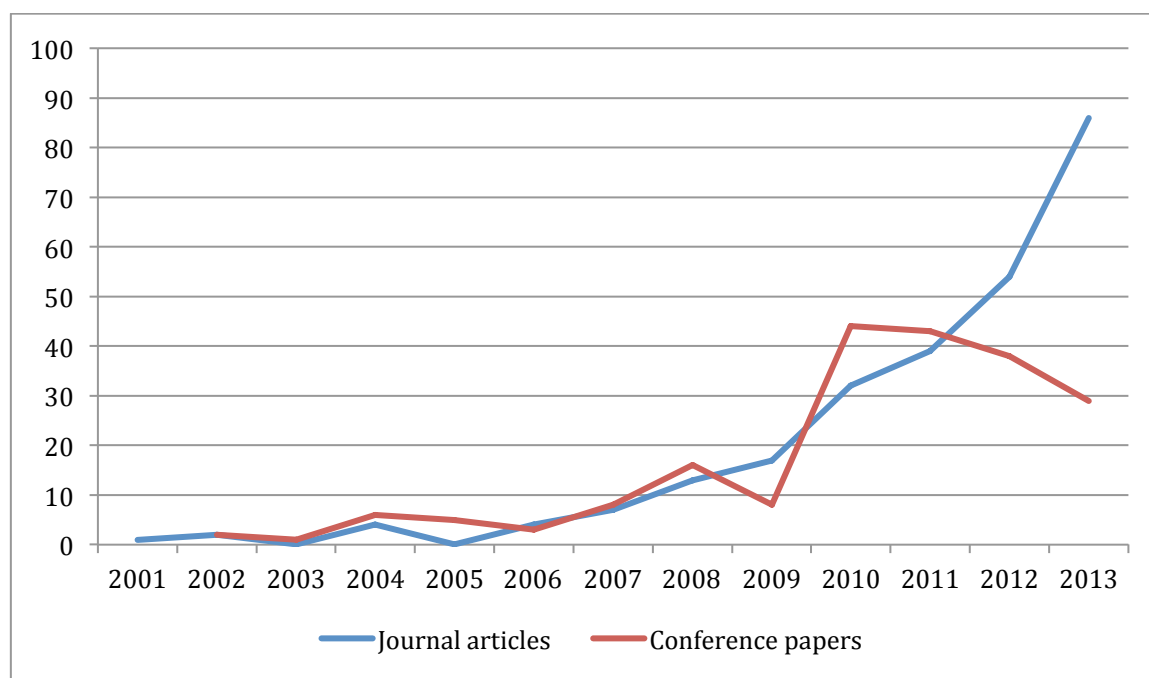
According to this sample of documents, the four most active countries in terms of production of OER research are the US ($n = 128$), the UK ($n = 85$), Spain ($n = 52$) and Canada ($n = 25$). More specifically, particularly active OER researchers were based at the Open University (UK), the Universidad Politécnica de Madrid

³⁰ The syntax of the query that I constructed was: TITLE-ABS-KEY("open educational resources" OR "open educational practices" OR "open courseware" OR "opencourseware" OR "open education resources" OR "open education practices" OR ("open content" AND education) OR (oer AND education) OR "open educational initiative" OR "open educational policies") AND PUBYEAR > 2000 AND (EXCLUDE(PUBYEAR, 2014)) AND (LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "cp")). Since the phrase “Open Content” and the acronym “OER” might be used to talk about different things, the co-occurrence of the word “education” was introduced as a condition in order to anchor their meaning and minimise spurious matches in relation to those two terms as much as possible.

(Spain), the Universidad Técnica Particular de Loja (Ecuador), Brigham Young University (US), the Open University of the Netherlands, the Massachusetts Institute of Technology (US), and Athabasca University (Canada).

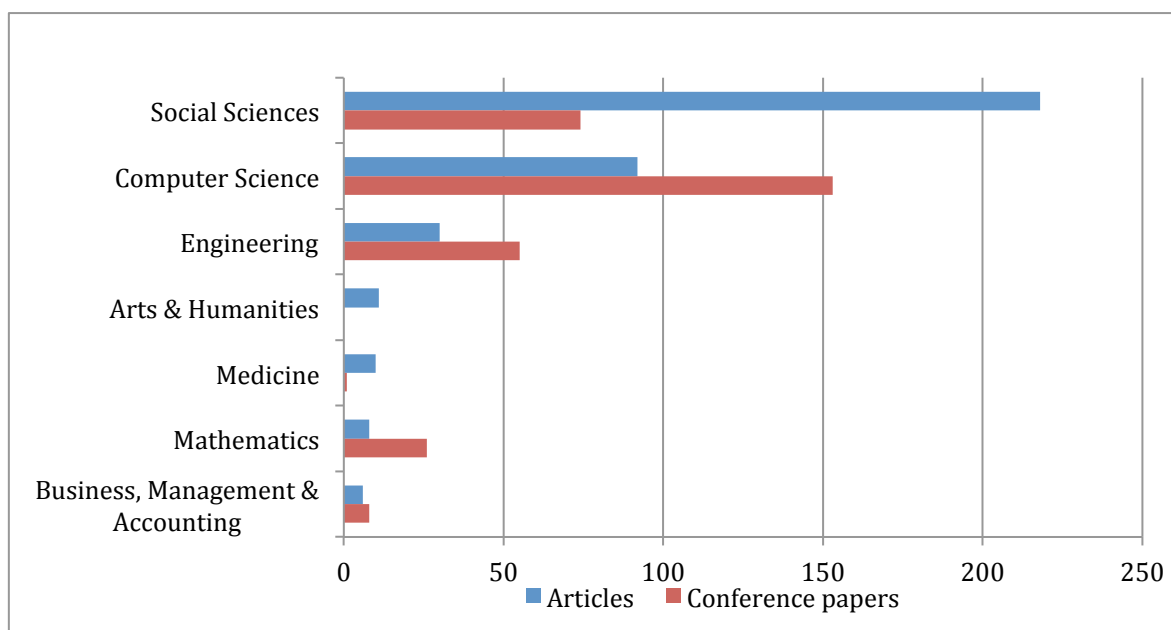
According to this sample, the number of journal articles concerned with OER has increased steadily over the last few years, rocketing in 2009 (see Fig. 2). While initially research on OER was presented more frequently via conference papers, since 2011 journal articles have outnumbered them. In tune with well-known disciplinary trends, journal articles play a particularly relevant role in the dissemination of OER studies in the Social Sciences, while conference papers are the preferred way of publication among those researchers approaching OER from a Computer Science or Engineering perspective (see Fig. 3).

Figure 2 - Articles on OER by subject area



Data retrieved from Scopus by author

Figure 3 – Articles and conference papers by subject area



Data retrieved from Scopus by author (2001-2013). The graph shows the number of publications categorised under the six more common subject areas. Each publication might belong to more than one subject area.

The sample of articles returned by Scopus was very diverse – in terms of subject areas, degree of specialization, longevity and reputation or impact of the journals in which they were published. In particular, there were 124 journals indexed by Scopus that had published at least one article on OER, though only 13 of these journals contained more than 3 documents (see Table 2). Seven of those journals were classified simultaneously under the subject areas Social Sciences (Education) and Computer Science or Engineering, while the six remaining journals were only part of the Social Sciences category. All these journals have a special focus on distance education, e-learning and educational technologies, except *First Monday*, which is one of the pioneering journals in the area of Internet Research. Interestingly, the first article on OER included in the sample was published in that journal (Ishii & Lutterbeck 2001).

The most influential journals – according to Scopus' indicators of impact – among those that have published several articles on OER are the *British Journal of*

Table 2 – Journals by number of articles on OER

Journal	Articles on OER	Subject area of journals	Publisher	SJR ³¹	SNIP ³²
International Review of Research in Open and Distance Learning	37	Social Sciences: Education	Athabasca University	0.551	1.082
Distance Education	15	Social Sciences: Education	Taylor & Francis	0.641	1.064
Journal of Asynchronous Learning Network	10	Computer Science: Computer Networks and Communications Social Sciences: Education	Sloan Consortium	0.311	0.569
Open Learning	9	Social Sciences: Education	Longman	0.442	0.950
E-Learning and Digital Media	9	Computer Science: Computer Science Applications Social Sciences: Education	Symposium Journals Ltd.	0.151	0.332
IEEE Transactions on Learning Technologies	9	Computer Science: Computer Science Applications Engineering Social Sciences: Education	Institute of Electrical and Electronics Engineers Inc.	0.829	2.115
Journal of E-Learning and Knowledge Society	7	Computer Science: Computer Science Applications Social Sciences: Education	Italian e-Learning Association	0.187	0.261
First Monday	5	Computer Science: Computer Networks and Communications Computer Science: Human-Computer Interaction Social Sciences: Law	First Monday	0.572	1.376

³¹ The main characteristic of the SCImago Journal Rank (SJR) is that it is based on the logic behind Google's PageRank. A similar algorithm is applied by this indicator with the aim of assessing the prestige of the average article in a journal, taking into account the influence of the sources cited (SCImago 2007b; González-Pereira et al. 2010). The SJR indicator “expresses the average number of weighted citations received in the selected year by the documents published in the selected journal in the three previous years, – i.e. weighted citations received in year X to documents published in the journal in years X-1, X-2 and X-3” (SCImago 2007a).

³² The Source-Normalized Impact per Paper (SNIP) is an indicator of impact that measures also the status of the citing sources, that is, it assesses the relevance of a given document taking into account the prestige of the documents that quote it. More specifically, it measures a source's contextual citation impact. It takes into account characteristics of the source's subject field, especially the frequency at which authors cite other papers in their reference lists, the speed at which citation impact matures, and the extent to which the database used in the assessment covers the field's literature. SNIP is the ratio of a source's average citation count per paper, and the ‘citation potential’ of its subject field. It aims to allow direct comparison of sources in different subject fields” (Elsevier B.V. 2011, p.3).

Journal	Articles on OER	Subject area of journals	Publisher	SJR	SNIP
International Journal of Emerging Technologies in Learning	5	Engineering Social Sciences: Education	Kassel University Press	0.169	0.364
On the Horizon	5	Social Sciences: Education	Emerald Group Publishing Ltd.	0.394	0.587
Journal of Computing in Higher Education	4	Social Sciences: Education	Paideia Publishers	0.783	1.131
International Journal of Technology Enhanced Learning	4	Computer Science: Computer Science Applications Social Sciences: Education	Inderscience Publishers	0.179	0.929
British Journal of Educational Technology	4	Social Sciences: Education	Blackwell Publishing	1.675	1.732

Apart from the journals included in the sample returned by Scopus, the *Journal of Open, Flexible and Distance Learning*, the *Journal of Interactive Media in Education (JIME)*, and *Open Praxis* – respectively published by the Distance Education Association of New Zealand (DEANZ), the Open University, and the Council for Open and Distance Education (ICDE) – have also developed a special interest in OER research.

Just like much of the grey literature on OER, some peer-reviewed publications also offer an account of the development, frameworks or impact of OER initiatives at specific higher education institutions, often from the perspective of those who have been involved in the decision-making and/or implementation process behind them (e.g. Baraniuk et al. 2002; Barrett et al. 2009; Gourley & Lane 2009; Highton et al. 2011; Ives & Pringle 2013; Lee et al. 2008; Llorens et al. 2010).

Overall, the body of literature on OER is rather diverse in terms of scope, levels and units of analysis. While some studies focus on specific organisations and initiatives, others operate at a wider scale. For instance, some studies look at policy-making efforts and other types of actions undertaken by governments in

relation to OER (Hoosen & Neil Butcher & Associates 2012; Stacey 2013). There are also studies that aim to provide an account of the situation within specific countries or regions (Cobo 2013; Huang et al. 2012; Ngugi 2011; Tovar, Lopez-Vargas, et al. 2013; Santos 2011).

Beyond levels of analysis defined in relation to geographic or political boundaries, there are studies that focus on specific models of OER provision, such as OCW platforms (Vlădoiu 2011), open textbooks (Baker et al. 2009; Hilton III et al. 2012) or MOOCs (Haggard et al. 2013; Yuan & Powell 2013). Likewise, some studies address the production and/or use of OER in the context of particular domains, such as adult education (Falconer, McGill, et al. 2013), engineering (Abdulwahed et al. 2012), language teaching (Beaven 2013), public health (Hemingway et al. 2011), psychology (Hilton III. & Laman 2012) or sociology (Tan & Pearce 2011).

Over the last few years the wider notion of ‘Open Educational Practices’ has been gaining ground in an attempt to underscore the importance of not just fostering the provision of OER, but also the need of paying attention to how learners and educators may actually benefit from them. According to some authors, this is marking an inflection between a first and a second phase in the development of the OER movement and, therefore, the focus of OER research:

We consider that OER are moving from a first phase, in which the emphasis was on opening up access and availability, to a second phase in which the focus will be on improving learning quality through OER. We therefore suggest extending the focus of attention on open education beyond resource access to innovative open educational practices (OEP). (Ehlers 2011)

One of the key characteristics of the field of study on OER is that the research agenda has been strongly influenced by practitioners, advocates and private funders. In a paper commissioned by the Hewlett Foundation with the aim of

outlining key areas for the advancement of OER research until 2021, Marshal S.

Smith identifies nine core ‘research buckets:’

A) Policy Research – studies of how and why OER might be better embedded in local, state and national policy and practice; B) Access and Use – studies of how OER add value by increasing access and use, including going to scale; C) Effectiveness – studies of how OER improve outputs and outcomes (learning, efficiency); D) Innovation – investigations into new ideas and possible creative disruption arising from the use of OER; E) Beyond Formal Education – research on the use of OER in other sectors, including public health and agriculture; F) Sustainability – research on the viability of OER products over the long term; G) Development and Improvement – studies to understand and improve the processes of creating, altering and using OER; H) Implementation – studies of the processes of introducing and using OER around the world in classrooms, schools, districts, states and countries; and I) Infrastructure – research on the underlying framework and health of OER and the institutional ICT infrastructure. (Smith 2013, pp.4–5)

While many of those themes are topical, it is surprising that this agenda hardly gives room for questioning whether the provision of OER is actually beneficial to society and under what circumstances it could be detrimental to the educational realm and citizens at large. In this sense, OER seems to be approached as an end in itself, while research on OER is often deployed as an instrument for reaffirming its value.

Generally speaking, it is assumed that the production and release of OER is something intrinsically good.

Lack of critical perspective is perhaps unsurprising when the concept of OER presents itself as such a self-evident social “good”. The situation is similar to the erstwhile uncritical acceptance of schooling as an unquestionable social “good” that could easily resolve social ills like poverty and inequality — until the radical de-schooling movement emerged in the 1970s. At present, there is little sign of an even moderate intellectual “de-OER” movement. (Glennie, Harley & Butcher 2012, p.6)

Only a few authors have started to posit critical research questions and to problematize some of the presumptions that underpin both the OER movement and the associated research agenda. For instance, Rhoads et al. (2013) points to three problematic areas deriving from the OER movement, namely issues of epistemology, pedagogy and hegemony. First, many OER initiatives imply a very

narrow notion of knowledge, which is usually understood just as facts amenable to objective testing. Second, the role of teaching is often downplayed as compared to self-directed and social learning, which is generally orientated towards memorising or developing technical skills to the detriment of interpretive processes. Third, there is a lack of concern with regard to factors that could render OER a disempowering force, reinforcing the hegemony of a minority and helping to reproduce social inequities.

In tune with the third argument, Knox (2013) suggests that instead of fostering social justice OER could be actually deepening educational and economic divides through the consolidation of a two-tiered educational system. That is, while the economic elites shall benefit from tuition and first-class educational experiences, an increasing mass of unprivileged people could be expected to rely on self-directed learning based on OER materials or, at best, on peer-support and automated forms of instruction and assessment provided by MOOCs. Thus, OER advocates could be inadvertently reinforcing the impact of neoliberal agendas on the higher education sector (Alevizou 2012; Rhoads et al. 2013; Selwyn 2013).

Moreover, although much of the literature emphasises the potential of OER for bridging gaps and promoting equity, a few researchers contend that there are many social, cultural and technological barriers that seems to be preventing this from happening (Lane 2009; Ngimwa & Wilson 2012; Olakulehin & Singh 2013; Richter & McPherson 2012; Willems & Bossu 2012). Further, the idea of 'enlightening' the developing world via educational content or experiences mainly designed at universities in the Western world may be also seen as a rather patronizing endeavour, if not as a form of cultural imperialism. But apart from this, educational materials originally developed for students at elite institutions – like in

the case of MIT-OCW – could be simply being regarded as irrelevant by educators and learners in the developing world (Hatakka 2009).

Another limitation of OER studies is that much of the research has been conducted by people who were somehow involved in the development of the initiatives under investigation. In this regard, the field seems to put undue emphasis on cases that are presented as examples of best practice, disregarding tensions or negative outcomes and limiting comparative studies across settings.

This study focuses on three universities that have implemented OER initiatives with varying levels of success. As dictated by the nature of the research questions introduced in Chapter 1, this thesis is particularly concerned with the supply side of OER and pays especial attention to the tensions and contradictions that revolve around the provision of OER at several institutional levels.

OER research has paid particular attention to sustainability issues and other aspects associated with it, such as the securement of funding or the development of efficient business models (Butcher & Hoosen 2012; Downes 2007; Kanwar et al. 2010; Wiley 2007). While some contend that subsidies are essential for ensuring the long-term sustainability of independent business models for OER (de Langen 2011), others argue that the potential of OER initiatives as marketing devices may facilitate access to operational funding (Friesen 2009a). Furthermore, some OER initiatives have actually proven to be financially self-sustaining (Johansen & Wiley 2011). In any case, the key issue is whether universities and faculty members have strong enough reasons to justify the investment of resources, time and efforts in the creation of OER.

Some authors have examined the motives and expectations of university leaders responsible for the decision-making process behind the development of

OER initiatives, as well as the role that such initiatives play in relation to the mission and overall strategic orientation of universities (Hylèn 2007; Ives & Pringle 2013; Lane 2012; McGill, Falconer, Dempster, et al. 2013; Sclater 2010). However, a very limited amount of attention has been paid to the actual embedding of broad theoretical motivations associated with particular models of OER provision (i.e. the OCW model) into specific institutional contexts where such models are implemented or replicated. This thesis aims to explore to what extent and in what ways such motivations are localised at several specific settings.

According to Hylèn, there are six theoretical arguments that, combined in different degrees, may explain why some higher education institutions are engaged in the provision of OER:

- The duty of contributing to the common good and advancing education as a universal right, that is, *“the altruistic argument that sharing knowledge is a good thing to do which is also in line with academic traditions”* (Hylèn 2007, p.64).
- The idea that “educational institutions should leverage taxpayers’ money by allowing free sharing and reuse of resources developed by publicly funded institutions” (ibid.).
- The aim of improving efficiency and quality: *“By sharing and reusing, the costs for content development can be cut, thereby making better use of available resources. Also, the overall quality should improve over time, compared to a situation in which everyone always has to start anew”* (ibid.).
- A potential role within corporate communication strategies: “it is good for public relations and it can function as a showcase to attract new students” (ibid.).

- In line with the previous argument, the “*need to look for new cost recovery models*, new ways of obtaining revenue, such as offering content for free, both as an advertisement for the institution, and as a way of lowering the threshold for new students, who may be more likely to enrol – and therefore pay for tutoring and accreditation – when they have had a taste of the learning on offer through open content” (Hylèn 2007, p.65)
- The idea “that open sharing will speed up the development of new learning resources, stimulate internal improvement, innovation and reuse and help the institution to keep good records of materials and their internal and external use” (ibid.).

More generally, the reasons for institutional involvement in the release of OER may be categorised as ‘altruistic,’ ‘commercial’ and/or ‘transformational’ (Sclater 2010). The extent to which the provision of OER may help higher education institutions to pursue their strategic goals will certainly depend on the nature of their structures, institutional arrangements and missions. Moreover, the alignment of OER initiatives with the missions of universities may vary to a considerable extent even across relatively similar institutions (for a discussion of this in relation to distance universities see Lane 2012).

When analysing OER provision dynamics, it is also crucial to focus on understanding the factors that may either enable or constrain the involvement of faculty members in the creation and release of content (Browne et al. 2010; Cox 2013; Davis et al. 2010; Reed 2012; Rolfe 2012; Smith & Casserly 2006; Hilton III & Wiley 2010). The lessons learned after all the projects done under the UKOER and SCORE programmes suggest that faculty members may benefit from the release of OER in terms of:

- student/user feedback and open peer review
 - reputational benefits, recognition
 - benefits (efficiency and cultural) of collaborative approaches to teaching/learning
 - opportunities to work across sectors, institutions and subject disciplines
 - increased digital literacies (particularly around IPR)
 - reaching a wider range of learners
- (McGill, Falconer, Dempster, et al. 2013, pp.7–8)

This thesis approaches the potential motivations of faculty members against a complex backdrop of competing priorities and commitments that shape the day-to-day professional lives of academics as well as the strategic orientation of their universities. Indeed, OER initiatives usually suffer from marked incompatibilities with some of the most entrenched institutional arrangements and priorities typical of current higher education systems, both within and beyond the boundaries of universities.

As noted by Selwyn (2013, p.82), “it may be argued that the likelihood of teachers and learners involved in the production of open software or content is curtailed by the realities of institutionalized education – not least issues of time, technical expertise, interest and motivation.” Moreover, while in some cases different types of motivations may mutually reinforce each other, they often result in tensions and conflicting interests (Falconer, Littlejohn, et al. 2013).

In spite of the fast and apparently widespread diffusion of the OCW model, and the increasing level of attention generated by OER initiatives at large as an object of study, more empirical studies are needed in order to understand the extent to which the creation and release of educational content is embedded into the overall strategic orientation of universities and, more importantly, the circumstances under which such activities become meaningful practices to faculty members.

A small body of literature has now been created around OER initiatives in Spain. Taking a rather descriptive approach, some authors present accounts of the implementation of OCW initiatives at their universities (Clifton et al. 2013; Gallardo Paúls 2008; Llorens et al. 2010), while others frame OCW platforms into the wider context of open repositories in Spain (Abadal Falgueras et al. 2013; Santos-Hermosa et al. 2012). As for comparative studies between several universities, they are primarily concerned with the technical features of OCW platforms (Borrás Gené 2010) or the nature and structure of content (Cejudo et al. 2013).

Two studies funded by the Spanish Ministry of Education have adopted a macro-level perspective, examining the implementation of OCW initiatives in Spain and Latin American countries (Frías-Navarro et al. 2010; Tovar, López, et al. 2013). These two studies draw primarily on data collected by means of online surveys, while one of them also included focus groups with managers in charge of OCW offices at several universities. However, they did not include in-depth interviews with either OCW authors or university leaders.

2.5 Chapter summary

In this chapter I contextualised the OER movement within a wider historical framework that comprises other endeavours aimed at widening participation and increasing access to higher education, most notably the so-called university extension movement. I have also summarised the main characteristics of the OCW model of OER provision that was originally developed and first implemented at MIT, as well as the subsequent process of diffusion around the globe due to the high level of interest in replicating the initiative at other universities. A focus on Spain is particularly relevant given that it stands out as one of the countries in

which this model of OER provision has generated considerable levels of interest among university leaders, as indicated by the high number of higher education institutions that have joined the OCW Consortium.

Moreover, I charted the emerging body of literature on OER, which has grown rapidly over the last few years and especially since 2012. While it may be regarded as a field of study in its own right, much of the research on OER is relatively non-critical and remains at a largely descriptive level. In this chapter I have paid particular attention to studies that adopt a critical approach and/or deal with aspects that are key to the research questions of this thesis.

3 Theoretical framework

3.1 Introduction

In this chapter I will present the theoretical framework that underpins the thesis. The first section frames the study in relation to the body of knowledge that aims to theorise the relation between ICTs and society. In particular, it defends the Social Informatics approach as a valuable perspective for the study of socio-technical arrangements, characterised for not prioritising any of the two dimensions over the other one. In addition, the section contends that looking through a practice lens may enhance the theory building potential of Social Informatics and that is particularly relevant when studying the creation of OER.

The second section reviews the academic field focusing on the intersection of ICTs with education and learning, which is presented as the wider area within which the narrower field of research on OER is naturally embedded. In this regard, the section identifies key features of the literature on educational technologies and examines how such characteristics are reproduced in the field of OER research. Most notably, I will argue that research in these domains has been largely under-theorised.

The chapter finishes with a section devoted to making the case for the adoption of a Social Informatics approach in relation to education and learning. More specifically, the final section discusses the adoption of the Socio-Technical Interactions Networks (STIN) approach, an analytical strategy devised in the field of Social Informatics.

3.2 Theories of ICTs and society

3.2.1 Socio-technical perspectives on ICTs: the Social Informatics approach

The widespread diffusion of computers and the Internet over the last decades has been accompanied by an increasing interest in the social and cultural implications of such technologies as an object of study. As noted by Ess and Dutton, “nearly every discipline across the humanities and social sciences has fostered an emerging set of researchers with a focus on Internet-related issues” (2013, p.639). Indeed, according to a comprehensive bibliometric analysis recently conducted on a sample of more than 27,000 journal articles, over the last decade or so the Internet has become one of the most popular topics in both the social sciences and arts & humanities (Peng et al. 2013). What is more, the study of social dynamics and cultural phenomena in relation to the Internet and associated technologies has given rise to an interdisciplinary field on its own right, whether it is called ‘ICTs and Society Research’ (Fuchs 2008), ‘Internet Research’ (Hunsinger et al. 2010) or ‘Internet Studies’ (Consalvo & Ess 2013; Dutton 2013), just to mention a few labels.

The above-mentioned terms are rather inclusive, since they may be used to describe a wide range of studies that only have one thing in common, namely their focus on the interplay between digital media and society as a broadly defined object of study. On the contrary, the term ‘Social Informatics’ does not refer just to a specific object of study, given that it also implies the adoption of a certain theoretical perspective. According to a working definition proposed by the group of researchers who participated in a seminal workshop³³ funded by the US National Science Foundation that took place at Indiana University in 1997, “Social Informatics refers to the interdisciplinary study of the design, uses, and

³³ <http://ils.indiana.edu/siwkshop/SocInfo1.html>

consequences of ICTs that takes into account their interaction with institutional and cultural contexts” (Kling et al. 2005, p.6).

Social Informatics literature may be also seen as “a subset of socio-technical scholarship: one focused on particular forms of technology that directly engage information processing and communications technologies” (Sawyer & Tyworth 2006, p.51). In this regard, it shares some commonalities with works in other areas such as Science & Technology Studies. In particular the Socio-Technical Interaction Networks (STIN) approach (Kling et al. 2003) shares some commonalities with the Social Construction of Technology (Bijker 2001; Bijker & Pinch 1987) and the Actor-Network-Theory (Latour 2005) approaches. Studies assuming that technology and society are inherently inseparable have been also said to follow a ‘sociomaterial approach’ (Orlikowski & Scott 2008).

In a way, the term Social Informatics may be thought of as a ‘descriptor’ (Sawyer & Eschenfelder 2005) or a ‘new name’ (Kling et al. 2005) aimed at bringing together and making more visible a body of knowledge that is scattered throughout multiple disciplines and that “is informed by theories of social behavior, engages the situated nature of ICTs' uses and builds on detailed analyses of empirical research” (Lamb & Sawyer 2005, p.10). Social Informatics research is an approach and set of principles rather than a single and outright theory (Sawyer & Tyworth 2006). Indeed, it is characterized by a high level of both theoretical and methodological plurality (Sawyer 2005; Sawyer & Tapia 2007).

The adoption of the term ‘Social Informatics’ has been relatively modest so far (Meyer 2014), meaning that Kling’s aspiration (2000b; 2007) of helping to connect research that is otherwise scattered in the journals of different disciplines has been fulfilled only partially – mainly by means of the literature reviews

included in those publications that explicitly position themselves in this field or the reading lists included in the syllabi of Social Informatics courses. In any case, it must be borne in mind that “it is possible for a scholar to contribute to the social informatics literature without ever having considered his work to be a part of this (or any larger) corpus of similar findings” (Sawyer & Eschenfelder 2005, p.432).

Social Informatics provides researchers with a resource kit consisting of “perspective lenses through which research data can be viewed critically; techniques for building theory and developing models from socially rich empirical data; and a common body of knowledge regarding the uses and effects of ICTs” (Lamb & Sawyer 2005, p.10).

Assumptions

There is a threefold set of connected principles underpinning those works that may be described as examples of Social Informatics research, namely the *embeddedness*, the *duality* and the *configurability* of ICTs (Kling et al. 2005; Rosenbaum 2009). The idea of embeddedness implies that ICTs do not exist as isolated entities. By contrast, they must be approached as situated or context-dependent phenomena. ICTs are part of wider ‘information ecologies’ that are circumscribed by a sense of locality, which is not defined in terms of geographic proximity but in relation to the specific areas of interest and commitment of particular individuals (Nardi & O’Day 1999). Such ecologies may be conceived of as socio-technical arrangements that are formed by a diverse range of interrelated ‘species’ and elements, including artifacts (such as hardware and software), people, roles, values, practices, norms, protocols (Sawyer & Rosenbaum 2000; Kling et al. 2005; Kling 2007).

The second principle, duality, entails approaching the relationship between ICTs and the social fabric in which they are embedded as bidirectional and without giving priority to one of these two dimensions over the other. As Meyer (2014; 2006) puts it, Social Informatics is interested in the hyphen that links together socio-technical systems. Since technologies and the social world are seen as intertwined or co-constituted, Social Informatics rejects both socially and technologically deterministic approaches (Kling 2000a; Orlikowski 1992). This principle is in tune with the idea of a mutual shaping of technology and society, which challenges “the separation between shaping and diffusion matters in the evolution of new media artefacts by looking at the interpenetration of technical construction and societal diffusion, the ongoing character of this process, and the influence of the historical environment in which it takes place” (Boczkowski 2004, p.258). It is noteworthy that Social Informatics researchers do not approach people as mere users, but as complex social actors who maintain social ties across several institutional environments, interact in different ways and actively construct identities for themselves and others (Lamb & Kling 2003; Sawyer & Tyworth 2006).

The third related principle, configurability, implies that the roles and meanings of ICTs may vary wildly from setting to setting, often contradicting the expectations of those who were in charge of the processes of design and/or implementation. Moreover, the roles and meanings of ICTs within a given setting may also shift over time. The actual configuration is always the result of a combination of action and structural properties that is “dependent in part on situated contexts and elements such as the task, roles, timing, nature of interdependencies, particular ICTs being used, and goals” (Sawyer & Tyworth

2006, p.54). Other cognate terms such as 'domestication' (Haddon 2004; Haddon 2006; Silverstone & Haddon 1996) or 'appropriation' (Bar et al. 2007; DeSanctis & Poole 1994) also recognise the agency of people when interacting with media and ICTs.

Orientations

Beyond the general aim of understanding the articulation and evolution of socio-technical systems, there are three distinct but often overlapping perspectives that have informed the Social Informatics research agenda, namely the so-called *analytical*, *critical* and *normative* orientations (Kling et al. 2005). The analytical orientation refers to those studies that are concerned with the development of concepts and theories, usually seeking to "contribute to a deeper understanding of how the evolution of ICTs' uses in a particular setting can be generalized to other systems and other settings" (Lamb & Sawyer 2005, p.13).

The critical orientation entails problematizing the often taken-for-granted assumptions and beliefs of those who are in charge of commissioning, designing, implementing or managing ICTs (Sawyer & Eschenfelder 2005; Kling et al. 2005). Likewise, adopting a critical perspective means examining not only ideal or routine operations, but also 'failure modes' and service losses (Sawyer & Rosenbaum 2000).

The normative orientation is typical of studies that are explicitly aimed at informing the work of professionals and policy-makers involved in the design, implementation and/or regulation of ICTs, although it may be regarded as an overall aspiration of Social Informatics research. By taking a normative perspective Social Informatics researchers generate recommendations based on

empirical evidence and expand the repertoire of alternatives available to practitioners.

Common findings

A considerable number of systematic, in-depth, empirically grounded studies conducted over the last three decades have corroborated the main assumptions of the Social Informatics approach while contributing to the development of a cumulative body of knowledge that comprises a number of findings consistently discovered and re-discovered over time (Lamb & Sawyer 2005; Sawyer 2005; Sawyer & Tapia 2007; Sawyer & Tyworth 2006). For instance, Sawyer & Eschenfelder (2005) highlight three common conclusions emerging from Social Informatics literature: 1) that the use of ICTs results in diverse and even paradoxical consequences; 2) that ICTs affect thought and behaviour in ways that are advantageous to some and detrimental to others, so they are not exempt from moral and ethical implications; and 3) that social and institutional contexts shape the use and design of ICTs and vice-versa.

Kling et al. (2005) list a wider set of findings and organise them around three main axes, namely the social, the technical and the institutional aspects of socio-technical systems:

Social Nature of ICTs

- ICTs are interpreted and used in different ways by different people
- ICTs enable and constrain social actions and social relationships
- ICTs provide a means to alter existing control structures
- ICTs can lead to negative consequences for some stakeholders

Technical Nature of ICTs

- ICTs have both communicative and computational roles
- ICTs have temporal and spatial consequences
- ICTs rarely cause social transformations
- ICTs are not magic bullets: they do not solve things by themselves

The Institutional Nature of ICTs

- ICTs social and technical consequences are embedded in institutional contexts

- ICTs often have important political consequences
(Kling et al. 2005, p.16)

Given that systematic empirical studies of the design, implementation, configuration and use of ICTs generate those findings so commonly, Sawyer and Tyworth hold that such conclusions do not constitute new insights on its own any more, even though they are still worth being reported. Further, these authors suggest that the advancement of the Social Informatics programme should be pursued by both:

the constant presentation of these common findings and, more importantly, the additional detailing that reflects how these common findings are suppressed or magnified through particular actions, events or arrangements, the temporal sequencing of engagements, and the contextual differences (and measures) between better and worse computerization efforts. (Sawyer & Tyworth 2006, p.52)

Some of the assumptions, findings and conclusions populating the Social Informatics literature may seem now like common sense or self-evident. However, this fails to give a true impression of the difficulties that researchers working under this paradigm have often faced (Sawyer & Tapia 2007), especially when trying to gain academic or economic support for their studies, to influence policy-making agendas or to counterbalance the usually simplistic views of ICTs' effects present in the mass media and popular culture.

3.2.2 Looking at ICTs through a 'practice lens'

An increasingly wide and heterogeneous range of scholars have now turned their attention to 'practices' as the actual locus of the social, approaching them as the core units of analysis in their theory-building efforts (Corradi et al. 2010; Reckwitz 2002; Schatzki et al. 2001). According to Postill (2010) it is possible to identify a first wave of practice theorists – formed by thinkers such as Bourdieu, Foucault, Giddens and de Certeau – that have been followed by a second generation of scholars (e.g. Reckwitz, Schatzki, Wardi) who are now refining and

expanding the body of social and cultural theory revolving around the notion of practices.

As one may well imagine, practice theory is anything but a coherent and well-defined grand theory. In contrast, it is a rather varied array of perspectives and theoretical constructs articulated around the concept of practice. For instance, Corradi et al. (2010) used the metaphor of a “bandwagon of practice-based studies” in order to stress the commonalities and differences across seven labels relevant to the notion of practice(s) that have become influential just in the field of organisational studies over the last decades.

Whereas each approach and author seem to understand the notion of practice in different ways and may make emphasis on some specific aspects, “[m]ost thinkers who theorize practices conceive of them, minimally, as arrays of activity” (Schatzki 2001, p.11). Thus, ‘practices’ can be understood as complex constellations of routinized activity of behaviour.

Reckwitz provides an extended definition of the concept that encompasses most of the key elements and dimensions that are present in the work of such theorists. According to this author, a practice is:

[...] a routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge. A practice – a way of cooking, of consuming, of working, of investigating, of taking care of oneself or of others, etc. – forms so to speak a ‘block’ whose existence necessarily depends on the existence and specific interconnectedness of these elements, and which cannot be reduced to any one of these single elements. (Reckwitz 2002, pp.249–50)

The main appeal of practice theories as a whole from a sociological perspective is that they situate human action within a wider social fabric, which

shapes behaviour, while recognising the agency of actors and leaving room to contingency (Cox 2012).

A wide range of practices associated with different spheres of life in contemporary societies involve dealing with digital media, whether they are a central or a rather ancillary element to action. Such ICT-based practices have become the main focus of analysis for researchers working in the fields of Media Studies (Bräuchler & Postill 2010; Couldry 2004; Roig Telo 2013) and Information Science (Cox 2012; Orlikowski 2000; Orlikowski et al. 1995). With regard to Social Informatics research, the adaptation of structuration theory (Giddens 1979; 1984) to the realm of socio-technical studies of ICTs in organisations (Orlikowski 1992; 2000; Feldman & Orlikowski 2011) has been particularly fruitful.

Practices are core to Giddens's theory of structuration, as they are the point of convergence between agency and social structures. As he notes, the basic tenet of the theory is that "the structural properties of social systems are both the medium and the outcome of the practices they recursively organize" (Giddens 1984, p.25). In this regard, he draws an analogy between language and social structures (Giddens 1979). As a community of speakers' abstract property, language enables particular and situated acts of speech while being in turn shaped by such acts. In a similar vein, the structure of social systems informs human activity while being constantly redefined by such activity (i.e. practices). Therefore, in structuration theory both individuals' agency and historical trends are equally important when explaining social action. As Giddens notes, "every process of action is a production of something new, a fresh act; but at the same time all actions exist in continuity with the past, which supplies the means of its initiations" (Giddens 1979, p.70).

The development of a structurational view of ICTs dates back to the early 90s (Orlikowski 1992; DeSanctis & Poole 1994), when it was devised as an alternative to the dominant theories of information systems within organisational settings at that time. On the one hand, technologies were often approached from a rather deterministic perspective, attributing to them the capacity to generate direct and predictable effects on social order and human behaviour. On the other hand, theories based on the logic of strategic design overrated the capacity of designers and managers to optimise technologies and their use.

In contrast, drawing on Giddens' notion of duality, Orlikowski (1992) outlined a structural model of technology that saw ICTs as something that is socially constructed by human action and tends to become reified and institutionalised by recursive practices, operating as a structural property (i.e. sets of rules and resources) of social groups while still remaining open to further transformations fuelled by human agency. As noted by Rosenbaum (2009), the idea of duality in relation to ICTs soon became a key characteristic of Social Informatics research.

Subsequently, Orlikowsky (2000) refined the structurational view on technology and took the notion of technologies-in-practice as the centrepiece of her analytical framework, advocating for the adoption of a 'practice lens' approach. According to the first structurational models of ICTs, artefacts embody a set of structures that were intentionally built-in by designers and are eventually appropriated by people at the time of use. Although the idea of appropriation implies certain levels of flexibility with regard to the way technologies are interpreted and used, the notion of 'embodied structures' provided a view of technology that was too static. In other words, it failed to provide a fully

comprehensive account for change in relation to technologies and their use, especially taking into account the highly dynamic and configurable nature of ICTs.

In order to overcome such limitations Orlikowski proposed the idea of emergent structures, rejecting the idea that structures can have a material existence and, thus, bringing structurational views on technology even closer to the original postulates of Giddens (1989), who sees structures as something that cannot be divorced from human action. The process of structuration only takes place through practice, that is, while humans interact with specific artefacts and mobilise certain properties, both material and symbolic, of such technologies. Therefore, a practice lens denies the existence of embodied structures, focusing instead on “what structures emerge as people interact recurrently with whatever properties of the technology are at hand, whether these were built in, added on, modified, or invented on the fly” (Orlikowski 2000, p.407)

What follows is that the use of technology should not be conceptualised as an appropriation of immanent structures, but as a process of *enactment* of structures that can only emerge out of the recursive interaction between humans and technology. As Feldman and Orlikowski note:

It is thus not technologies per se, nor how they may be used in general that matter, but the specific technologies in practice (enacted technology structures) that are recurrently produced in everyday action that are consequential for the shaping of organizational outcomes. (Feldman & Orlikowski 2011, p.1274)

There are many synergies between Social Informatics and the practice approach. As noted by Cox (2014), the findings of the former are very much in line with the sensibilities of the latter, while both bodies of knowledge “share a sense of the gap between plans and expectations for the use of ICTs and the post-implementation reality.”

Furthermore, researchers adopting a focus on ICT-based practices are particularly well positioned to advance the theoretical and analytical orientations of Social Informatics. According to Sawyer and Tyworth (2005), it may strengthen the conceptual and empirical contributions deriving from Social Informatics accounts of the design, use, configuration and social implications of ICTs. Further, a focus on practice enables the development of strong ‘theoretical generalizations’ that, in spite of being historically and contextually grounded, can shed light on other situations, being able to offer both explanations and guidance for action (Feldman & Orlikowski 2011).

3.3 Theories of ICTs and education

3.3.1 ICTs and change in the HE sector

Much of the discussion on the on-going transformation of the higher education sector is based on purely conceptual exercises that characterise ‘the University’ as a largely uniform type of organisation, minimising variance across settings and depicting an overall scenario of universal, inevitable and homogenising change (Tuunainen 2005; Välimaa & Hoffman 2007). Such ‘unsociological’ accounts tend to assert that universities are undergoing a radical transformation, assuming that “new ideals almost instantly lead to the introduction of new organizational structures and changed behaviour by organization members so as to represent the ideals adequately” (Bleiklie & Kogan 2007, p.482).

An illustration of narratives articulated around the idea of a deep contrast between the past and the present – or, for that matter, the present and the future – may be found in theoretical formulations announcing the emergence of a new mode of knowledge production, (Gibbons et al. 2002); a redefinition of the

interaction between university, industry and government (Viale & Etzkowitz 2010); or the decline of the modern (i.e. national) university (Readings 1999).

As denounced by Robins and Webster (2002), diagnoses and forecasts about the state of the higher education arena have often suffered from a marked technological bias, as they tend to depict shifts as the direct outcome or consequence of a technology-led revolution that will sooner or later result in the emergence of a radically new form of university. On the one hand, the so-called 'digital revolution' is seen to be rendering higher education institutions obsolete, at least as we know them. On the other hand, ICTs are trumpeted as the solution that can enable universities to adapt to the new reality.

Moreover, ICTs enthusiasts among policy-makers, scholars and journalists have seen in technology an agent of change in its own, capable of increasing access to educational opportunities at a global scale. However, many of these predictions "have either failed to materialize over the last decade or have only been realized in limited and piecemeal ways" (Altbach et al. 2009, p.137), contradicting the totalising views of conceptual formulations.

Indeed, the overall impact of ICTs on pedagogical practices and approaches at universities have been at best moderate (Cuban 2001; Selwyn 2007). More generally, it should be borne in mind that there are huge differences between universities with regard to their needs and attitudes towards ICTs, depending to a considerable extent on whether they are elite research universities, mass-oriented universities, distance education providers, corporate universities, etc. (Guri-Rozenblit 2009).

3.3.2 Research on ICTs for learning and education

The study of the “intersection of education, teaching, and learning with information and communication technologies” (Friesen 2009b, p.4) has attracted a great deal of attention from researchers in different disciplines and is even regarded as the specific focus of a field of study on its own – whether it is referred as research on ‘educational technology,’ ‘e-learning,’ ‘networked learning,’ ‘digital media and learning,’ ‘online learning,’ ‘computer-assisted learning,’ ‘technology-enhanced learning’ or any other cognate terms. However, ICTs have been largely under-theorised in this field (Oliver 2013). Moreover, while many studies have examined the pedagogical implications of technology and its impact on learning processes, far less attention has been paid to the larger organisational contexts and social ‘milieu’ in which the educational use of ICTs is embedded (Haythornthwaite 2006; Selwyn 2010).

Technology-centred accounts of change in the higher education sector usually fail to frame shifts in relation to the wider political, economic, cultural and institutional context, as well as to put them into historical perspective. In this regard, they dismiss the fact that forces operating at a local, regional and national level may well modulate the effects of global trends, leading to a rather diverse range of scenarios that may even take the form of conflicting outcomes (Altbach et al. 2009).

Generally speaking, there seems to be a stark contrast between the high number of studies concerned with educational technologies at large and the overall lack of empirically valid evidence backing many claims. To put it bluntly, it “has grown into a notoriously sloppy area of scholarship – brimming over with

lazily executed ‘investigations’ and standalone case studies, while also tolerating some highly questionable thinking” (Selwyn 2012, p.213).

The most common flaw among studies in this field is that they are too often based on fallacious assumptions and beliefs about the disruptive power of ICTs within educational settings and beyond (see for example Bradwell 2009; Collins & Halverson 2009; Christensen 2011). Certain statements, such as “Who needs a university when we have Google? All the world’s digital knowledge is available at a search” (Jarvis 2008, p.210), might make the reader wonder where is the line between legitimate scholarly efforts – which are supposed to meet certain scientific standards of rigour – and questionable examples of punditry that lack any support on solid empirical evidences.

Moreover, researchers in this field have traditionally paid a disproportionate amount of attention to the *potential* benefits of ICTs for teaching and learning while neglecting the study of actual uses, that is, of technology-in-practice (Orlikowski 2000). Thus, as noted by Selwyn (2010, p.66):

the academic study of educational technology could be accused of having worked itself into an analytic corner – well-able to discuss how educational technologies could and should be used, but less competent and confident in discussing how and why educational technologies are actually being used.

While these days “[s]ocial researchers generally reject technologically deterministic notions, questioning rational forecasts of impacts that are based on extrapolations tied to features of the technology, such as its global reach or democratic implications” (Dutton 2013, p.4), unfortunately this is not the mainstream approach among those looking at the role of ICTs in teaching and learning. On the contrary, just like many policy-makers and technology vendors (Robins & Webster 1989; Cuban 2001), scholars have often seen ICTs as tools with

intrinsic capacities (i.e. affordances) that may have a direct impact on teaching-learning processes, disregarding the specificities of contextual factors and the agency of social actors.

In this regard, a significant amount of research in this area takes for granted that technology is here to enhance teaching-learning processes, inevitably changing the educational landscape at a global scale. Consequently, some authors have expressed their worries about the pervasiveness of technologically deterministic perspectives in this field (Friesen 2008; Selwyn 2010; Oliver 2011; Kirkwood & Price 2013). For instance, the assumption that there is something fundamentally distinct in the new generations of born-digital students that tells them apart from earlier generations has surprisingly gained considerable ground, even in spite of the lack of rigorous evidence (Helsper & Eynon 2009; Jones & Shao 2011; Selwyn 2009).

Rather than being a fixed position, there are different possible levels of determinism that range from a *soft* version, where technology is seen as an external force that is modulated by human action and organisational contexts (Orlikowski 1992), to a *hard* version that minimises human agency. According to Oliver (2011), there are clear examples of this extreme version of technological determinism in the field of research of learning and ICTs, as illustrated for instance by the work of Prensky (2001), who sees in technology a powerful force that is shaping the structure of youngsters' brains, leading to a major generational shift in cognition and learning. Rather than being an exception, Friesen considers this type of determinism as commonplace in this field, especially adopting the form of claims that overrate the potential of ICTs for improving teaching and learning:

The understanding of technological change implied in a great deal of e-learning research would fit well under what scholars have called "hard" rather than "soft" determinism, and also would fit under "optimistic" rather than "pessimistic" determinism [...] Technology is seen as being capable of acting on its own to produce significant social and educational transformation. What makes this determinism optimistic is that the "positive" aspects of this technical change are generally emphasized over "negative" ones. For example, faculty members who do not adopt technologies are seen as "laggards," as refusing the obviously "positive" potential of technology, rather than as being the last or wise few to resist its "negative" or destructive consequences. (Friesen 2008, p.12)

With regard to the higher education arena in particular, according to Guri-Rosenblitz (2009) there are six erroneous assumptions underlying the main predictions about the 'sweeping' effects of ICT: 1) that the physical (campus-based) nature of universities is a barrier to be overcome; 2) that there is a pressing need for universities to increase their number of students; 3) that the convenience of ICTs is always self-evident, even though when issues that they are supposed to tackle are not clearly defined; 4) that there is a natural inclination among the new generations of students to base their learning on the use of ICTs; 5) that an increased access to information automatically leads to more opportunities for learning for all; 6) that by developing a portfolio of online programmes universities can easily increase their revenues.

Nevertheless, the idea that technology will enhance and even revolutionise education and learning processes at large is not something new or exclusive to digital and networked technologies. On the contrary, traditional mass-media such as film, radio and television were previously expected to solve all the ills of educational systems (Cuban 1986). However, both the amount and the quality of empirical evidence on the use and results of educational broadcasting are rather limited. This can be, at least partially, explained by the fact that within broadcasting organisations – even public ones like the BBC – “the line between

research and public relations has often been blurred; and there has been a marked reluctance to support independent evaluation” (Buckingham 2007, p.55).

Studies looking at more recent educational technologies have also too often lacked a desirable level of independence, especially when looking at higher education settings. This flaw may be largely attributed to an overlap between the realms of educational technology as 1) a professional field and 2) an area of scholarship (Czerniewicz 2008). Indeed, according to a systematic review of studies on interventions aimed at enhancing learning in universities by means of ICTs, most studies were conducted by academic staff who had also been involved in the design and/or implementation of the initiatives under analysis (Kirkwood & Price 2014).

Moreover, in many of those interventions technology was not approached as a means of addressing a pre-existing educational need, but as an end in itself, for instance by exploring how a given tool may be used in the classroom. As for those technology-led interventions designed in response to specific challenges (e.g. larger or more diverse groups of students), they were largely driven by deterministic expectations based on the expectation that introducing a given technology in a university setting could, by itself, enhance educational practices. These kinds of assumptions may not only limit the scope of the research questions that are being formulated, but also constrain the overall analytical depth of the field. Indeed, studies on educational technology tend to prioritise instrumental aspects over theory-building efforts (Friesen 2009b; Bennett & Oliver 2011; Davies & Eynon 2013; Oliver 2013).

Well-designed *action research* studies may offer a unique account of insider knowledge, helping to form “a bridge between practitioner understanding and the

generation of theoretical knowledge to inform action” (Somekh 2008, p.6). However, a conflict of interest might emerge when those responsible for the implementation of an initiative are also in charge of conducting research, especially if it is primarily aimed at assessing its level of success. The simultaneous adoption of the double role of practitioner and evaluator may make it difficult to follow some of the principles suggested by Selwyn (2012) with the aim of improving research on educational technologies, especially that researchers working in this field should not have anything to sell (nº1) and that they should be close, but not *too close*, to the technologies under investigation (nº 3).

Such a conflict of interests or lack of independence may also help to explain the limited amount of research devoted to understanding the contradictions between rhetoric and actual practices, as well as the circumstances behind the failure of initiatives that were aimed at fostering the uptake of ICTs within educational settings (e.g. Cuban 2001; Eynon 2008; Selwyn 2007).

3.3.3 Theorising OER

The weaknesses typical of the educational technologies area of study are also present in the sub-field of OER scholarship. In particular, the potential of ICTs as a force for social transformation – mainly by means of educational content (i.e. information) delivery – tends to be highly overestimated. Even for those who explicitly recognise that OER is not a cure for all ills, the hopes are extremely high:

OER are not a panacea for resolving all the issues in a global society or in the higher education sector. In the final analysis, OER are social advocates for cultural and ethnic dialogue; they are the capacity-building tools of a child’s imagination; they are the political voices of democracy; and they may ultimately be the genuine equalizer for social inclusion in a pluralistic, multicultural, and imperfect world. (Olcott 2012, p.289)

Only a few authors have signalled some of the emerging contradictions and negative aspects behind the OER movement (see chapter 2). In general, it is assumed that the production and release of OER is intrinsically good for education and society at large. The lack of critical views may be due to the fact the research agenda of the field is not led by any particular disciplines: “Perhaps this is because OER has no clear ‘disciplinary’ home, and it is from such a base that the most informed critiques normally originate.” (Glennie, Harley & Butcher 2012, p.6).

The hybrid nature of a field that is simultaneously shaped by practitioners, researchers and policy-makers may be also one of the factors constraining the development of critical, or at least neutral, arguments. As I noted in the previous chapter, much of the literature on OER consists of accounts conducted by people who were somehow involved in the development of the initiatives under investigation. Although the first-hand knowledge of researchers/practitioners can provide valuable insights, the lack of independence often results in fairly uncritical analyses that fail to problematize some of the key preconceptions underlying the OER movement.

Much of this literature remains at a merely descriptive level, which is leading to the development of a largely under-theorised area of scholarship: “Part of the problem is that the OCW movement is driven primarily by practitioners working in the areas of advanced technology and instructional design, sites where social and educational theorizing typically do not play a prominent role” (Rhoads et al. 2013, p.100). For instance, key notions such as ‘openness,’ ‘freedom’ and ‘self-directed learning’ are usually under-theorised in this body of literature (Knox 2013). Likewise, ‘information’ and ‘knowledge’ are often taken as the same thing, favouring a transactional understanding of education according to which

knowledge can be given and received, rather than constructed (Rhoads et al. 2013).

But beyond particular concepts, it is quite frequent to find OER studies that are not explicitly positioned within any theoretical coordinates. Focusing on works about the motives of scholars for sharing their educational materials, Cox contends that:

[...] there is a gap in the theoretical framing of research into OER. Authors have not attempted to use any theoretical frame to conceptualise and reflect on the complex reasons of why individuals are often reluctant to make their teaching materials available as OER. (Cox 2013, p.149)

In particular, socio-technical perspectives in line with the principles of the Social Informatics approach are minimal, if any, within this body of literature. Indeed, OER studies are too often based on presumptions that are at odds with the principles of Social Informatics research. By failing to problematize the equation of information with knowledge, much of the literature on OER implies that ICTs can generate and spread knowledge. On the contrary, an approach complying with the principles of Social Informatics would view ICTs as a socio-technical system that may, under some circumstances, help to reconfigure access to resources that are relevant to learning and the generation of knowledge (Dutton 2010; Dutton & Loader 2002).

Furthemore, although the notion of Open Educational Practices (OEP) is now commonplace within the body of literature on OER, the very concept of 'practice' has remained largely under-theorised. Some authors have introduced a definition of OEP in their works, but they rarely attempt to define the notion of 'practices' itself. For instance, Murphy states that:

For the purposes of this study, open educational practices will therefore be considered as policies and practices implemented by higher education institutions

that support the development, use and management of OERs, and the formal assessment and accreditation of informal learning undertaken using OERs (Murphy 2013, p.202),

This definition clearly refers to different kinds of activities revolving around OER, namely the production and subsequent social life of content, as well as relevant policy-making and recognition or certification. However, saying that OEP are practices, without defining the word ‘practices,’ can only lead us to a tautological cul-de-sac. While practice(s) theories may provide OER researchers with conceptual frameworks that could help them to move beyond that, it is surprising that both bodies of knowledge have hardly intersected so far.

For instance, to consider OEP as ‘policies’ does not seem compatible with the notion of practice as defined by Reckwitz in the context of social practices theories (see section 3.2.2). While the act of making policies may be considered a practice itself and such policies can indeed support (or deter) certain practices, policies themselves cannot be regarded as practices if we are to be accurate. Likewise, practices may be fostered, whether enacted or not, but never be implemented.

Moreover, according to Reckwitz’s definition, all human actions cannot be regarded as practices given that such concept implies always at least certain level of repetition or routine. As Corradi et al. (2010, p.278) put it, “recursiveness (or reproduction) is the feature that distinguishes practice from action.” In this regard, it is important to tell apart one-off actions involving the creation or use of OER from continuing activities that can be accurately regarded as practices. Bearing such analytical distinction in mind is key if we are to understand the extent and ways in which the provision of OCW content – or any other type of OER – is embedded into the activity of universities.

3.4 Socio-technical perspectives on educational technologies: making the case for a Social Informatics of Education and Learning

In order to overcome some of the main limitations of the approaches that have traditionally dominated the study of educational technologies, Selwyn argues that researchers should adopt a critical perspective and show “a keener interest in the social, political, economic, cultural and historical contexts within which educational technology use (and non-use) is located” (2010, p.66). In a similar vein, Oliver (2011) suggests taking a social and cultural perspective on the educational use of technology as an alternative to the essentialist and deterministic accounts prevailing in the field. More specifically, he points to four possible theoretical frameworks that may enable researchers to develop a more nuanced and context-aware understanding of technologies in use – namely Activity Theory, Communities of Practice, Actor-Network-Theory and the Social Construction of Technology.

Another alternative route may be found in the Social Informatics approach, which offers a “theoretical foundation for addressing e-learning, deriving [...] from the sociology of contemporary culture, particularly where it intersects with computing use by groups, organizations, communities, and societies” (Haythornthwaite & Andrews 2007, p.27). For instance, Social Informatics studies looking at the educational use of ICTs have focused on things such as the introduction and uptake of e-learning platforms into higher education institutions (Dutton et al. 2004); learning processes and group behaviour in electronic forums developed following an IT-supported strategy as opposed to those based on an IT-led strategy (Kling & Courtright 2003); the distress faced by graduate students enrolled in an online course (Kling & Hara 2002); and participation in a

transnational trade union e-learning initiative (Walker & Creanor 2009; Creanor & Walker 2012).

The term 'Educational Informatics' has been suggested as a way of referring to those studies that adopt the Social Informatics approach when looking at the intersection of ICTs and learning, teaching and education (Haythornthwaite 2006). However, there is little agreement about the scope and aims of such speciality. For example, Levy et al. (2003, p.299) suggests a rather broad definition.

We define the domain as: the study of the application of digital technologies and techniques to the use and communication of information in learning and education. The overarching purpose is to develop and evaluate concepts, models, theories, techniques and methodologies – including research techniques and methodologies – that are of relevance to the use of ICTs for the purposes of learning, teaching and supporting learning in diverse settings.

The problem with that definition is that it does not refer to any of the principles or assumptions characteristic of the Social Informatics approach and, therefore, it might be applied in order to identify virtually any study in the field of educational technologies. Indeed, it could be understood just as another synonym for widely used labels such as e-learning research or educational technologies studies. While the notion of a Social Informatics of Education and Learning implies adopting a well-defined theoretical stance, the above-mentioned definition of Educational Informatics only relies on the nature of the phenomena under investigation.

A narrower definition is offered by Ford (2008, p.498), who restricts the focus of Educational Informatics to the study of "the development and application of digital technologies and techniques that use pedagogical knowledge representations in order to facilitate or engage in educational resource discovery for learning." This understanding of the term involves limiting the speciality to just

some of the phenomena that are often addressed in the literature on the educational use of technology. Indeed, it limits the analysis to those information systems that are directly related to teaching-learning processes, excluding many practices and ICTs that are still relevant in educational settings.

According to Kling and Hara (2004), unlike the larger field of Social Informatics and the subfields of organisational informatics and legal informatics, X-informatics specialities such as medical informatics, bio-informatics or educational informatics tend to be defined too narrowly. Taking into account the ambiguities of the term Educational Informatics, it seems more accurate to talk about Social Informatics of Education and Learning when referring to analyses of socio-technical arrangements articulated around the use of ICT for educational purposes.

A socio-technical perspective like this one rejects the idea that ICTs will automatically enhance learning processes and accelerate the generation of new knowledge. On the contrary, it posits that the current media environment may reconfigure access to information, people, services and technologies under certain circumstances (Dutton & Loader 2002; Dutton 2005). According to this view the realisation of ICTs' potential is always tied to particular contexts of use. That is, the process of reconfiguration is:

[...] not only shaped by new technologies, but entwined with the coevolution of a variety of organizational and disciplinary structures and practices. Digital choices about using or not using these capabilities are made in separate but interrelated social processes by research assistants, project teams, coders, ethics committees, research administrators, and many others. Substantially different outcomes can result from applications of the same technology in different research contexts. (Dutton 2010, p.22)

The existence of previous dynamics and social structures is inherent to the idea of 'reconfiguration.' Indeed, it is those arrangements that are re-configured –

while technology structures are being enacted – and, thus, must be taken as an analytical point of departure, rather than the affordances of ICTs in isolation. In this regard, it is implied that the use of new ICTs always build upon pre-existing structures, which are more likely to be supplemented than substituted or displaced. Consequently, Social Informatics accounts reject metaphors that represent change in ‘the University’ as a kind of tsunami. By contrast, this approach favours a view on transformations that resembles the geological process of sedimentation, where new layers are accumulated on top of already existing ones (Bleiklie & Kogan 2007; Robins & Webster 2002).

3.4.1 The Socio-Technical Interaction Networks (STIN) framework

One of the most relevant contributions of Social Informatics at an analytical level was the development of the so-called ‘Socio-Technical Interaction Networks’ (STIN) approach, which provides an alternative to the standard models of information systems that depict ICTs as tools in isolation – disregarding the particularities of social and institutional contexts – and overestimate the role of rationality and technical efficiencies in the processes of adoption (Kling et al. 2003). Likewise, the STIN approach is a good aid in debunking well-established myths about how managers can actually devise and steer online communities of practice and the often much-hyped expectations in relation to the extent to which such groups can stimulate the sharing of knowledge and the promotion of informal learning processes (Horton et al. 2005).

STIN models help researchers to grasp the intricacies of human behaviour articulated around ICT-based settings by shedding light upon both technological systems and social factors, which are accounted for as highly enmeshed phenomena. The multidimensional nature of STINs is reflected in the definition

provided by Kling et al. (2003, p.48) in a seminal paper on Internet-based scholarly communication forums:

A Socio-Technical Interaction Network (STIN) is a network that includes people (including organizations), equipment, data, diverse resources (money, skill, status), documents and messages, legal arrangements and enforcement mechanisms, and resource flows. The elements of a STIN are heterogeneous. The network relationships between these elements include: social, economic, and political interactions.

STIN studies follow the elements included in such networks and map their relationships, sometimes even generating visual models. However, it should be borne in mind that the use of the word 'network' is mainly metaphorical, meaning that the elements may not be always linked to each other by means of actual ties that can be graphically represented. For instance, the skills of actors, the character of legal contracts and other kinds of social protocols can be hardly represented in visual models of STINs, in spite of playing a key role (Kling et al. 2003).

According to Meyer (2006) the STIN approach is neither a theory as such nor a research methodology, but it should conversely be regarded as an analytical strategy, that is, a plan of action that is oriented towards a certain goal. In particular, the aim is to generate more satisfactory understandings and plausible explanations of the interplay between the social and the technical dimensions of information systems. In order to do so the STIN strategy provides researchers with a set of heuristics that can help them to articulate their inquiry on socio-technical systems at various levels, namely urging them to:

- Identify a relevant population of system interactors
 - Identify core interactor groups
 - Identify incentives
 - Identify excluded actors and undesired interactions
 - Identify existing communication forums
 - Identify system architectural choice points
 - Identify resource flows
 - Map architectural choice points to socio-technical characteristics
- (Kling et al. 2003, p.57)

Although the overall adoption of the STIN framework has been rather limited, researchers have used it to study a varied range of situations and practices in the higher education arena, such as activity revolving around online repositories and electronic journals (Kling et al. 2003), the uptake of digital photography as a research instrument in the context of marine biology (Meyer 2007) and participation in multilingual networked learning events (Walker & Creanor 2009; Creanor & Walker 2010; 2012). As noted by Meyer (2006, p.42), it is key “not to exclude failed STINs, or even technology-implementation attempts that failed to develop any sort of sustainable network, from our analysis.”

In this thesis I examine the release of OER as embedded into complex socio-technical arrangements that are conceptualised as STINs. In other words, instead of focusing on the analysis of technical platforms and the potential activities enabled by them, I examine the manifold dynamics, processes and practices that bring these socio-technical arrangements into being as composite networks made of authors, technicians, policymakers, advocates, technical protocols, etc. (a simplified version is depicted in Fig. 4).

Figure 4 – An OCW initiative production system as a Socio-Technical Interaction Network

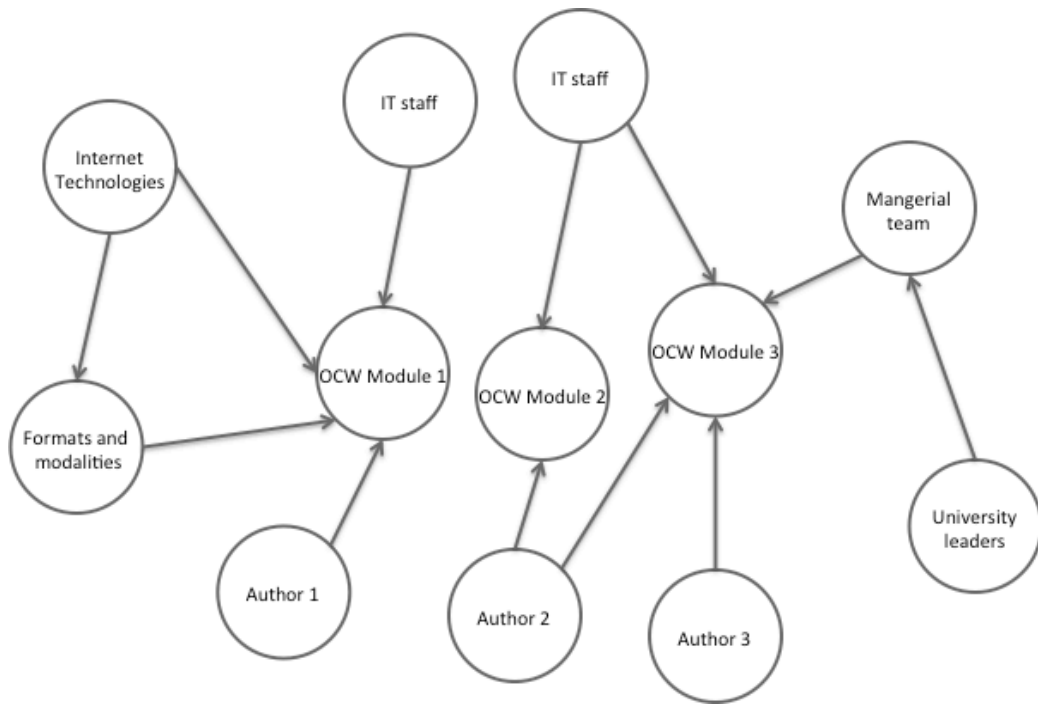


Diagram inspired by Kling et al. (2003)

As indicated by Kling et al. (2003), the STIN generated around the production of an online scholarly publication is embedded into a wider socio-technical network consisting of several stakeholders. Such network is shaped by communication, technical and reward protocols that operate in the fields and institutions in which authors are involved (see a simplified version in Fig. 5).

Figure 5 – An OCW initiative embedded in a STIN

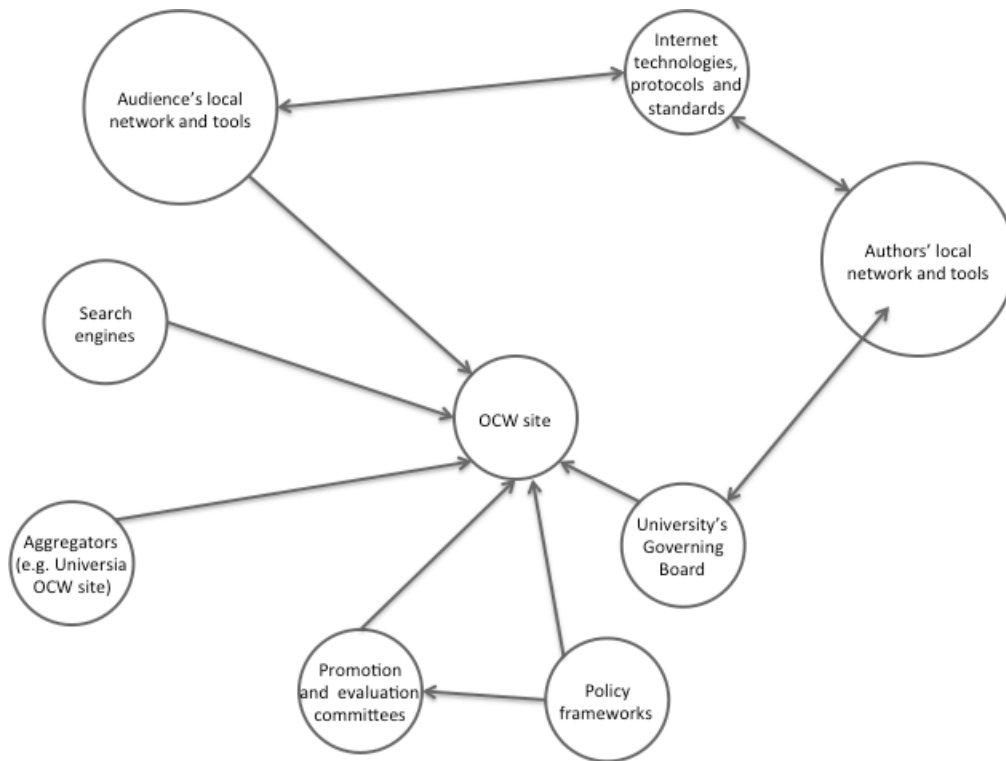


Diagram inspired by Kling et al. (2003)

Figures 4 and 5 depict various actors and technical elements that are linked forming major components of a STIN. However, the nature of these interactions is not labelled due to the complexity of ties. As noted by Kling et al. (2003), the roles played by authors and editors can vary to a considerable extent depending on particular circumstances. In a similar vein, the interactions between OCW authors and managers can be complex. For instance, while some authors may be the most interested party in getting their materials released through an OCW site, in other cases authors can be ‘chased’ by managers eager to populate the site with content generated by such authors.

The wider socio-technical networks in which OCW initiatives are embedded include actors who do not necessarily participate in either the supply or use of the content. Kling et al. underscore that, for instance, the promotion and tenure committees at researchers’ universities are part of the STINs of an e-journal in

which such authors may aim to publish their work: “They are part of an e-journal’s network because authors may decide whether or not to publish in an e-journal based on their expectations of the ways that such committees will (de)value their publications” (Kling et al. 2003, p.54). In a similar way, the policy frameworks and actual practices of evaluation committees are likely to influence the participation of faculty members in OCW initiatives and, more generally, in the release of OER.

The aim here is to provide an in-depth understanding of the organisational, personal and technological aspects underlying the conception, implementation, nurturing and evolution of OCW initiatives, acknowledging that socio-technical networks are embedded into a larger frame of overlapping cultural, political and economic contexts which are directly informed by historical trends.

3.5 Chapter summary

This chapter has introduced the theoretical framework articulating this thesis. I started with an overview of the field of study devoted to theorising the interplay between ICTs and society. More specifically, I defended the advantages of adopting the socio-technical approach characteristic of Social Informatics. This interdisciplinary field studies the design, uses and consequences of ICTs in relation to the socio-cultural contexts in which they are embedded and put into action. In this regard, it theorises the relation of ICTs and society without prioritising either the social or the technical dimensions.

I have also discussed the main assumptions and cumulative findings of Social Informatics and defended the suitability of a practice lens. After doing so I discussed the body of literature that focuses on the interplay of ICTs with learning and educational processes, identifying some of the key flaws and gaps that also affect the body of literature on OER.

In the last section I have called for the need of advancing a Social Informatics of learning and education. I have also presented an analytical strategy known as the Socio-Technical Interaction Networks (STIN), which is one of the main theoretical contributions of the Social Informatics approach and has guided the process of inquiry in this study. In the next section I will focus on the methodological approach and research techniques deployed in the generation and analysis of data.

4 Research methodology

4.1 Introduction

This chapter starts by positioning the thesis within a qualitative research tradition, which is often described as the interpretive or naturalistic paradigm. After discussing the epistemological, ontological and methodological implications of following such tradition, in the second section I will focus on case studies as the specific research strategy that characterised the design of the study. Likewise, I will outline the sequencing of the different stages of the study and will present the criteria used in the selection of the cases and the recruitment of participants. This section will introduce also the main features of the three sites under study.

The third section will present the set of research methods that I deployed for the generation of data (interviews, documents, online data, observation) as well as the analytical procedures. The chapter will end with a final section reflecting on ethical and quality principles guiding the study.

4.2 Overall approach to social research: Interpretive-naturalistic inquiry

Taking into account the epistemological, ontological and methodological alignments that I follow in this study, its overall approach can be regarded as 'qualitative.' I am not using the term 'qualitative' here to talk about a definite range of research methods and techniques (e.g. qualitative interviews), by contrast I am referring to a wider epistemological paradigm that is often described also as 'interpretive' or 'naturalistic' enquiry. Denzin and Lincoln have neatly summarised the specificities of the qualitative approach to the conduct of socio-cultural research:

Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasize the value-laden nature of

inquiry. They seek answers to questions that stress how social experience is created and given meaning. (Denzin & Lincoln 2011, p.8)

The qualitative approach to research is 'interpretive' in that it entails embracing what Geertz described as an intellectual effort aimed at "sorting out the structures of signification [...] and determining their social ground and import" (Geertz 2000b, p.9). In the course of qualitative inquiry the researcher deploys a repertoire of "interpretive practices" (Denzin & Lincoln 2011) which usually revolve around the idea of gaining first-hand insight into how people "make sense of their surroundings through symbols, rituals, social structures, social roles, and so forth" (Berg 2001, p.7). Qualitative research implies that several layers of meaning and interpretation will unfold throughout the process of inquiry. Ultimately, the qualitative researcher is expected to provide an interpretation of participants' interpretations. That is to say, the work of qualitative researchers entails "guessing at meanings, assessing the guesses, and drawing explanatory conclusions from the better guesses" (Geertz 2000b, p.20).

The notion of entering the field is fundamental in order to generate that kind of knowledge. In this respect, the qualitative approach is often associated with the so-called 'naturalistic inquiry,' meaning that people's experiences and socio-cultural phenomena at large are observed as they take place within their natural settings (Lincoln & Guba 1985; McKechnie 2008; Norum 2008; Tullis Owen 2008). Therefore, it requires researchers to "try to get as close as possible to the participants being studied" (Creswell 2007, p.18), so at least some sort of co-presence between researchers and participants must happen – though not always necessarily taking the form of physical "co-location," as rightly pointed out by Beaulieu (2010).

Further, in qualitative research the relationship between researchers and participants is not unidirectional, the former cannot be thought of as detached knowers and the latter as mere objects to be known. By contrast, both researchers and participants are inseparable and they mutually influence each other throughout a process of knowledge co-creation (Creswell 2007; Lincoln & Guba 1985). The generation of credible qualitative accounts ought to be deeply rooted in the perspectives and experiences of those who inhabit the social worlds under examination, but it also requires researchers to contextualise such views into a wider frame. In other words, it is paramount to combine both “experience-near” and “experience-distant” concepts (Geertz 2000a), to perform both “emic” and “etic” operations (Harris 2001, pp.32–41).

The assumption that social dynamics and culture are actively shaped by people, instead of being a pre-defined external reality, is also core to the ontological and epistemological groundings characteristic of qualitative research. In this regard, it follows the basic assumptions of ‘constructionism’ (Berger & Luckmann 1991; Costantino 2008; Hepburn 2006), which contends that reality is socially constructed: there are multiple subjective realities unfolding out of the interaction between social actors and their environments. This ontological stance may reject objectivism in varying degrees, with its most radical form denying the very existence of any external reality as such outside people’s minds. This study takes a somewhat moderate stance, since I posit that external elements exist and indeed play an important part in the construction of reality, both as an individual and a collective process.

The constructivist stance has been now widely adopted in qualitative studies of the social implications of technology, as suggested by notions such as the social

construction or social shaping of technology (Bijker 2001; Bijker & Law 1992; MacKenzie & Wajcman 1999; Williams & Edge 1996). More specifically it has been also applied to the study of ICTs and, to a lesser extent, to educational technologies.

At an epistemological level, adopting a constructionist stance entails recognising that scientific knowledge is also socially constructed and, thus, it is influenced by researchers' world-views. That is, both data and interpretations are always value-laden. After all, we researchers – as well as participants – are social actors and research itself is a social process “surrounded by assumptions, fetishes, beliefs, and values that are not simply mirror reflections of objective reality, if there is such a thing” (Luker 2008, p.31). Nevertheless, this is not to deny that some accounts and explanations can work better or be more rigorous and credible than others, but that the quality of interpretive-naturalistic research cannot be assessed in accordance with criteria or standards developed in the context of other scientific traditions in social research (e.g. positivism).

A set of criteria and protocols that match the specificities of this research paradigm may be used in order to assure the quality of procedures and conclusions (Lincoln & Guba 1985; Miles & Huberman 1994). According to Tracy, “high quality qualitative methodological research is marked by (a) worthy topic, (b) rich rigor, (c) sincerity, (d) credibility, (e) resonance, (f) significant contribution, (g) ethics, and (h) meaningful coherence” (Tracy 2010, p.839).

The first step entails making deontological values explicit, reporting potential biases actively and declaring any relevant assumptions or pre-conceptions (Creswell 2003; Creswell 2007; Richards 2009). In this regard, the so-called ‘reflexivity’ can be understood as an attitude towards social research that requires problematizing “what the researcher knows and how the researcher came to know

this” (Berg 2001, p.139). That kind of self-awareness is fundamental to scientific knowledge in general, but it is particularly relevant to qualitative research, as data creation and analysis protocols tend to be slightly standardised and, thus, are less amenable to replication and testing by others.

The combination of multiple methods and sources of evidence in a single study, a procedure usually known as ‘triangulation’ (Flick 2006), is typical in social research as a way of enhancing the validity of results. The notion of triangulation is based on topographic practices and navigation, where several viewpoints are needed to identify the exact location of a given object (Cea D’Ancona 2001).

Despite being a useful metaphor, if taken too literally it contradicts some of the main assumptions of the qualitative approach mentioned above, as it may suggest that there is one single truth to be discovered out there by researchers, rather than being constructed. In this study I exploit various research methods and sources of evidence with the aim of strengthening the credibility of findings and arriving at more robust conclusions, while at the same time recognising that “all accounts are inherently partial, situated, and contingent” (Ellingson 2009, p.22). Since my aim was to select the methods and techniques that best address the research problem at hand, it may be argued that the research design was largely shaped by pragmatism (Creswell 2007; Onwuegbuzie & Leech 2005).

Qualitative research is often associated with an inductive model of knowledge creation. Concepts and explanations primarily emerge from empirical data and field observations, in contrast to the deductive approach typical of quantitative research, which relies heavily on pre-existing categories and is largely concerned with testing hypothesis. In this regard, qualitative research tends to go “from particulars to more general perspectives, whether these perspectives are

called themes, dimensions, codes, or categories” (Creswell 2007, p.43). Inductive inquiry is probably best exemplified by ‘grounded theory,’ where concepts and categories are discovered through an exhaustive process of data coding and constant comparison (Strauss & Corbin 1991).

While social researchers following the quantitative tradition tend to talk about the process of ‘data collection,’ qualitative researchers usually assume that data is always co-created by them in collaboration with their research participants. Data sources may be gathered, but data is always actively created. As Richards notes, in qualitative research everything around a topic is potentially data, so it is the researcher who “identifies events or accounts as data by selecting and using them as evidence in an analysis” (Richards 2009, p.34). Furthermore, even the thoughts recorded by the researcher as annotations or memos ought to be considered as data in its own right. Ultimately, “what we call our data are really our own constructions of other people's constructions of what they and their compatriots are up to” (Geertz 2000a, p.9). Nevertheless, as Richards (2009) contends, a clear distinction must be made at all times between data deriving from the research participants (i.e. original data) and the reflections set down in memos by researchers (i.e. a second order type of data).

Saying that interpretive enquiry processes are fundamentally inductive means that they are above all concerned with theory building, though they also draw to a considerable extent on previous research. After all, as Geertz notes: “one does not start (or ought not) intellectually empty-handed” (Geertz 2000b, p.27). And he goes on by stressing the fact that:

Theoretical ideas are not created wholly anew in each study; as I have said, they are adopted from other, related studies, and, refined in the process, applied to new interpretive problems. If they cease being useful with respect to such problems, they

tend to stop being used and are more or less abandoned. If they continue being useful, throwing up new understandings, they are further elaborated and go on being used. (Geertz 2000b, p.27)

Previous research is usually expected to shape the questions taken as a departure point in new qualitative studies, as well as to inform the methodological designs devised in order to seek answers. The role of initial assumptions or theories in interpretive research may be thought of as “the use of scaffolding in putting up a building, where the scaffolding is removed once it has served its purpose” (Walsham 1995, p.76).

In turn, the findings that result from qualitative studies feed back into the body of knowledge they draw on. In this respect, the explanatory potential of qualitative studies can be gradually reinforced by the accumulation of research that provides similar findings across different settings and epochs. Such a cumulative dimension is core to fields like Social Informatics, which is defined by an extensive collection of case studies offering consistent findings about the use of ICTs across highly diverse social contexts (Kling et al. 2005; Sawyer & Tapia 2007; Vehovar 2006).

To sum up, the epistemological, ontological and methodological nature of this study might be encapsulated by saying that it attempts to be an example of “holistic and attentive to context, conceptually innovative, methodologically agnostic research that sees itself as socially embedded, is strongly committed to building theory in a cumulative way, and is deeply attentive to questions of power” (Luker 2008, p.3).

4.3 Research strategy and design

According to Creswell, case studies entail the examination of a “bounded system (a case) or multiple bounded systems (cases) over time, through detailed,

in-depth data collection involving multiple sources of information” (2007, p.73). Data usually emerges from “what people say, what you see them doing, what they make or produce, what documents and records show” (Gillham 2000, p.20).

This type of study is particularly appropriate when the primary goal of research is to generate profound and detailed insights into situated social phenomena, focusing on their uniqueness and complexities while having a strong emphasis on contextual factors. Case studies are frequently deployed in the fields of Social Informatics and educational research (Walsham 1995; Sawyer & Tyworth 2006; Kling et al. 2005; Davenport 2008; Tight et al. 2009; Smart 2010; Apple et al. 2010; Punch 2009).

This thesis focuses on the role of OER provision practices at three different sites, namely universities, which are embedded into a unique set of nested frameworks (i.e. European, state and regional higher education systems). More specifically, the study examines the experiences of actors that have been directly involved in the implementation, governance and/or nurturing of OCW initiatives. The experiences of actors are approached in relation to both their immediate environments (i.e. organisational, disciplinary, etc.) and the wider frameworks that are common to the three universities (i.e. same region, state, Europe). Such a contextual dimension is core to the definition of case studies, as a research strategy, offered by some authors: “A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context especially when the boundaries between phenomenon and context are not clearly evident” (Yin 2003, p.13).

When designing case studies it is paramount to seek an adequate balance between similarities and differences, while making sure that the level of analytical

depth is not compromised by the total number of cases covered in the study. In this respect, Diesing stressed the importance of pursuing controlled comparisons:

If the researcher is to learn more about a type, he has to engage in intensive, detailed investigation of examples, which means that he must limit himself to two or three examples at a time. Differences among the examples tell him more about variations within the type, while similarities tell him more about the basic pattern constituting the type. If he is interested in more general theory he must somehow broaden the range of his examples, but never so far that he can no longer examine each case in detail. (Diesing 1972, p.196)

The main source of similarity across the cases covered in this study is to do with the fact that the very notion of OCW, as a precise model of OER provision, is extremely homogeneous. That is, regardless of the actual contexts of implementation, all OCW initiatives are expected to fulfil a definite set of characteristics that are intrinsic to the definition of OCW. Furthermore, the OCW-Universia Consortium offers an extra layer of similarity, as the decision-making processes behind the launch of OCW initiatives at Spanish universities were directly influenced by Universia's advocacy role (see Chapter 5). Besides, the three OCW initiatives under investigation are situated in public universities that operate under the same regulatory frameworks. They are part of the European Higher Education Area (EHEA) and Spain's higher education system and depend on the same regional government.

In spite of those similarities, the process of implementation of the three OCW initiatives was modulated to a considerable extent by the specificities of each particular university and their own policy frameworks, strategic orientations and institutional arrangements. Likewise, there are salient differences with regard to the overall levels of participation of faculty members in each of the three OCW initiatives, the strategies devised with the aim of encouraging participation and the organisational structures and resources devoted to running such initiatives.

As suggested by Miles and Huberman (1994), making contrasts and comparisons is a key analytical tactic for drawing and verifying conclusions. In this regard, the design of this study is based on the idea that “we can understand social phenomena better when they are compared in relation to two or more meaningful contrasting cases or situations” (Bryman 2008, p.58).

Even though this case study focuses on just three universities, it aims to offer valuable insights into the extent and ways in which the provision of OCW content is embedded into the activity of universities at large and, more generally, on the development of ICT-based socio-technical arrangements within and across organisations.

As dictated by the first research question (see Chapter 1), the research design aims to shed light on the role that the provision of OER plays in the overall strategic orientation of universities. In this regard, it involves the analysis of official documentation and policy frameworks, as well as information supplied by university leaders and other decision-makers.

The second and third research questions focus on understanding the connection between the release of OER and the overall professional activity of faculty members. More specifically, these questions require looking at whether the implementation of OCW initiatives had a noticeable impact on the daily practices of scholars and their awareness of OER, as well as their professional identity. Thus, besides the sources of evidence mentioned in the previous paragraph, it was essential to draw on data generated by means of interviews with faculty members who were particularly engaged in such activity.

The selection of authors of educational resources was driven by a *purposive sampling strategy* designed in order to “establish a good correspondence between

research questions and sampling” (Bryman 2008, p.458). Therefore, I recruited faculty members who had been particularly active with regard to the release of OCW modules and, to a lesser extent, other types of OER and online educational materials.

4.3.1 Sequencing of the study

The study consisted of several consecutive phases of data generation and analysis that I started after doing a preliminary literature review. Although the phases primarily entailed the analysis of qualitative data, I also relied on quantitative techniques for the analysis of online data at some stages.

Phase 1 focused on the collection and analysis of different kinds of policy documents and online data relating to the provision of OCW content in Spain. During that phase I gained insight into the overall situation of Spain and also selected a number of key actors to be studied subsequently in more detail. While quantitative data (e.g. number of modules by university, Web mentions of key phrases, etc.) allowed me to identify key actors, a preliminary discourse and qualitative content analysis helped me to get a more nuanced understanding of the role played by OCW initiatives and, more generally, the provision of OER at Spanish universities. Drawing on these data I selected the three sites that are the focus of this case study (see next section for a discussion of the main criteria).

During the second phase, in May 2012, I conducted in-depth interviews with a number of Spanish experts on OER ($n=4$), as well as with people who were personally involved in the creation of the OCW Universia Consortium ($n=3$). I also visited the organisations in which some of such experts work and generated valuable data by means of in-situ observations. The data generated in the course of such interviews and visits informed the design of the interview guides that I used

in the following phases. Moreover, I also conducted a more detailed analysis of policy documents from the three selected sites during Phase 2.

Phase 3 (June-July 2012) involved semi-structured interviews with university leaders and managerial or technical staff at the three settings under investigation (see Table 3). Moreover, I also conducted interviews with the same typology of participants at the other universities in Region X that had also joined the Universia OCW Consortium. During this phase I also conducted in-situ observations at all these universities and collected more documentation of interest. Before the start of this phase I piloted the interview guide with decision makers at another Spanish university, which was situated in a different region. The analysis of data generated at this stage informed the development of the interview guide that I used in the following phase.

During Phase 4 (Jan-Feb and May-July 2013) I carried out semi-structured interviews with faculty members at the three selected universities. Before entering the field I refined the interview guide piloting it with two faculty members at one of the three universities, namely UNI-G. After conducting fieldwork at UNI-F I analysed the data and worked on the chapters that I submitted for evaluation as part of the confirmation of the status. After that I resumed the fieldwork at the two remaining universities.

After completing the fieldwork I carried out a comparative analysis across the three settings and also gathered a second wave of online data with the aim of gaining a longitudinal view on the evolution of the phenomenon under study over that period of time.

4.3.2 Selection criteria and presentation of the sites

The overall aim of trying to maximise “what we can learn” (Stake 1995, p.6) guided the selection of the three universities as well as the wider settings in which they are embedded (i.e. Spain and Region X). In this respect, the goal was not to “infer the findings from a sample to a population, but to engender patterns and linkages of theoretical importance” (Bryman 1989, p.144).

I decided to focus on Spain as the general setting of this study due to the high number of universities involved in the release of OCW content (see Chapter 5). Indeed, it is one of the countries with the largest number of universities affiliated with OCW Consortium. In addition, all Spanish universities involved in the provision of OCW modules are part of a regional consortium specifically aimed at institutions in Latin America, Portugal and Spain: the OCW-Universia Consortium. It is noteworthy that most of the members of that regional consortium are located in Spain.

Following the indications of Diesing (1972) I took geographical contiguity as one of the main principles of control for the comparison of cases. Therefore, in order to maximise contextual similarities, I decided to pick up OCW initiatives at universities that were part of the same Spanish region. This means that they are mutually influenced – as direct co-operators/competitors – and that they are also affected by exactly the same policy frameworks. That is, apart from operating under the same higher education system at a state and European level, they are also defined by the legislation and government actors at a regional level (see Chapter 5).

The region that I chose, anonymised here as Region X, has one of the largest higher education systems in Spain. Moreover, a considerable proportion of

universities in the region are members of the OCW-Universia Consortium. The levels of activity of the OCW initiatives launched by those universities varied to a considerable extent. While some of them had released a significant amount of modules, others had not produced the minimum amount of content required by the consortia or even launched their OCW site.

The three universities that I selected had OCW initiatives with varying levels of activity (high, moderate and low), although all of them had at least met the minimum requirement set by the Consortium. Apart from differences with regard to the level of participation of faculty members and the number of OCW courses produced at each setting, the organisational structures and policies relevant to the release of OER varied to a considerable extent. In this regard, by addressing differences within the bounded system provided by Region X, I followed a “purposeful maximal sampling” (Creswell 2007, p.75) with the aim of exploring different perspectives on the phenomenon under investigation. In doing so I was able to generate a richer account of the interplay between the OCW model of OER provision and the specificities of different institutional arrangements.

Site 1: UNI-B. An OCW initiative with low levels of participation

UNI-B is one of the biggest universities in its region and Spain. It launched its OCW initiative in 2008-09 and the number of courses available at the site is relatively low. The proportion of faculty members involved in the creation of OCW courses is quite low too. The initiative is not aligned with any wider policy framework and there are not any schemes specifically aimed at encouraging participation. Interestingly enough, it is the only case site that has offered courses on OER aimed at its faculty members. It also has an online repository that contains

open access documents, mainly research publications, although it also contains some OER that are not OCW courses.

Site 2: UNI-F. An OCW initiative with moderate levels of participation

UNI-F is a medium-sized university in Spain. It launched its OCW site in 2008 and has a moderate-low level of activity, as compared to the rest of Spanish universities. Over the last few years it has offered several economic incentives aimed at encouraging participation. However, these incentives were recently discontinued. In addition, all participants are provided with a certificate that can be used in the accreditation processes.

Site 3: UNI-G. An OCW initiative with high levels of participation

UNI-G is one of the largest universities in Spain. It was one of the first Spanish universities to join the OCW Consortium and its OCW site has been running since 2007. It is among the most active universities in Spain in regard to the release of OCW content. Unlike in the two other universities, the OCW initiative seemed to be highly integrated into UNI-G's policy frameworks. For instance, it was part of the local scheme aimed at updating pedagogical methodologies and was even mentioned in the electoral agenda of the last two vice-chancellors, as well as in other documents aimed at outlining the strategic orientation of this university. A varied range of actions and policies were implemented with the aim of fostering participation.

4.4 Research methods: data generation and analysis procedures

Case studies typically draw on multiple sources and kinds of data – qualitative, quantitative or both – which may be generated and analysed by means of a diverse range of methods and techniques. This study adopts a qualitative

approach and follows a multi-methods design (Denzin & Lincoln 2011; Miles & Huberman 1994). It involves the analysis of discourse and behaviour as embodied in a) documents of different kinds, b) the accounts provided by research participants and c) online data examined by means of diverse research methods and techniques.

Although quantitative and qualitative research methods have been traditionally depicted as antagonistic or even mutually exclusive ways of undertaking social research, the idea that combining both kinds of analysis is needed in order to address certain research problems has gained ground during the last few years (Tashakkori & Teddlie 1998; Creswell 2003; Bryman 2008, p.587–626; Creswell & Plano Clark 2011).

The fact that the research problem and questions guiding this study were formulated from an interpretive-naturalistic perspective makes qualitative procedures the most appropriate way of addressing the issues under examination. However, the selection of methods was not constrained by epistemological or ontological pre-conceptions. On the contrary, it was defined by pragmatic choices that, above all, “emphasize the importance of conducting research that best addresses the research problem” (Creswell 2007, p.23). Indeed, this study also entailed some forms of ‘quantification’ (Bryman 2008, p.598) at some stages, namely when examining online data.

4.4.1 Interviews

In-depth interviewing was the most relevant research method in this study, as it was the main basis for the generation of “thick descriptions” (Geertz 2000b) aimed at reaching theoretical saturation relevant to the research goals and questions. On the one hand, interviews were of utmost importance when tracing

OCW initiatives. On the other hand, they were the most appropriate way of gaining insight into the meaning of OER provision practices from the perspective of those who had been particularly involved in the implementation and/or development of OCW sites, whether being in charge of such process or as authors of content.

The overall lack of documentation on the origins and evolution of the OCW sites under examination required me to rely to a considerable extent on data generated in the course of my interaction with participants. Becker describes a similar scenario:

I wanted to know all the circumstances of an event, everything that was going on around it, everyone who was involved. ('All' and 'every-thing' here are hyperbolic; I wouldn't really want all that, but certainly a lot more than social scientists often do.) I wanted to know the sequences of things, how things led to another, how this didn't happen until that happened. And, further, I was sure that I didn't know all the people and events and circumstances involved in the story. I expected to keep adding to that collection, and making my understanding, my analysis, more complicated, as I learned from the people I talked to. I wanted to maximize their freedom to tell me things, especially things I hadn't thought of. (Becker 1998, p.60)

In a rather phenomenological way, the ultimate role of open-ended questions was to invite participants to reconstruct their own personal experiences in relation to the topic under study, so I could build upon and explore their responses to such questions (Seidman 1998).

Semi-structured interviewing requires researchers to develop a pre-defined set of questions or topics with the aim of guiding their conversations with participants. While this ensures that the goals of the study and the research questions can be fully addressed, the process of enquiry remains flexible enough to allow for the emergence of relevant digressions that may open up new and unanticipated avenues (Berg 2001; Bryman 2008). The interviews that I conducted with the experts at an early stage of the fieldworks were intentionally less

structured than ones that I carried out subsequently, with decision makers and faculty members.

I tailored the interview guides to the characteristics of each of type of participants, depending on the goals they could help me to pursue in relation to the overall questions driving the study. All the interviews were recorded and I fully transcribed those with informants from the three settings of the study. As for the rest of interviews with experts and informants from other universities relevant for contextual purposes, I transcribed them partially and also tagged the audio files directly. In order to facilitate the transcription I used an application called F4, which is specifically devised for that purpose (Dresing et al. 2012).

With the aim of gaining insight into the overall situation in Spain, I conducted interviews with experts in the field of OER (Phase 2). I selected those experts from people who had played a key role in the development of relevant OER initiatives in Spain, and who were members of relevant organisations in this field or had conducted research on germane topics (see Table 3). Three out of the seven interviews were conducted by means of video-conferencing systems – either via Skype or Google+ Hang Out. Experts had a high level of autonomy to define the topics addressed during the conversations, as compared to actors involved in OCW initiatives directly relevant to the case sites.

Table 3 – Interviewees per category and setting

	OER Experts	University leaders	Professional staff	OCW authors	Authors of other kinds of public online materials	Total
UNI-B	-	4	3	5	2	14
UNI-C	-	1	2	-	-	3
UNI-D	-	1	2	-	-	3
UNI-E	-	2	2	-	-	4
UNI-F	-	5	4	7	1	17
UNI-G	-	3	4	7	2	16
Other settings	7	-	-	-	-	7
Total	7	16	17	19	5	64

The second batch of interviews was conducted with university leaders and non-academic staff at the three case sites as well as other universities in Region X that are also members of the OCW consortium. The main goal was to understand the decision-making processes driving the launch of OCW sites, the extent to which such initiatives are integrated with the strategic orientation of each university, and the main factors influencing the overall level of participation. Special emphasis was on variations across those universities and the interaction of each initiative with both their local contexts and the wider environments common to all of them (i.e. regional government, state, EHEA). These interviews were conducted as part of visits to the campuses of each university.

I recruited a purposeful sample of university leaders among members of the governing teams who had been involved in the launch of OCW initiatives. These positions of responsibility were held by faculty members, usually appointed after the election of the Vice-Chancellor. I conducted interviews with people who were or had been in charge of the decision-making processes that led to the launch of OCW initiatives at their respective universities. In some cases these actors were

also in charge of overseeing their development. Since the OCW initiatives under study were launched a few years ago, in some sites it was necessary to talk to both actors that were currently holding the relevant positions and actors who had held them in the past, namely at the time when the initiatives under study were devised and launched. It is noteworthy that some of those university leaders had also participated in the creation of OCW modules.

The day-to-day running of OCW initiatives is usually the responsibility of non-academic staff: officers, technicians, librarians, support staff, etc. Although high-level decision-making is usually beyond their roles, they participate actively in the design of the workflows and processes at play in relation to the management of such initiatives. Most importantly, they tend to be the main point of contact with contributors. Depending on the administrative infrastructure available at each university, some of these tasks may be also undertaken by university leaders at low levels in the hierarchy. In some cases these offices have to liaise with external providers involved in the technical development of content.

The third group of interviewees consisted of OER authors at the three case sites (Phase 4). I conducted interviews with a purposive sample of participants at each site, who had been involved in the release of OER, mainly as OCW content. The recruitment of participants focused on faculty members that seemed to be particularly engaged in the release of OCW courses. In this regard I followed two main criteria: authors who 1) had participated in the creation of a particularly high number of OCW courses and 2) authors who had released OCW courses that contained highly elaborated content and/or could be regarded as outstanding for some reason.

The first criterion relied on online data extracted from the OCW sites, while the second was based also on a snowball sampling strategy drawing on the information provided by university leaders and/or non-academic staff, official recognitions (e.g. awards) and other indicators of impact. In addition, I tried to recruit informants from a relatively diverse range of knowledge domains or disciplines. Apart from OCW authors, I also conducted interviews with a few informants that despite being involved in the release of other types of OER had not participated in the OCW initiative of their respective universities. The purpose of those interviews was to gain insight into potential critical views from the perspective of people who were presumably sympathetic with the principles underlying the release of OER.

I conducted the interviews with authors via either video-conferencing systems (i.e. Skype and Google + Hang Out) or telephone, depending on the preferences of interviewees. As noted by O'Connor et al.:

In the disembodied interview all the subtle visual, non-verbal cues which can help to contextualise the interviewee in a face-to-face scenario are lost. This represents an immense challenge to the researcher, given that the traditional textbook guides to interviewing rely heavily on the use of visual and physical cues and pointers in order to build rapport and gain the trust of the interviewee. (O'Connor et al. 2008, p.276).

In order to compensate for such limitations I put extra effort in building rapport by means of the communications via email that took place before the interviews. Interestingly, given that the interviews were embedded into a wider flow of online interactions I found that it was easier for me to restart the communication again at any time in case I needed extra information or to clarify anything after transcribing a given interview. Indeed, in some cases I had the opportunity to arrange a follow up conversation on the fly. Moreover, since I added

many of the interviewees as Skype contacts I was able to resume communication via chat as well.

4.4.2 Documents

The legislation and policy documents defining the structure and activity of the universities under study, as well as the various higher education systems (i.e. regional, state, European) in which they are embedded, were also a very valuable source of evidence. Analysing such data was crucial in order to frame OER provision practices within the institutional arrangements of each particular university and the broader higher education arena in Spain. In this regard, looking at documents such as strategic plans, statutes or by-laws was crucial when trying to grasp the key aspects defining the strategic orientation of each organisation.

Furthermore, I also examined a diverse range of texts specifically focusing on OCW initiatives and, more generally, the creation of online educational materials and OER. Such documents included calls for participation, texts about the OCW initiatives available at their respective sites, brochures, press releases, etc. While most of these documents were available online, I reserve the term 'online data' here to talk about information that has been gathered by means of a particular type of research methods or techniques.

4.4.3 Online data

Online data is a key source of evidence on the social phenomena studied by the fields of Internet Studies (Dutton 2013; Hunsinger et al. 2010) and Social Informatics (Kling et al. 2005). Traditional social research methods as well as new procedures and tools have been widely used now with the aim of making sense of the highly diverse range of information available on the Web and, more generally the Internet (Fielding et al. 2008; Hewson et al. 2003; Rogers 2009).

Different types of online data can help us to understand the role of OER in the context of particular organisations and higher education systems at large. In this regard, this study relied on information extracted from particular OCW sites and the entire web domains of higher education institutions in Spain.

I used a Webometrics technique known as ‘web impact assessment’ (Thelwall 2009) with the aim of gaining insight into the overall level of attention paid to the notion of OER across Spanish universities. This technique involves:

counting and analyzing the URLs returned by search engines in response to queries designed to match documents or ideas. The purpose is to produce indicators of the extent to which the documents or ideas are mentioned online, either to directly assess web impact or to indirectly assess predominantly offline impact through measurement of the online component of that impact. (Thelwall 2009, p.26)

In particular, I used an online research tool known as Google Scraper (Digital Methods Initiative 2012) to assess the resonance of a number of phrases relevant to the study (e.g. phrases equivalent to OER in Spanish) in the web domains of all Spanish universities. I have discussed this technique as well as the overall value of Web mentions as a source data elsewhere (Villar-Onrubia 2014; 2013; 2012a).

The ultimate goal of OCW initiatives is to create a web site that makes available a particular type of OER. The resources and other information available at those sites (e.g. ‘about us’ pages, metadata, etc.) can be approached as key sources of data. Thus, I scraped tabular data from each of the OCW platforms at the case sites, namely the title of all the courses, the name of their authors and other relevant information (e.g. department, school, etc.). In order to do so I constructed various scripts aimed at retrieving such information by means of an application called iRobot, which is “a visual automation tool to create robot agents, or *irobots*, for Web data collection. An irobot agent is able to navigate Web sites, fill in Web forms, extract data, compute and transform data on the fly, and integrate directly

with local databases” (IrobotSoft.com 2011). Then, I explored the data by means of descriptive statistics and social network analysis techniques. These quantitative procedures were crucial for the selection of the sites and the interviewees.

4.4.4 Observation

The interviews with university leaders and non-academic staff involved visits to the campuses of all relevant universities in Region X. In the course of such visits I had the opportunity to observe the state of facilities, the type of technological equipment surrounding participants and other details about their work environments. Such observations proved to be a relevant source of data about the actual role of interviewees and their organisational units. For instance, the relative size of offices, the way they were furnished and whether participants had their own individual offices or had to share the space with other colleagues were key aspects in order to understand their position within the hierarchical structure of their universities. During and immediately after the visits I recorded key observations into memos.

In addition, at one of the sites I had the chance to attend an internal meeting in which faculty members of a particular school discussed the pros and cons of making teaching materials available to the public. This unanticipated opportunity was extremely helpful and provided me with valuable information about the institutional arrangements of that university, namely UNI-G.

4.4.5 Data analysis

I used a Computer-Assisted Qualitative Data Analysis (CAQDAS) software package called NVivo (v. 10) to manage and examine most of the data from the study – transcribed interviews, documents, web pages, memos. Manual coding

operations helped me in the processes of “data reduction, organisation and the creation of searching aids, and analysis” (Cope 2005, p.225).

The first step, before the fieldwork, involved examining a series of documents in order to identify key information. When analysing these documents I drew on a series of codes representing key questions that I had previously identified while reviewing the literature. In addition, new codes emerged in an inductive way after identifying other issues relevant to the settings under study.

After transcribing the interviews I applied a first layer of “descriptive coding” (Richards 2009), using codes and other types of metadata to classify participants in accordance with relevant attributes (e.g. gender, role, nº of OCW courses, level of seniority, etc.). This allowed me to refine queries in the following stages and facilitated the exploration of potential relationships between different dimensions of the study.

Later on I used a coding scheme directly informed by the scripts that I had previously used during the fieldwork stage in order to guide semi-structured interviews. In this regard, it entailed “labelling text according to its subject” (Richards 2009). After that, while perusing the transcripts I engaged in a more analytical process, handling the texts interpretively and focusing on core themes, emerging leitmotifs and causal links (Miles & Huberman 1994).

As already noted, I also deployed certain forms of ‘quantification’ in the context of qualitative research (Bryman 2008, p.598). The online impact analyses described before are by definition based on quantifying operations, as they rely on web mentions as data (Villar-Onrubia 2014). But apart from this I also used other forms of quantitative data in the analysis of online data.

Facts like the total number of OCW modules released by each university or department and the number works authored by each OCW contributor were crucial when assessing levels of engagement in the provision of OER. Moreover, by extracting this data from the sites as tabular information I was able to adopt a relational perspective and find out the total number of contributions per author. Further, I was able to uncover networks of collaboration among authors.

Moreover, by calculating *betweenness* values I was able to identify authors who played a particularly relevant role in bridging several cliques of collaborators. We can think of “a node as having high betweenness if it lies on paths (and particularly short paths) between many pairs of other nodes” (Easley 2010, p.342). Thus, by looking at authors as nodes within co-authorship networks I could gain insight into who were those potentially acting as champions of OCW. I used an application known as the Network Workbench Tool (Cyberinfrastructure for Network Science Center 2009) with the aim of processing such data.

Although the analysis of interviews and documents relied primarily on qualitative analysis procedures, I also used word frequencies generated by means of NVivo in order to identify key terms.

4.5 Doing high quality and ethical research

The study has been informed by quality criteria devised taking into account the specificities of qualitative research (Tracy 2010). This will be reflected in the coming chapters, but the main principles have been to ensure rigor and credibility by grounding my interpretive practices on multiple sources of evidence, establishing good rapport with my informants, returning to them for further clarifications and/or details where needed, and complementing their accounts with my own thoughts, while keeping a clear line between their perspectives and

my observations. In addition, by adopting a reflexive approach throughout the entire process of data collection and analysis I have been able to identify potential deficiencies and act upon them along the way.

Following the University of Oxford's ethics regulations, the study has been "conducted in a way which respects the dignity, rights, and welfare of participants, which minimises risk to participants, researchers, and third parties, and the object of which is public benefit" (University of Oxford n.d.). Moreover, I have followed recommendations on ethical decision-making specific to Internet research (Ess & AOIR Ethics Working Committee 2002; Eynon et al. 2008; Markham & Buchanan 2012). Participants were provided with precise information about the purposes of the study and how data was going to be used, including details about confidentiality and the dissemination of outputs. Informed consent was sought from all participants via a paper form. In order to ensure confidentiality and protect informants, their identities and the sites have been anonymised.

4.6 Chapter summary

In this chapter I have presented the overall approach underpinning this study, the so-called interpretive or naturalistic paradigm of inquiry. I have also explained the research strategy and research design that I followed. After introducing the cases under investigation and justifying the selection of the three sites, I discussed the set of methods and procedures that I deployed in order to generate and analyse relevant data – qualitative interviews, document analysis, online data, observation, etc. Last, but not least, I included a brief section that reflects on the measures adopted to ensure that the research is of high quality and ethical. The next chapter will provide an overview of the context in which the three cases under study are embedded.

5 Setting the scene. The Higher Education system and OER initiatives in Spain

5.1 Introduction

This chapter is devoted to introducing the main features of Spain's higher education system and the provision of OER in that country. The first section will provide an overview of the structure and main trends of the system, as well as the governance, key actors and regulatory frameworks. More specifically, the first section offers detailed information on how the performance of scholars is assessed and rewarded, identifying the key scholarly practices that determine the career development of academics.

The second section of the chapter will offer an overview of the overall level of attention paid to OER across Spanish universities, as indicated by a Web impact assessment. Moreover, I will discuss the role of Universia and the Santander Group as key actors in the proliferation of OCW initiatives in Spain, as well as the varying levels of engagement in the provision of OCW content across universities.

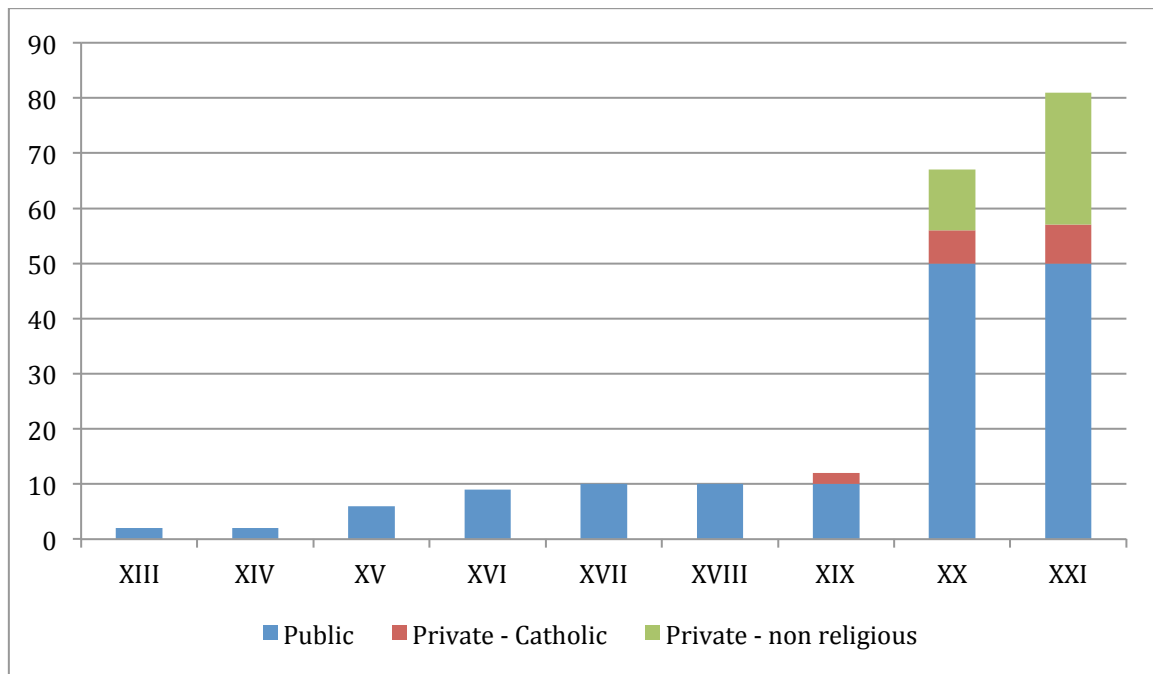
5.2 Structure, functioning and role of Spain's HE sector

5.2.1 Composition and main trends

Spain's higher education sector consists of 82 universities, 80 of which are currently offering undergraduate and/or graduate academic programmes. The oldest universities in Spain were founded in the 13th, 15th and 16th centuries: Salamanca, Valladolid, Barcelona, Santiago, Complutense, Sevilla, Granada and Zaragoza. However, the vast majority of universities have been established over the last 100 years, with special intensity after the early 1990s. Although most universities are public ($n=50$), private universities have mushroomed over the last two decades – going from 5 in 1990 to 32 in 2013 (see Fig. 6). There are six

universities exclusively devoted to distance education, most of which were established in the last decade.

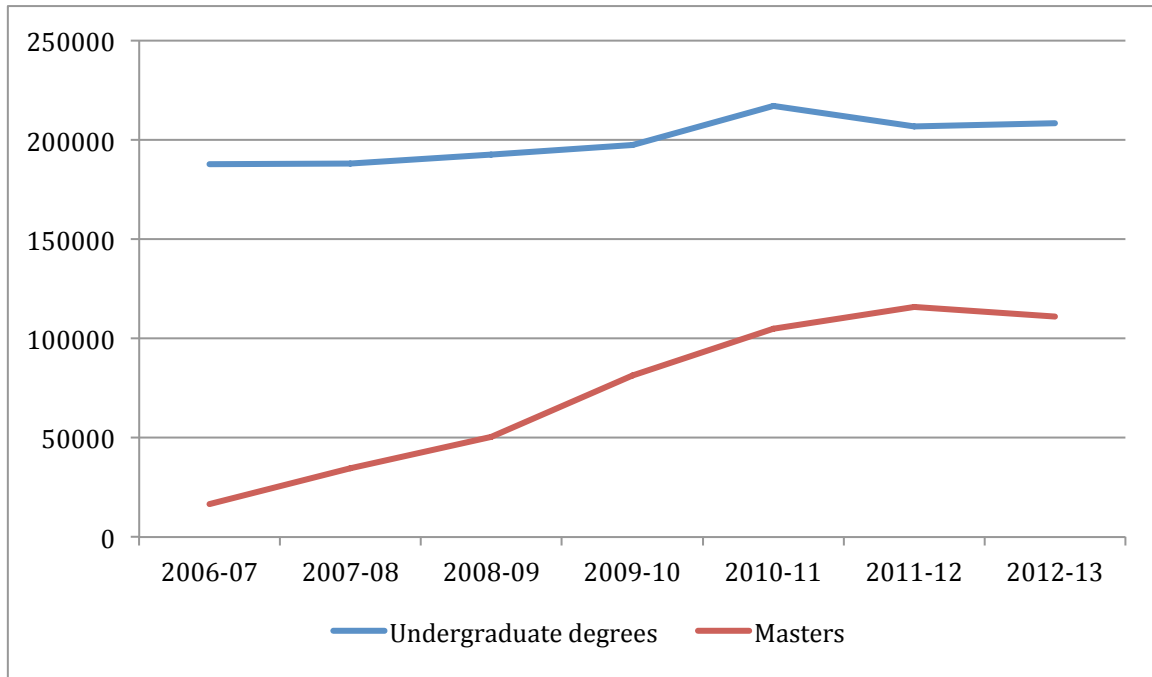
Figure 6 – Number of Spanish universities per century and by type.



Own elaboration based on data from Wikipedia and Universidad.es. It only counts universities that are currently active.

There are about 1,500,000 students enrolled in undergraduate and masters degrees at Spanish universities (Government of Spain 2013a). As shown in Figure 7, the number of students has increased steadily over the last years, especially in the case of master degrees. It is worth mentioning that this type of graduate studies has gained relevance due to the process of adaptation to the European Higher Education Area. Until then the level of specialization of masters was covered by graduate programmes, which usually had a duration of five years.

Figure 7 – Students in undergraduate and master degrees

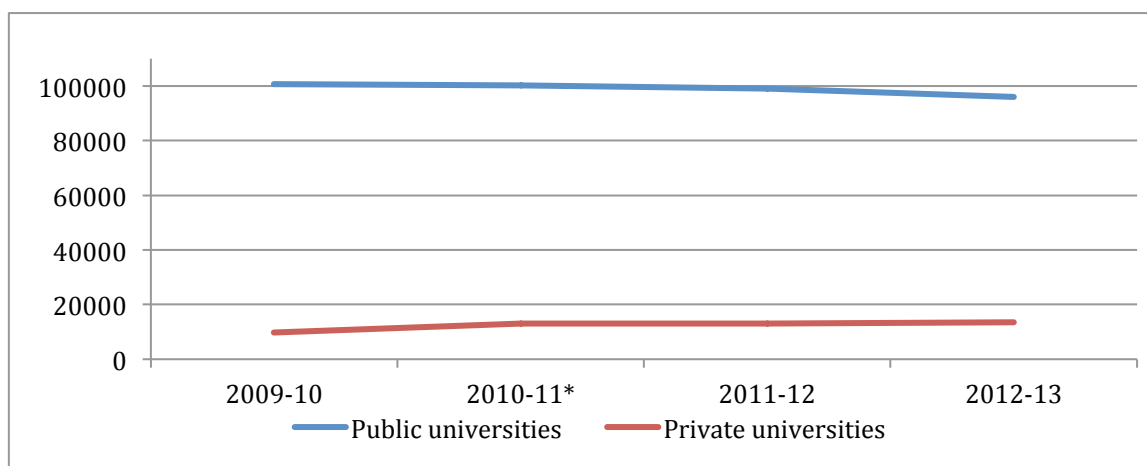


Own elaboration based on data from (Spain's Ministry of Education, Culture and Sport (2013a).

A key feature of the higher education arena in Spain is that the mobility of students across regions and provinces is very limited. Indeed, more than 85% of students are enrolled at universities that are in the same regions they originally come from (Michavila 2013).

In contrast with the growing number of students, the number of faculty members has recently started to decline after decades of growth (Michavila 2013). In the academic year 2012-13 there were about 115,000 academics at Spanish universities. The vast majority were working at public universities, while about 14,000 scholars were employed by private institutions. Due to limitations in overhead expenses imposed on all public administrations by the austerity measures implemented at a state level, the number of academics at public universities is declining. However, the number of faculty members working at private universities is growing rapidly, mainly due to the creation of new universities over the last few years (see Fig. 8).

Figure 8 – Number of faculty members at public and private universities



Own elaboration based on data from (Spain's Ministry of Education, Culture and Sport (2013a). Data on the Universidad de Navarra (private) was not available in the academic year 2010-11.

The overall population of academics at Spanish universities is rather mature and is now aging at a particularly rapid pace due to the reduced number of people who are being hired to replace those who go into retirement (Michavila 2013). Less than 25% of academics are under 40, most of whom work under a contract. A majority of civil service staff are above 50 and about 40% of professors are 60 or older (Government of Spain 2013a).

As for gender inequalities, less than 40% of academics at Spanish universities are women. The gender gap is particularly pronounced among senior scholars. Indeed, the higher the level of seniority the fewer the proportion of women. For instance, just about 20% of professors are females.

The vast majority of faculty members at Spanish universities come from Spain (97.5%), while only 1.5% comes from another country of the European Union and 0.5% from Latin America (Government of Spain 2013a). If we look at the distribution across knowledge domains, Arts & Humanities disciplines show the highest proportion of foreign scholars (4.5%), perhaps due to the specific needs of modern languages and philology degrees.

Furthermore, the mobility of faculty members across Spanish universities is also very limited. According to an empirical study focusing on three particular domains – Biology and Biomedical Sciences, Exact and Natural Sciences, and Engineering and Technological Sciences – there is a significant level of inbreeding characterised by an internal labour market in which academics position themselves before completing the PhD.

There is a very limited degree of early post-doctoral mobility across universities. 69.0% of the PhDs did not change their employer after getting their PhD. A further indicator is that 45.8% of the surveyed population stayed at the same university for their whole career trajectory (bachelor's degree, PhD and permanent position). Six out of ten individuals (60.8%) got a permanent position in a department located in the same university that awarded their PhD diploma. (Sanz-Menéndez et al. 2013).

Unlike other academic job markets such as the US, in Spain's higher education sector mobility has a negative impact on the development of scholars' careers. In particular, it is a strong predictor of delays in the time that it takes for a researcher to get a permanent position (Cruz-Castro & Sanz-Menéndez 2010; Sanz-Menéndez et al. 2013).

These trends are key to understanding many of the dynamics and processes that take place at Spanish universities. Most notably, they offer insights into how the professional career of academics may unfold. It is important to consider such trends in relation to the provision of OER because, just like any other professional activity in academia (e.g. teaching, conducting research, publishing, etc.), it can only be fully grasped by taking into account the role that it may play in the development of academic careers.

5.2.2 Governance structures and regulatory frameworks

Spanish universities operate under a complex body of laws that are passed at several levels: state, regions and institutions. According to Santiago et al. (2009),

the current governance arrangements are indeed putting the higher education sector at a risk of being over-regulated. The main legislative framework is defined at a state level, primarily by the Universities Organic Law – LOU (Government of Spain 2001; subsequently amended in Government of Spain 2007). In addition, a separate law defines the policy framework aimed at fostering science, technology and innovation (Government of Spain 2011a), while access to higher education is regulated by the Organic Law for the Improvement of Quality in Education (Government of Spain 2013b). Moreover, several royal decrees focus on particular areas and processes within this sector (e.g. Government of Spain 2012).

Although such a detailed legal framework operates at a state level, the governance of Spain's higher education system is decentralised to a considerable extent across all the regional governments of its 17 autonomous communities. Regional governments have their own departments (i.e. regional ministries) responsible for higher education and some regions have also passed their own university laws, creating a complex structure of regulatory bodies. Each regional government is also responsible for the finance system of public universities in their territory. Regions are able to create new public universities by means of legislation approved by their own parliaments.

The amendment of the LOU in 2007 (Government of Spain 2007) introduced two bodies charged with the task of coordinating the higher education system at a national level. The General Conference on University Policy³⁴ (GCUP) is the body responsible for coordinating higher education policies and overseeing the sector. It gathers the heads of higher education of all regions and the Ministry's head of

³⁴ Conferencia General de Política Universitaria.

higher education, who meet twice a year. The Council of Universities³⁵ (CU) is in charge of academic coordination and may offer advice or make suggestions to the Ministry, the GCUP or the regional governments. The Minister acts as the president of the CU, which is formed by the vice-chancellors of all Spanish universities. Five extra members are also appointed by the Ministry at each of these bodies.

All vice-chancellors, from both public and private universities, are also part of an independent body known as the Conference of Vice-Chancellors of Spanish Universities³⁶ (CRUE). Apart from the general assembly, which gathers all the vice-chancellors, there are also various thematic committees formed by pro-vice-chancellors who have responsibilities in specific domains – e.g. research, teaching, ICTs, etc.

Another key actor at a national level is the National Agency for Quality Assessment and Accreditation³⁷ – ANECA. This semi-autonomous public body is in charge of both approving and evaluating the official academic programs offered by Spanish universities. ANECA is also responsible for the evaluation of scholars at an individual level. In particular, academics must go through an accreditation process undertaken by ANECA before applying for a position at any Spanish university. According to the LOU, ANECA plays a very important role in relation to the balance between universities' autonomy and accountability.

Some of ANECA's functions might be also performed by regional agencies created by some autonomous communities, as far as they are members of the European Association for Quality Assurance in Higher Education (ENQA) and are

³⁵ Consejo de Universidades.

³⁶ Conferencia de Rectores de Universidades Españolas.

³⁷ Agencia Nacional de Evaluación de la Calidad y Acreditación.

registered at the European Quality Assurance Register for Higher Education (EQAR). Conversely, the research performance of faculty members is assessed only at a state level, namely by the National Committee for the Assessment of Research Activity³⁸ (CNEAI), which comes under the Ministry of Education, Culture and Sport.

The autonomous nature of universities is guaranteed by Spain's Constitution. According to the LOU, higher education institutions operate under the principle of academic freedom and have autonomy to manage their resources, although recent austerity measures are restricting their capacity to hire personnel (i.e. only one person may be hired to replace every 10 people going into retirement).

The LOU also establishes the main roles and units of governance and representation at public universities. Universities are led by a Vice-Chancellor (i.e. the *rector*), who is assisted by a Board of Directors consisting of various Pro-Vice-Chancellors, the Secretary General and the Manager. The most relevant bodies of governance and representation at a university level are the Social Council, the Governing Council and the Faculty Members Assembly. Likewise, schools and departments have their own councils and heads.

The LOU states that the vice-chancellor of each university must be elected among its own professors. Although all members of the community – including administrative staff and students – may participate in the election of the Vice-Chancellor, the vote of PhD faculty members account for at least 51%. The specific regulations applying to this process and the election of representatives at other local bodies are set by each university's statutes.

³⁸ Comisión Nacional Evaluadora de la Actividad Investigadora.

Universities have their own legal frameworks, usually taking the form of statutes, by-laws and mandates. It is noticeable that over the last decade many universities have also embarked on a process of strategic planning that have led them to state or revise their mission, define priorities and design actions aimed at pursuing their goals and overall vision. However, many universities have not revised their plans after the period initially covered.

Furthermore, according to Santiago et al. (2009) there is a rather limited level of differentiation across universities in Spain, mainly due to the fact that the higher education system is regulated with such a high level of precision. Moreover, these authors contend that there are very reduced levels of competition among universities at several levels – for students, faculty, funding, etc.

The majority of the students study at the universities closest to their home in the community of their original residence. The careers of academics are, for the most part, regulated at the national level [...] There is no proper market for university positions, except for contracted researchers and lecturers, within specific limits and subject to legal regulations. The financing of public universities depends principally on the resources assigned by governments and parliaments and income generated from sales of university services typically only represent a small part of the institutional budget. Finally, the prestige of public universities depends more on their tradition and the quantity and quality of their inputs than on the result of their performance. (Santiago et al. 2009, pp.64–65)

Due to the institutional arrangements that shape the activity of universities in Spain, Santiago et al. (2009) argue that the system is primarily supply-driven, producer-dominated and inward looking. All these characteristics make fairly irrelevant the maintenance of strong connections with the external environment. These authors argued that the system was starting to shift in some regards, becoming gradually closer to other higher education systems in Europe:

- From a strong centralist tradition to a decentralized structure of tertiary education within the framework of autonomous communities.
- From bureaucratic modalities of system coordination and control to a growing recognition of institutional autonomy and the role of quality assurance.

- From a purely national conception of tertiary education policy to its increasing internationalization and Europeanization.
- From inward looking institutional government modalities to modalities of governance more responsive to various stakeholders.
- From collegial and bureaucratic procedures of management institutional towards strategic planning, professionalisation of university management, and more flexible approaches to internal resource allocation as a result of the increasing scope of institutional autonomy. (Santiago et al. 2009, p.59)

However, the Spanish financial crisis which began in 2008 has paralysed and even reverted in some cases these trends of transformation over the last few years.

With regard to the allocation of economic resources to public universities, some regions have started to implement funding models that are partially based on performance and the achievement of predefined goals that are agreed between each university and the respective regional government (see for instance the case of Andalusian universities in Laurent et al. 2010).

Nevertheless, the overall structure of the higher education system offers limited opportunities for the proliferation of OER initiatives at universities. Even though a considerable number of universities were persuaded to launch their own OCW sites, there are very few motivations for investing in further developments or even the mere maintenance of the initiatives. If the level of performance with regard to a core activity like research has only very little impact on the amount of funding allocated to each university (see next section), whether they have a successful and active OCW initiative or not will have no impact at all.

5.2.3 Scholarly practices, performance evaluation and professional development in Spain's HE sector

According to the LOU, faculty members have simultaneously the *obligation* and the *right* to engage in teaching and research activities (see art. 33 and art. 40 in Government of Spain 2001). Accordingly, their professional performance is assessed and rewarded in relation to their involvement in these two dimensions of

academic life. There are three main processes aimed at assessing academics' performance, each of them undertaken by different actors – namely ANECA, CENAI and each individual university. These evaluation processes have varying levels of impact on the development of academic careers, economic incentives and the weight of teaching workload.

In order to understand the dynamics within Spain's higher education sector and the behaviour of faculty members it is important to pay attention to the different types of contracts and positions that determine their stability and professional development (see Table 4). There are two main types of academic staff working at public universities in Spain: civil servants³⁹ and faculty working under a contract,⁴⁰ either permanent or temporary. The most senior positions lie under the civil service category, which includes 'professors'⁴¹ and 'tenured lecturers.'⁴² Civil service positions are full-time and held until retirement. Within the non-civil service category there is a wider range of positions that comprises various levels of seniority, permanency and dedication. The most senior position within this category is that of 'hired lecturer,'⁴³ which offers a salary similar to tenured lecturers' and is the only type of position that entails a permanent contract among hired faculty.

Other non-civil service positions are 'post-doc lecturer,'⁴⁴ 'assistant lecturer'⁴⁵ or 'associate lecturer.'⁴⁶ There are other types of positions within both

³⁹ Funcionarios.

⁴⁰ Personal laboral.

⁴¹ Catedráticos.

⁴² Profesores titulares.

⁴³ Profesor contratado doctor.

⁴⁴ Ayudante doctor.

⁴⁵ Ayudante no doctor.

⁴⁶ Profesor asociado.

categories that have now been discontinued, meaning that even though there are still people holding such positions they cannot be offered any more. People currently holding any of those positions can either keep them or apply for some of the current positions.

Table 4 – Types of academic staff positions in Spain’s public universities

Type of position	Original title	Category	Duration	Dedication	Requirements
Professor	Catedrático	Civil service	Permanent	Full-time	PhD, Accreditation
Tenured Lecturer	Prof. Titular	Civil service	Permanent	Full-time	PhD, Accreditation
Hired Lecturer	Prof. Contratado Doctor	Non-civil service	Permanent	Full-time	PhD, Accreditation
Post-doc Lecturer	Prof. Ayudante Doctor	Non-civil service	Temporary	Full-time	PhD, Accreditation
Assistant Lecturer	Prof. Ayudante	Non-civil service	Temporary	Full-time	Doctoral candidates
Practitioner Lecturer	Prof. Asociado	Non-civil service	Temporary	Part-time	Professional expertise
Visiting Lecturer	Prof. Visitante	Non-civil service	Temporary	Full-time	Renown academic
Emeritus	Prof. Emérito	On pension	Temporary	Part-time	Renown academic

Source: Author’s elaboration based on information from Government of Spain (2001; Government of Spain 2007)

A key characteristic of the academic job market in Spain is that candidates cannot negotiate their salaries, or any other working conditions, as part of the recruitment process. That is, people holding the same type of positions have the same salaries, which are only modulated to a very small extent on the basis of performance (Santiago et al. 2009). This feature has profound implications for organisational dynamics and individuals’ behaviours.

This is important because it limits the ability of organizations or departments to bargain with the job candidates in the recruitment and selection process. What is at stake is permanence and promotion through scales; those are the main assets that departments, universities and research centers can use for the management of their human resources. Permanent positions are the main rewards. It is, therefore, a strongly regulated system, with very few market mechanisms. (Cruz-Castro & Sanz-Menéndez 2010, p.33)

Any academic wishing to apply for a position as professor, tenured lecturer, hired lecturer or post-doc lecturer must obtain the proper accreditation from ANECA beforehand. An evaluation committee at ANECA is in charge of assessing all the applications in accordance with criteria that are specific to each type of position and category. Only once the outcome of this process is positive are academics able to apply for a more senior position available at any university. Permanent academic staff at private universities must be also accredited as hired lecturers.

ANECA's evaluation guidelines set the criteria that are applied in relation to each category (ANECA 2008; ANECA 2007). Scholarly practice is broken down into several areas of activity that incorporate a relatively broad range of tasks and achievements associated with a rather precise rating system. These guidelines have the potential to influence academics' behaviour to a considerable extent – in terms of both the type of activities they engage in and their level of dedication – as far as they are interested in pursuing career development, something which is expected at least from most academics on a non-permanent position.

ANECA's guidelines prioritize two main areas of activity, namely research and teaching. Activities such as professional experience in sectors other than academia or the involvement in university management are also taken into account to a lesser degree, depending on each particular type of position. Overall, research is the most valued activity in the assessment processes of the four types of position (see Table 5).

Table 5 – Maximum number of points per area of activity and type of position that can be obtained by applicants undergoing ANECA's accreditation processes

Type of Position	Research	Teaching	Other activities
Professor	55	32	13
Tenured Lecturer	50	35	15
Hired Lecturer	60	30	10
Post-doc Lecturer	60	30	10

Source: Author's own elaboration based on data from ANECA (2008; 2007)

Within the specific range of activities that are recognized as part of teaching, most points are determined by the number of credits/hours that applicants have taught in the context of both undergraduate and graduate studies. Although the creation of educational resources is acknowledged to some extent, the value placed on it is rather low. Indeed, it is included in a sub-category that covers a wider range of activities, meaning that the maximum number of points associated with teaching may be obtained without the need of being engaged in the creation of educational resources at all. Furthermore, the most valued educational materials are those that have gone through some sort of editorial process, the gold standard being handbooks published by prestigious press companies.

As for those educational resources that “have not been edited or that have been self-edited” (ANECA 2008, p.36), which is often the case of OER, they are confined to a rather minor and broad sub-category described as “other teaching achievements” or, in relation to some positions, simply as “other achievements.” The creation of resources (e.g. lecture notes, slides, etc.) to be shared either exclusively with students – usually by means of a VLE – or with anyone – via the public Web – is only assessed within this subcategory.

Each university is also in charge of assessing the teaching activity of its own faculty members every five years. While the outcome of such assessment may lead to an economic incentive, the process is usually seen as a mere formality: “Small

fixed teaching bonuses are added after every five-year period (hence the name *quinquenios*) up to a maximum of six, but nearly all teachers get these bonuses, which are therefore in reality strongly seniority-based rather than merit-based” (Santiago et al. 2009, p.49). Thus, in general this evaluation has a relatively low influence on the behaviour of faculty members.

As for research performance, it is also assessed at a state level by the CENAI. The evaluation processes conducted by this body are only concerned with the work of civil-service staff. Professors and tenured lecturers may request an evaluation – on a voluntary basis – every six years and positive outcomes may lead to modest salary increases. Most recently, after the enactment of a new royal decree (Government of Spain 2012), the outcome of this process has also started to have a direct impact on the teaching workload of faculty members, as the number of credits per academic year that they are required to teach is partially determined in accordance with the outcome of this assessment.

While over the last few years the actors involved in regulating Spain’s higher education sector have striven to bring research to the fore of scholarly practices – mainly through the assessment mechanisms discussed above, the current level of engagement of the most senior faculty members seems to be rather limited:

[...] more than half – 57.5 % – of civil-service academic staff have just one or none *sexenio* [positive evaluation], that is, they do not have any research activity or it is almost nonexistent. When we are to consider a higher number of *sexenios*, the age must be also borne in mind. Still, just 3.7% of civil-service academic staff (1.4 % [of all faculty members]) have five (six being the maximum possible number) of *sexenios*. (Miras-Portugal & et. al 2013, p.14. Author’s own translation from the original text in Spanish)

Given that evaluation processes can determine the possibility of scholars being hired and promoted, they have a clear impact on academics’ behaviour. However, in order to understand the social dynamics and hiring practices within

Spain's higher education sector it is important to look at other institutional aspects. As noted by Cruz-Castro and Sanz-Menéndez (2010), only by taking into account certain cultural and structural characteristics of this sector it is possible to understand the prevalence of inbreeding and the maintenance of internal labour markets.

Most notably, loyalty is highly valued and rewarded by academic cultures in this context, which support the existence of "queues, or an informal order of priority in the advancement of career (in some cases based on merit and in others on the time spent at the department)" (Cruz-Castro & Sanz-Menéndez 2010, p.33). Therefore, even after being accredited by ANECA, external candidates are usually dissuaded from spending time and energy in preparing for a selection process which is unlikely to be successful for them, as departments have autonomy to determine the hiring criteria to a very specific level of detail, so job descriptions are often tailored to the qualifications and experience of internal candidates. Indeed, competition against internal candidates is in general frowned upon by departments. It is noteworthy that according to data from the empirical study conducted by Cruz-Castro and Sanz-Menéndez (2010), in about 66% of competitions for an academic position there was just one single candidate.

The minimal impact of individuals' performance on the funding system of universities and departments seems to be also one of the underlying factors that penalise mobility and favour the perpetuation of such a closed and static job market in the academic sector. Unlike research evaluation regimes such as the Research Excellence Framework (REF) in the UK, which aggregates the results of performance assessment at departmental and university levels and have a direct impact on the allocation of resources, in Spain the evaluation of research stays

primarily at the “individual level of researchers and research groups with minor developments regarding organisational and program evaluation”(Cruz-Castro & Sanz-Menéndez 2008, p.206).

Thus, allocation of funding is primarily based on criteria other than research performance (i.e. outputs). On the contrary, it relies to a significant extent on inputs, namely the number of students and faculty members (González López 2006). Under these circumstances, departments “do not need to compete for the best professors to keep going or to advance financially, because the contribution of research overheads to the funding of universities and research centers is small” (Cruz-Castro & Sanz-Menéndez 2010, p.33). That is, the main beneficiaries of good research track records are academics themselves, rather than the entities in charge of hiring them.

Besides the priority given to research over teaching in policy-making at a state level – as shown also by the ambitious though now discontinued *Estrategia Universidad 2015* (Spanish Ministry of Education 2010; Spanish Ministry of Education 2011) – teaching practices have been also exposed to top-down vectors of change activated a propos of the process of convergence with the EHEA. Such vectors have attempted to redefine the role of faculty members in teaching-learning processes, mainly by calling for a student-centred approach in which teaching staff are expected to facilitate learning, rather than to focus on the delivery of information. In other words, the aim was to foster an overall transition from the so-called ‘sage on the stage’ model of teaching to a ‘guide on the side’ one.

Aiming to inform the process of redefinition of educational methodologies that all Spanish universities were expected to undergo, the Ministry of Education commissioned a report in 2006 with a number of recommendations. While neither

the release nor the use of OER were mentioned whatsoever in that document, it identified the development of educational resources as one of the aspects central to the proposed pedagogical shift:

The updating of methodologies must bring us closer and closer to the pedagogical principles underlying the process of development of the European Higher Education Area: a more active role of students in their own learning, collaborative and competencies-based work, acquisition of learning tools, development of teaching materials aimed at supporting autonomous learning, continuous evaluation, etc. (Committee for Educational Methodologies Updating 2006, p.85. Author's own translation from the original text in Spanish)

Following this trend, over the last few years many universities have created units and aid schemes specifically devoted to foster the development of innovative teaching practices. Under such an umbrella, universities and some regional governments have often allocated funds with the aim of promoting the use of virtual learning environments (VLEs), a process usually referred to as 'virtualization' of modules,⁴⁷ which tend to involve the development or adaptation of educational resources. According to the annual report on ICTs governance across Spain's higher education sector (Uceda Antolín & Píriz Durán 2012), on average 87% of faculty members at each of the respondent universities⁴⁸ make use of a VLE. Besides the use of VLEs, the above-mentioned report also regards the use of external content sharing platforms an example of best practice that is increasingly becoming mainstream in this sector:

If we analyse each of the best practices relating to virtual teaching (Graph 2), it is outstanding the effort that universities are making to create multimedia portals that host teaching digital content (YouTube channel, iTunes, etc.). This type of tools is a very useful way of making content available to students at any time and in any situation. It is used by 70% of Spanish universities. (Uceda Antolín & Píriz Durán 2012, p.22)

⁴⁷ Virtualización de asignaturas.

⁴⁸ Response rates of 93.9% in public universities and 79.2% in private ones.

However, the report does not provide further details about the specific types of web sites and services included under this category, the kinds of content or the intellectual property licences regulating access to such materials. It is also noticeable that the report does not mention the notions of OER or open access at all. The next section focuses on the level of attention paid to OER across Spain's higher education sector, identifying key actors and initiatives.

5.2.4 On the role of universities and the function of HE as a public service

In the previous sections I have described the way Spain's higher education system is regulated and how individual universities are ruled, that is, I have talked about the 'means.' However, I have not discussed the 'ends,' that is, the function that universities are supposed to serve, their *raison d'être*.

Manzano (2012) contends that it is important to bear in mind that the LOU was largely driven by economic goals. It was specifically aimed at 'modernising' Spanish universities so they could contribute to transform Europe into an economy that is fully integrated into the so-called 'knowledge society.' Indeed, it explicitly indicates that universities are expected to help companies to become more competitive (see art. 41). However, despite such economic orientation, it also has some room for issues relating to culture, critical thinking and the service to society, without being exclusively driven by market imperatives (Manzano 2012, p.157).

The LOU establishes that universities, no matter whether public or private, are responsible for the provision of the *public service* of higher education, namely by means of research, teaching and study. In addition, universities are expected to fulfil a number of social functions:

- To create, develop, disseminate and critique science, technology and culture.
- To train students to pursue professional careers that require applying knowledge and scientific methods as well as artistic creation.
- To disseminate, assess and transfer knowledge in order to support culture, life quality and economic development.
- To disseminate knowledge and culture by means of university extension and life-long learning.

A sense of social responsibility is thus embedded into the notion of 'university' according to Spain's legislation. Moles i Plaza (2006) notes that higher education is understood in this context as a *universal* public service, meaning that it must fulfil at least three conditions: 1) it has to be aimed at the general interest, 2) it must be affordable to all citizens regardless their economic status or social background and 3) it must guarantee a high standard of quality.

However, the equity with regard to access to higher education in Spain has suffered a marked deterioration over the last few years. On the one hand, tuition fees have been subjected to a significant increase and, what is more, the cost of degrees now varies wildly across the seventeen Spanish regions. On the other hand, the system of grants is clearly insufficient to meet the increasing needs of students:

The main issue is that the rise in public fees has not been accompanied by one of the most fundamental pillars of equity policies in education at university level: the system of scholarships and grants, which in Spain has traditionally suffered from problems of sufficiency (due to the low volume) and efficiency (due to the way it has been managed). Such problems have been not only reinforced, but seriously worsened because of the impact of budgetary cuts at a time when [support] was most needed for society. (Vázquez 2013, p.207. Author's own translation from the original in Spanish)

Although the provision of OER may help to advance some of the goals that are supposed to guide the activity of Spanish universities, the dissemination of educational materials on its own is not considered either part of the public service of universities or an activity that, more specifically, public universities are necessarily expected to do. On the contrary, the outputs of all research projects that have been funded with public monies must be publicly available on the Web, as dictated by the higher education regulatory framework at a state level. In particular, one of the sections (i.e. Art. 37) of Spain's Law of Science, Technology and Innovation (Government of Spain 2011a) is specifically devoted to the dissemination of research under open access conditions, namely following the so-called green approach. That is, all researchers whose work is primarily funded by the state must make any article accepted for publication in a journal article available at an open access repository. Most importantly, it has to be done as soon as possible and by no means later than 12 months after publication.

In addition a royal decree passed in 2011 with the aim of regulating doctoral programmes (Government of Spain 2011b) states that all universities must make PhD theses available at an institutional repository. In any case, it must be noted that it is not clear whether that rule requires the release of theses under open access or not. Although the text uses the word *abierto* (equivalent to "open"), it literally refers to the type of electronic files that must be used (i.e. open source), rather than the conditions of access.

5.3 OER provision in Spanish universities

Even though the provision of OER seems to be out of the scope of state-level and regional higher education policies, a considerable number of Spanish universities have embarked on the development of OER initiatives, mainly OCW

sites. As noted in Chapter 2, more than 40% of Spanish universities are affiliated with the OCW Consortium. Most recently, the so-called Massive Online Open Courses (MOOCs) have also started to generate a great deal of attention among Spanish universities. While Universia is operating as a key player in this field too, the range of organisations and alliances involved in the provision of MOOCs in Spain seems to be more diverse than in the case of OCW initiatives, which exclusively revolve around Universia.

In order to understand what seems to be a paradox, it is crucial to look at Universia, an organisation external to Spain's higher education systems that has played a key role in the proliferation of OCW initiatives in Spain. But before doing that, I will discuss the results of an exploratory web impact analysis that I conducted with the aim of gaining insight into the overall level of attention paid to the notion of OER across Spanish universities. The data discussed in the following section was first presented at the UK's OER Conference (Villar-Onrubia 2013).

5.3.1 Assessing the attention to OER across Spain's HE sector: a web impact assessment

With the aim of assessing the extent to which people at Spanish universities are concerned with the notion of OER, I examined the resonance of a series of key phrases in the web domains of such universities. I achieved this through the use of Google Scraper (Digital Methods Initiative 2012), an 'automatic search engine query submitter' (Thelwall 2009, p.57) that relies on data supplied by Google. For further details on data collection and analysis procedures see Chapter 4 and Villar-Onrubia (2014).

In particular, I constructed a query consisting of three different phrases separated by a Boolean operator: "open educational resources" OR "*recursos*

educativos abiertos” OR “*recursos educativos en abierto*.” By interpreting domain names counts and URLs counts as a sign of attention, at a personal and/or institutional level, I was able to identify universities that seem to be particularly concerned with the idea of OER. Then I interpreted the data taking into account other organisational attributes (e.g. their public or private nature, campus-based or distance education, location, OER initiatives, etc.) and contextual information.

The web domains of most universities did mention at least one of the queried phrases to some degree. Indeed, only about 32% of the universities did not match the query. An interesting finding is that private universities seem less likely to pay attention to OER. While all the public universities but three matched the query, only six out of twenty-eight private universities mentioned the phrases in the web domains (see Table 6).

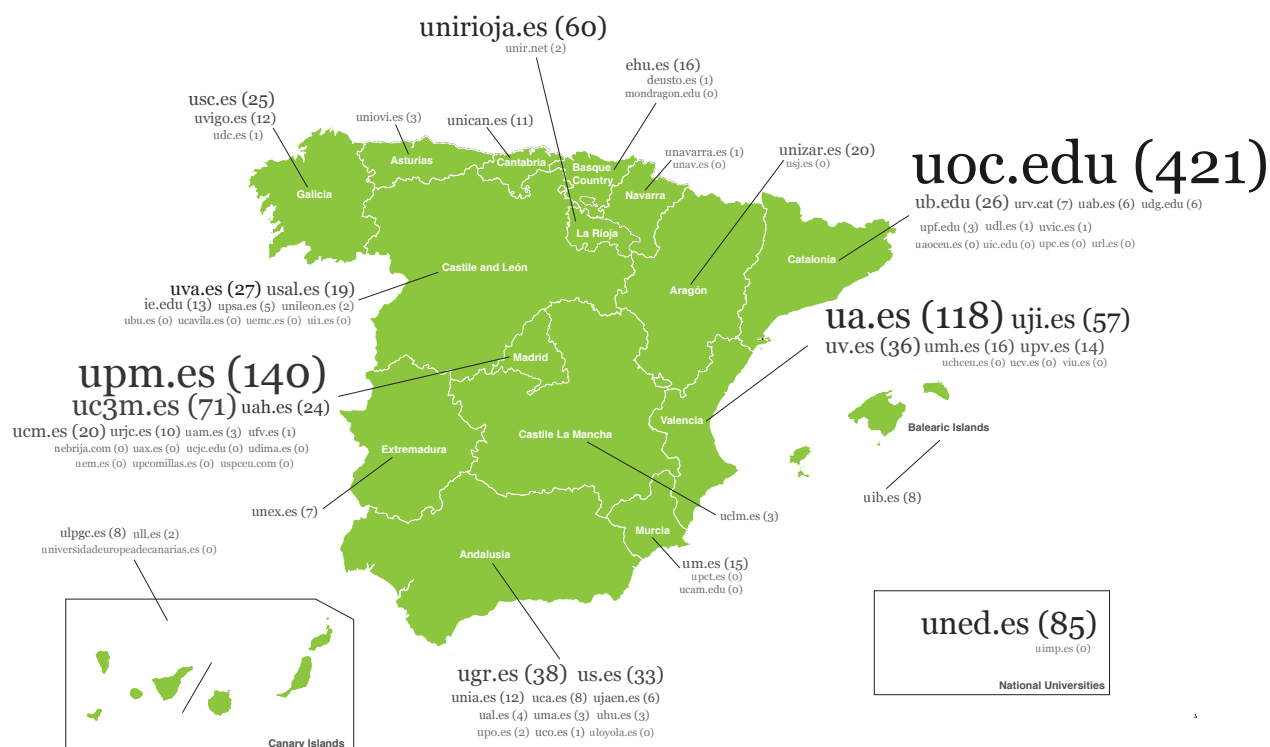
Table 6: Universities mentioning and not mentioning OER related phrases in their web sites by institutional nature (public vs. private).

	Public universities	Private universities
Matching the query	47	6
NOT matching the query	3	22

As shown in Figure 9, all the regions in Spain had at least one university whose domain matched the query. Andalusia, Catalonia and the Community of Madrid were the regions with the highest levels of attention to OER, as indicated by the number of universities mentioning the queried phrases in their web sites. Nevertheless, it must be taken into account that those regions also have the largest number of universities, as well as the largest number of public universities. It must be also pointed out that, besides Spanish, there are other languages spoken in Spain, most notably Basque, Catalan and Galician. Since the query was restricted to

phrases in English and Spanish, it is possible that some regions are misrepresented in this regard. However, all universities have a version in Spanish.

Figure 9 – Map of Spain including the nº of web sites (URLs) per university that mention OER related terms



Focusing on URL counts after eliminating duplicates, it may be noticed that the average number of web pages returned by the query was 25.5. The median was however considerably lower, as fewer than 10 web pages per domain were retrieved from half of those universities matching the query. There were four universities that stand out in relation to the number of URLs retrieved from their domains: the Universitat Oberta de Catalunya (UOC), the Universidad Politécnica de Madrid (UPM), the Universidad de Alicante (UA) and the Universidad Nacional de Educación a Distancia (UNED). As we will see below, beyond attention at a rhetoric level (i.e. mentions of relevant phrases), it may be argued that those four universities are also particularly engaged in practical terms, meaning that they have developed their own OER initiatives or that, in some cases, the very notion of

OER was a core aspect of their strategic orientations at the time of conducting the analysis. The four of them are public, while two of them are exclusively devoted to the provision of distance education.

5.3.2 Santander and the Universia Network

In order to understand the high level of interest generated by the OCW model of OER provision among the governing boards of universities in Spain it is important to look at the role played by Universia. In spite of not being an actor internal to Spain's higher education system, Universia is an influential stakeholder. This international network of universities is aimed at "promoting shared projects between universities and exploring the potential relations between universities and companies" (Universia Holding 2011).

The Universia network⁴⁹ was originally created in Spain, in 2000, as a joint initiative between 35 universities, the CRUE, Spain's Higher Council for Scientific Research (CSIC) and the Santander Bank. A company, Universia Spain S.A.,⁵⁰ was also established with the aim of coordinating the activities of the network while providing also a varied range of services (e.g. public relations, digital communications, etc.). The vice-chancellors of all Spanish universities participate in the general meeting of shareholders of Universia S.A. that is held every year, while some of them are also members of its board of directors.

The Universia network gradually expanded its area of operation to Andorra, Portugal and eventually 19 Latin American countries (see Table 7). In the course of that process sister companies of Universia S.A. were created in each of those countries, so the University network is now formed by an international holding.

⁴⁹ www.universia.net

⁵⁰ <http://www.universia.es>

With 1,242 partner universities, Universia claims to be currently the “largest university cooperation network” (Universia Holding 2011).

Table 7 - Members of Universia network of universities

Country	Universities affiliated with Universia	Faculty and students at affiliated universities	Faculty and students (total in country)	% represented in Universia
Andorra	1	1,172	1,172	100%
Argentina	80	1,762,557	1,913,966	92%
Bolivia	11	315,147	375,492	84%
Brasil	270	3,113,022	7,097,107	44%
Chile	60	923,144	919,001	99%
Colombia	61	782,127	1,369,742	57%
Costa Rica	10	105,778	183,878	58%
Cuba	2	75,954	402,714	19%
Dominican Republic	13	253,531	329,561	77%
Ecuador	19	178,995	373,105	48%
Guatemala	6	160,989	220,370	73%
Honduras	10	131,118	149,827	88%
Mexico	415	2,838,428	3,289,374	86%
Nicaragua	11	96,344	100,600	96%
Panama	8	137,039	153,099	90%
Paraguay	10	112,273	132,186	85%
Peru	65	789,556	842,055	94%
Portugal	27	301,258	426,488	71%
Puerto Rico	19	211,916	266,177	80%
Salvador	7	87,501	132,333	66%
Spain	79	1,656,642	1,656,642	100%
Uruguay	5	146,308	146,308	100%
Venezuela	53	1,122,240	1,373,523	82%

Source: (Universia Holding 2013)

Although the Universia Holding and the Santander Group are not the same entity, they are linked by means of very strong ties. Indeed, the former relies heavily on funding that is provided by the latter as part of its corporate social responsibility programme. The bank has given about €170 million to this network, which is “jointly owned by its more than 1,200 members, all Ibero-American

universities who will benefit financially if Universia ever turns a profit” (Lloyd 2011, p.23).

Moreover, the president of the Santander Bank is also the president of the Universia Holding S.L. and its international advisory board, as well as the president of the respective boards of directors of the Universia system companies in all the countries that are part of the network. Moreover, other members of the Santander Group sit on all the above-mentioned boards too (Universia Holding 2013). It is also noteworthy that the headquarters of the Universia Holding S.L. are at the Financial City of the Santander Group in Madrid.

The Universia Holding is embedded into a wider package of actions aimed by the Santander Group at the higher education sector. Santander Universities Global Division was established in 1997 and has funded university initiatives around the globe with over £500 million spent in scholarships, travel grants, projects, and awards (Santander UK n.d.). But beyond sponsorship, and not without controversies, the Santander Group has also clearly approached universities as a strategic market.

Apart from developing financial services specifically targeted at students and staff, Santander has also signed agreements with numerous universities that have allowed the bank to occupy a strategic position in the higher education sector. For instance, having more than 90 branches at Spanish universities, the physical presence of Santander in campuses is usual. In a similar vein, around 6.3 million student cards have been supplied by Santander at more than 260 universities across 11 countries. As noted in a press release circulated after its recent introduction in the UK:

The card will become an essential part of student life, combining the features of a student University ID card; with access to buildings and library services, with the option of a Visa Debit card incorporated. [...] The enhanced Smart Card which incorporates Visa Debit functionality needs to be linked to an existing or a new Santander Student Current Account or a Santander International Student Current Account. (Santander UK 2013)

Both the philanthropic and the commercial agreements of the Santander Group in this sector seem to be positioning the bank in a unique situation, not only to attract universities as clients but also to reach students and graduates as a massive niche of individual customers. Indeed, the dramatic increase – way beyond inflation – in tuition and fees taking place at a global scale over the last decades has forced a considerable number of students and families to rely on loans as the only means of funding access to higher education (Williams 2009). Under these circumstances, students and graduates seem to be becoming an increasingly enticing market for the banking sector.

Generally speaking, university leaders have greeted these kinds of agreements warmly – as illustrated by the declarations of the president of a public Latin American universities quoted in Lloyd (2011, p.24): “I don’t have any problem if the bank obviously wants a market, but it gives additional benefits to the users. It’s a win-win situation.”

On the contrary, critics among faculty and students have interpreted this as an illegitimate incursion of corporations in the university realm. In the Latin American context it has been criticised as a neo-colonial assault on the university (Dávila 2005). In Europe the presence of Santander at campuses has been signalled by critics as another indicator of the existence of a neo-liberal agenda behind the Bologna process of convergence towards the European Higher Education Area.

The problem would not be so much that private corporations may be somehow perverting the public nature of the higher education sector with their sponsorship actions or aggressive marketing strategies. The real issue is that, in a context where the proportion of State funds is in clear decline, the functioning and very existence of universities – thus the supply of the higher education public service – might increasingly depend on money allocated in accordance with the private interests of corporations.

The presence of banks and companies at university campuses has been seldom studied, but there are evidences of growth and penetration. A paradigmatic example is Universia, a consortium of universities sponsored by the Santander Financial Group with the aim of entering the university market camouflaged under the guise of disinterested altruism, which has been welcomed by managers and vice-chancellors. This case clearly illustrates how functions that used to be performed by the State – such as the funding of academic projects and research, scholarships and awards – are now taken over by the commercial banking sector, a source that vice-chancellors are starting to turn to in order to increase their limited budget. (Ibarra Colado 2012, p.87. Author's own translation from the original in Spanish)

In a context like Latin America or Spain, where endowments are not usual and it is not customary for former students to donate money to their universities, the sponsorship of private companies might be the only route for many higher education institutions (Lloyd 2011). Therefore, whether moved by philanthropic purposes, commercial aims or a mix of both, actors that are external to the higher education system may be very well placed to shape the agenda of universities, for good or ill.

With regard to the proliferation of OCW initiatives in Spain, it is important to take into account the role of Universia and the broader relationship between the Santander Group and each university. Nevertheless, the fact that the development of such initiatives – beyond their mere launch – was hardly driven by the actual needs of universities or the interests of faculty members may explain the rather limited levels of participation in most universities.

5.3.3 The OCW Universia Consortium

Universia started to foster the provision of OCW courses just a few years after the MIT-OCW initiative was launched. In 2002 Universia and MIT signed an agreement according to which the former would supply translations – into both Spanish and Portuguese – of a selection of modules available at MIT-OCW (Aranzadi & Capdevila 2011). In 2003 Universia launched a separate portal where the translations were available.⁵¹ In addition, each of the original modules at MIT-OCW included a link to its respective translation at Universia's portal.

Immediately after the creation of the OCW Global Consortium in 2006 Universia became one of its sustaining members.⁵² Twelve Spanish universities also joined the consortium at that early stage (Pedreño 2006). In 2007 Universia launched an associated consortium aimed at fostering the development of OCW sites among its affiliates. Universities wishing to join the Universia OCW Consortium were required to subscribe the OCW Global Consortium's memorandum of cooperation, according to which they committed to two principles:

1. We will develop a pilot OpenCourseWare site under our institutional name that comprises at least 10 courses and is consistent with the definition of "OpenCourseWare" on the Consortium Web site (<http://www.ocwconsortium.org/use/index.html>).
 2. We will work with the other members to develop standards to promote reasonable consistency in quality, content depth, vocabulary, and presentation, all in the interest of offering users a similar experience from one member's OpenCourseWare site to another.
- (The OCW Consortium n.d.)

⁵¹ <http://mit.ocw.universia.net>

⁵² There are several types of membership, depending on the nature of affiliates: HE institutions, other types of organisations, corporations and associate consortia. All the members are required to pay a fee. Any member, regardless its nature, can become a sustaining member, which entails the payment of a higher fee. In the case of associate consortia, sustaining members are required to pay around \$27,000 over five years. For further details see <http://www.ocwconsortium.org/en/members/howtojoin>.

Universities affiliated with the Universia OCW Consortium were also advised to create teams or units in charge of running their OCW initiatives. More specifically, the so-called 'OCW Offices' are expected:

1. To foster participation among faculty members and to provide them with information, training and advice where needed.
2. To adapt the OCW model in accordance with both the specificities of their own universities and the approach of OCW-Universia.
3. To provide legal advice to their universities and faculty members, establishing a legal protocol that offers guarantees to all the actors.
4. To collaborate in the process of intellectual property rights clearing and, if needed, seek or generate alternative resources.
5. To ensure the quality of content and foster its permanent improvement.
6. To supply technical equipment where needed in order to adapt content for dissemination via the Internet: content management system, creation of multimedia content, a/v recording, etc.
7. To seek effective solutions aimed at simplifying the dissemination of content via a variety of online environments with different goals.
8. To maintain their OCW site.
9. To coordinate with other OCW offices at national and international scale.
10. To produce reports and suggest improvements to their universities' governing boards. (Universia n.d.3. Translation from the original in Spanish)

The main argument used by Universia to encourage universities to join the consortium was to do with the idea of "positioning institutions in relation to a phenomenon of global impact" (Universia n.d.1. Author's translation from the original in Spanish). Further, a few potential benefits to universities in developing an OCW site were listed on the web site:

- Advancement of knowledge by making teaching resources available for free and implementing mechanisms to enhance their discoverability potential.
- Stimulation of innovation and improvement of teaching materials used by academics.
- Making academics more familiar with technology.
- Opportunity to address the regulation of intellectual property and attribution of authorship.
- A wider projection of the institutional mission. (Universia n.d.1. Author's own translation from the original in Spanish)

According to Pedro Aranzadi, Managing Director of Universia Spain and also Technology Coordinator for Universia at a global scale, the main incentives for

universities to join the consortium were to do with branding opportunities. That is, both the development of an OCW site and the affiliation with the Universia OCW Consortium were approached by most of the universities as an opportunity to pursue marketing and internationalisation goals. In this respect, the underlying idea was that affiliates could gain prestige by associating their brands with an initiative originally devised by a world-class university such as MIT (Aranzadi's declarations in Villar-Onrubia 2012b). From Aranzadi's point of view, it is almost a strategic obligation that all and any universities are at least considering the idea of getting involved in the provision of OER:

Having an OCW won't make you any wealthier, but it is part of these days' zeitgeist. You cannot be out. We think that, as far as possible, all institutions should be at least sniffing around this issue, I won't say 100% involved, but [at least] attentive and curious (Aranzadi's declarations in Villar-Onrubia 2012b, p.141. Author's own translation from the original in Spanish).

According to the professor who was in charge of leading the first steps in the creation of the OCW Universia Consortium, the idea of 'reputation' was key.

I believe that it is already a driving-force. If scholars keep hiding their materials we are actually revealing our incompetence. To be competitive is to show what we teach, our resources, our methodology... I think that this is increasingly associated with the idea of 'academic reputation' and let's hope this will be increasingly formalised, officially recognised, more enthusiastically, with more determination. (Professor who led the creation of the OCW Universia Consortium)

Besides the expected benefits, the OCW-Universia portal also listed some of the potential downsides or difficulties that universities may face when implementing an OCW initiative. In particular it highlights the extra effort required from faculty members (i.e. revision or adaptation of their materials following the OCW structure) as well as the costs associated with the provision of support to authors and the introduction of new managerial processes. In addition, it points to potential conflicts between OER practices and business models based on the monetisation of educational content (Universia n.d.1).

Apart from rational arguments, a certain level of rivalry between universities and academics also played a key role according to Universia officials. For instance, after showing the amount of traffic received by the first universities in the consortium to the leaders of other universities, they were eager to participate as well. Likewise, a similar sense of competition was also operating subsequently at the level of faculty members.

Academics are often driven by vanity or egotism. When they saw that there were colleagues who were receiving awards by the Ministry [and Universia] because of doing that then they pulled their socks up. There were universities who took it very seriously. For instance, the University of Murcia has won prizes several years. They decided that they were going to win awards and they did so. There are materials that are really amazing. (Universia informant)

The key assumption underlying the discourse of Universia is that, by providing high quality teaching materials on the public web, universities may facilitate self-directed learning for anyone in the world, helping to democratise access to higher education. Such an assumption somehow implies that educational materials can replace tuition, at least to some extent. As noted by one of the officials of Universia, this may question the role of academics in teaching-learning processes:

Even though it is still at a very early stage [...], it somehow questions universities as such. So, even though nobody tells you that it isn't interesting or it's irrelevant, I understand that some people are suspicious: 'Let's see, if I [as an educator] am not essential, what is this?' (Universia informant).

Although more than 100 universities in Latin America, Portugal and Spain joined the OCW Universia Consortium, it is noteworthy that most of the affiliated universities have not even launched an OCW site (see Table 8). Spain is the country with the largest number of universities that have both joined the OCW-Universia Consortium and actually launched an OCW site.

Table 8 - N° of universities affiliated to the OCW Universia Consortium by country

Country	N° Universities that have signed the memorandum	N° Universities with an OCW site
Spain	46	29
Colombia	8	5
Chile	5	3
Mexico	13	3
Argentina	6	2
Peru	8	2
Brazil	15	1
Puerto Rico	2	1
Venezuela	7	1
Portugal	1	0
Dominican Rep.	1	0
Uruguay	1	0
Total	113	47

Source: Data extracted from a report supplied to the author by Universia (Universia 2012)

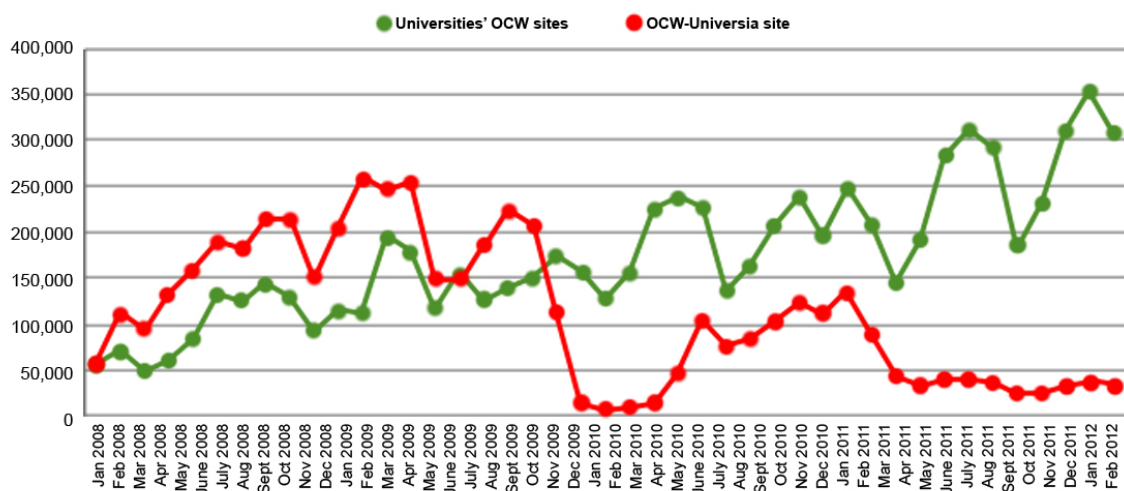
The role of Universia in the establishment and steering of the associate consortium entailed three main aspects: 1) aiming to increase the visibility of the materials released by the affiliates, 2) fostering cooperation, peer-support and the exchange of expertise and best practices among them, and 3) encouraging academics' participation.

In order to pursue the first goal Universia developed the OCW-Universia portal⁵³ taking as a model the web site of the OCW Global Consortium. In this respect, apart from including links to the OCW sites of all members, the Universia OCW portal also aggregated (via RSS) the modules released by most of those sites. Aiming to increase visibility, in 2009 Universia started to translate the meta-data of all the courses into 14 different languages (Aranzadi & Capdevila 2011). However, such service has been now discontinued.

⁵³ <http://ocw.universia.net>

Universities were advised to make use of Google Analytics to track the traffic attracted by their OCW sites (Anon 2007). In parallel, Nielsen Netratings supplied statistics of the number of visitors attracted by the OCW-Universia portal, versus those users landing directly in the OCW sites of each university. It is noticeable that universities agreed to keep the comparative data about the traffic of their sites confidential. While initially most visitors landed in the OCW courses via the OCW-Universia portal, since May 2010 the majority of the traffic has been directly attracted by the OCW sites of each university, so Universia has been gradually playing a less important role in this regard (see Fig. 10).

Figure 10 - Traffic to OCW-Universia portal vs. traffic to universities' OCW sites



Source: Data extracted from a report supplied to the author by Universia (Universia 2012)

At an early stage in the history of the consortium Universia commissioned the Polytechnic University of Madrid (UPM) to provide the rest of the members with assistance in the process of implementing their OCW initiatives – from a technical, legal and organizational perspective. As part of such role, UPM conducted various studies and prepared various reports and tutorials. For instance, the UPM conducted a comparative analysis of several content management systems (CMS) that could be used to power the OCW sites. Although

each university was free to choose its own platform, members were encouraged to use eduCommons⁵⁴ – an open source CMS based on Plone that was specifically developed by Utah State University’s Center for Open and Suitable Learning.⁵⁵ Most OCW sites, both in Spain (64%) and at a global scale (40%), are powered by this CMS (Borrás Gené 2010). UPM developed tutorials on the use of eduCommons aimed both at IT staff in charge of managing the sites at each university and the authors of courses.

In addition, UPM worked on the development of some documents aimed at providing affiliated universities with relevant legal advice. Most notably, UPM created a model of intellectual property contract to be signed by OCW contributors. Likewise, UPM’s Legal Advice Unit produced a report concluding that, at that time, it was possible for universities to apply an ISBN and/or a DOI to OCW modules (Martínez Fernández 2009). That information could be helpful when encouraging faculty members to get involved in the release of OCW courses, as the application of an ISBN would facilitate the recognition of such activity in the course of ANECA’s evaluation processes.

Over the next few years after the inception of the OCW-Universia Consortium, Spanish affiliates hosted regular meetings with the aim of sharing expertise and best practices in relation to the implementation of OCW initiatives. While some of the meetings were aimed at universities’ leaders responsible for OCW initiatives at a policy or strategic level, other meetings focused on gathering together managerial and IT staff in charge of the day-to-day running of the OCW initiatives. Participants presented on a wide variety of topics, including the implementation of

⁵⁴ <http://plone.org/products/educommons>

⁵⁵ The centre is no longer operating as such.

workflows designed to manage OCW initiatives, financial aspects (e.g. the costs of an OCW initiative, per course), and strategies devised to increase participation levels.

Further, aiming to prompt interactions on a regular basis, Universia also developed an intranet with three thematic forums on general aspects, technical issues and legal issues. Although those forums had a certain level of activity at the beginning, especially in relation to technical issues, participation has gradually decreased (see Table 9). Indeed, in March 2014 the forums were no longer functioning. The high number of messages dealing with technical aspects reflects the difficulties experienced by most of those universities that powered their OCW sites with eduCommons. Such difficulties were also regularly addressed at the meetings, as recorded in a number of minutes.

Table 9 – Nº of threads and messages per thematic forum at the OCW-Universia intranet

Forums	Threads	Messages	Last message
General	10	43	21 st July 2011
Technical issues	35	152	30 th Mar 2011
Legal aspects	1	1	8 Apr 2008

Source: Data extracted from OCW-Universia intranet.

The third main role played by Universia in the associated consortium was to do with the aim of fostering participation among faculty members. In this respect, Universia teamed up with Spain's Ministry of Education to launch an annual prize recognizing the quality of outstanding OCW courses released by Spanish universities. The first year of the award took place in 2007 and it has been repeated ever since then. While the prize was initially devised to reward OCW authors, subsequently it also included an economic incentive to the universities of

such authors, namely to the OCW offices or equivalent units responsible for the OCW sites.

The author/s of the first prize receive/s €6,000, while the OCW office of their university is awarded with a grant of €4,000. The author/s of the second and third prizes receive €3,000 and each of their respective universities €1,000. In addition, there is a prize specifically aimed at rewarding best practice with regard to accessibility, with €6,000 for the author/s and €4,000 for their OCW office. As shown in Table 10, only around half of the universities in Spain with an OCW site have participated in the contest over the last few years.

Table 10 – Levels of participation in Spain’s Ministry of Education - Universia OCW Prize (2008-2013)

Awards	Nº of OCW modules submitted	Participating universities
1 st Edition	55	9
2 nd Edition	152	22
3 rd Edition	84	16
4 th Edition	67	16
5 th Edition	147	15
6 th Edition	70	15

Source: Data extracted from Aranzadi & Capdevila (2011) and Universia España (2011; 2012; 2013)

Users, OCW offices and Universia’s editorial board participate in the selection of up to 10 courses. Then, a jury appointed by Universia and the Ministry is in charge of choosing the winners. The main criteria guiding the decision of the jury are to do with the structure and coverage of courses, the richness of content (i.e. multimedia, interactivity, etc.), the scientific and didactic value of materials, the usability and accessibility, and the amenability for re-use of elements (Universia & Spain’s Ministry of Education, Culture and Sport 2013).

In 2011 the Managing Director of Universia in Spain, Pedro Aranzadi, received the Leadership Award of the OCW Global Consortium due to his role in

the proliferation of OCW initiatives in Spanish and Latin American universities. However, the advocacy efforts of Universia in relation to OCW are now limited to the sponsorship of the above-mentioned awards. Indeed, the interest of Universia has now shifted from the release of OCW materials to the provision of MOOCs.

Nevertheless, the range of organisations involved in the promotion of this type of initiative in Spain and Latin America is wider than in the case of OCW. Indeed, several initiatives aimed at the provision of MOOCs were launched in Spain over the last few months of 2012 and the beginning of 2013. Santander-Universia, Telefonica, UNED and the Higher Centre for Virtual Teaching⁵⁶ (CSEV) were the organisations leading the field. Indeed, these organizations are involved in almost all the MOOC initiatives in Spain. It should be noticed that CSEV is a foundation created by UNED, Santander, Telefonica and various Spanish ministries.

Miriadax⁵⁷ is an inter-institutional platform – resembling Coursera’s formula – aimed at higher education institutions of Spain, Portugal and Latin America wishing to offer their own MOOCs. At the time of writing, there were 16 Spanish universities and 2 Latin American institutions involved in the provision of some 60 MOOCs available at this platform. Miriadax is supported by Santander, Universia, Telefonica, Telefonica Learning Services and CSEV. Participants completing the courses may have access to a certificate issued by Miriadax, rather than the universities in charge of delivering the courses. In partnership with Spain’s Ministry of Education, Miriadax’s partners have launched a prize aiming to reward the authors and universities of MOOCs offered on that platform.

⁵⁶ Centro Superior para la Enseñanza Virtual.

⁵⁷ www.miriadax.net

unX⁵⁸ is an initiative focused on the provision of MOOCs on digital entrepreneurship. Participants can obtain recognition for their new skills via Mozilla Open Badges.⁵⁹ The CSEV won the 2013 New Media Consortium Center of Excellence Award thanks to this initiative (Becker 2013).

While UNED is offering courses at Miriadax, this distance university has also launched its own MOOC portal, called COMA.⁶⁰ Participants completing any of the courses offered at COMA may have access to both informal and formal mechanisms of recognition (UNED COMA 2013b). Informal recognition is based on badges, while there are two different routes of formal recognition, both of them requiring an assessment. Whereas *credentials* may be obtained after paying a small fee (i.e. 10-15 €) and passing an online test, *certificates* involve paying a higher fee (i.e. 40-60 €) and passing an exam in one of the 62 centres that UNED have scattered across all Spain. UNED claims to be the first MOOC initiative offering official certifications, as it launched a pilot experience before Coursera offered a similar possibility (UNED 2013).

The courses offered by UNED COMA rely primarily on short videos, supplementary materials, self-assessment tools and peer-to-peer learning based on the use of a forum. In addition, a team of facilitators and curators may intervene, either addressing some of the questions formulated by students or steering the dynamic of the forum (UNED COMA 2013a). It is worth mentioning

⁵⁸ <http://www.redunx.org>

⁵⁹ <http://openbadges.org/>

⁶⁰ <https://unedcoma.es>

that the technical system used to power COMA, known as OpenMOOC,⁶¹ is an open source platform that has been developed by UNED and CSEV.

UniMOOC *Æmprende*⁶² is an initiative of the International Economy Institute of the University of Alicante in partnership with a broad range of collaborators, including Santander, Universia, CSEV, the CRUE, Google and various Spanish universities. Participants may have access to badges as way of learning recognition – after passing a test –, although the project says it is working towards more formal forms of certification. Like unX, UniMOOC *Æmprende* focuses on entrepreneurship skills. It is powered by an open source system released by Google under the name Course Builder (Norvig 2012).

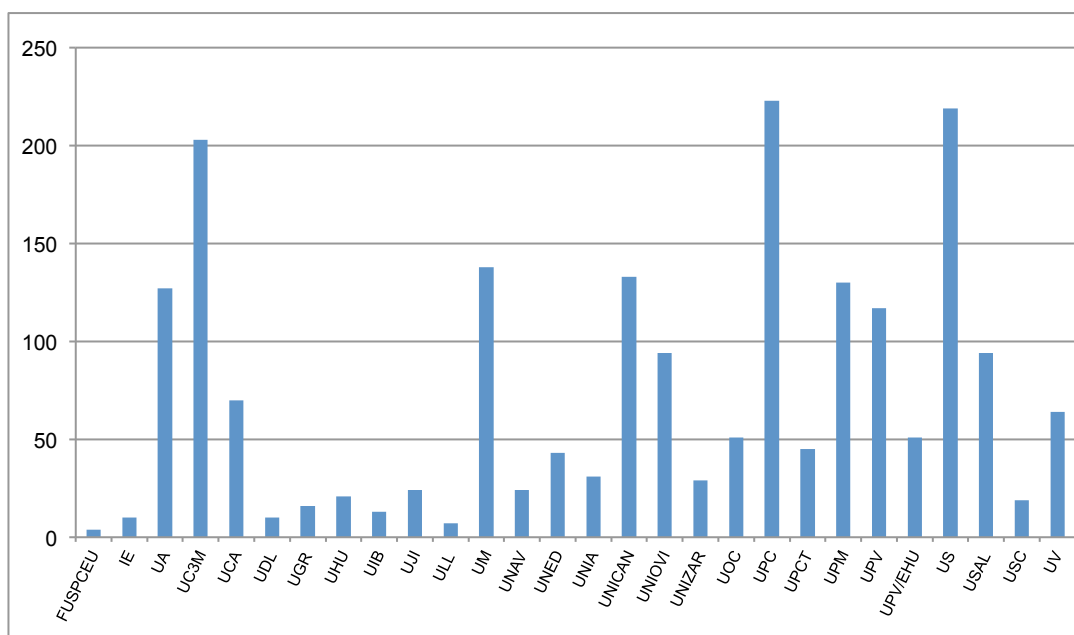
5.3.4 OCW initiatives in Spain

Besides telling apart those universities that are just affiliated with the OCW Universia Consortium from those which have also launched an OCW site (as shown in Table 8), it is also important to pay attention to differences across the latter universities with regard to the actual level of activity of the initiatives (see Fig. 11).

⁶¹ <http://openmooc.org/>

⁶² <http://unimooc.com>

Figure 11 - Nº of OCW courses released by Spanish universities (April 2012)



Source: Data extracted from a report supplied to the author by Universia (2012)

Taking into account the number of OCW modules by university, the most active ones are the Polytechnic University of Catalonia (UPC), the University of Seville (US) and the Carlos III University (UC3M). In any case, the number of modules on its own does not always work as a valid indicator of activity, as the quality and length of materials can vary to a considerable extent. For instance, the only materials offered at the OCW site of the University of Huelva (UHU) are the syllabi of the modules.

As for those OCW initiatives that stand out because of the quality of their sites and/or modules, it is worth looking at universities that have been awarded either national or international prizes. Most notably, the University of Alicante (UA) won the 'landmark site award' for OpenCourseWare Excellence of the OCW Global Consortium in 2011 (OCW Consortium 2011). It is also worth mentioning that the quality of OCW modules released by a few universities have been recognised by means of recurrent prizes in several editions of the OCW Awards of

Spain's Ministry of Education and Universia, namely the universities of Cantabria (UNICAN), Murcia (UM), Oviedo (UNIOVI), Polytechnic of Cartagena (UPC) and Polytechnic of Madrid (UPM) (Aranzadi & Capdevila 2011; Universia España 2011; 2012; 2013).

According to Tovar et al. (2013), most of the OCW modules released by Spanish universities cover topics on Architecture & Engineering (about 40%) and Social Sciences & Law (about 25%). These authors also note that the average number of authors per course is close to two and there is a high level of dispersion, with many courses authored by just one person and some of them with even more than ten co-authors. The study, which draws on data collected by means of focus groups and a survey, indicates that OCW initiatives in Spain have very limited resources available. Likewise, it concludes that faculty members have very few incentives to get involved in the creation of OCW modules.

Relying on data collected by means of a survey that included both a control and an experimental group,⁶³ Frías et al. (2013; 2010) contend that the most important barrier to participation was to do with the lack of any official recognition of the effort and time that faculty members have to invest in the development of OER that matches the OCW model.

5.4 Chapter summary

In this chapter I provided an overview of the main features that characterise Spain's higher education system, focusing on regulatory frameworks and key

⁶³ The control group was formed by scholars who had not participated in any OCW initiative at that time, while respondents in the experimental group had contributed with one or more OCW module. The response rate was 11% ($n=72$) in the control group and 26% in the experimental group, with 109 respondents who had created just one OCW module and 74 respondents who had released at least two. Most respondents in both groups were male and the average number of years working as academics was 16.45 years (standard deviation 8.17 and mode 20).

bodies that operate at a state level and shape the professional activity of faculty members and the functioning of universities to a considerable extent. Paying attention to this complex environment is crucial in order to grasp the dynamics that influence the adoption of OER provision practices at local contexts. The rules and processes relating to the evaluation of academics are particularly relevant in this regard, as they determine the activities and behaviour key to their professional development.

In this chapter I have also looked at the overall level of attention that is being paid to the notion of OER across Spanish universities, as indicated by the results of a Web impact analysis. Focusing more specifically on the adoption of the OCW model of OER provision, the chapter discussed the role of Universia and the Santander Group, which are responsible to a large extent of the high number of universities in Spain joining the OCW Consortium. The last section of the chapter looked at differences with regard to the number of OCW modules released across Spanish universities. Each of the next three chapters will focus on a Spanish university that has launched an OCW initiative with varying levels of participation by faculty members in the creation of content. The results of the empirical work conducted in the thesis are presented in these chapters.

6 Low levels of participation in the provision of OCW modules at a large university: the UNI-B case

This is the first of the three empirical chapters included in this thesis. It focuses on an OCW initiative that has attracted low levels of participation. After introducing the setting, one of the largest and oldest universities in Spain, I will give an overview of the level of involvement in the creation of OCW content. Then, I will use the heuristics of the STIN approach to present the findings emerging from the analysis of data generated in the course of the study. I will identify key actors, resource flows, architectural choice points, and pressures and incentives influencing the behaviour of different kinds of actors. Furthermore, I will discuss the extent to which UNI-B's OCW initiative contributed to raising awareness of OER and its implications for the interaction between academics and external actors.

6.1 Introduction to the setting

UNI-B is one of the largest and oldest universities in Spain. In the academic year 2012-13 there were more than 50,000 students registered at this university, while the community of academics was formed by almost 3,700 faculty members (Regional Government 2013). About 60% of faculty were civil servants. There is a gender gap among both civil service and non civil service academic staff, although it is slightly higher within the former category, which means that senior academics are less likely to be women.

With regard to UNI-B's online presence, it is worth mentioning that its web domain has been ranked within the top-ten universities in Spain and the worlds' top 200 (CSIC - Cybermetrics Lab 2013). There are several web sites under UNI-B's

domain that are specifically aimed at making educational content available to the public, most notably an OCW site and an online repository, which contains also research publications and other types of documents. There is not any connection between the OCW site and the repository, meaning that the contents of the former are not archived also in the latter. Moreover, there is an online video collection that offers content licensed under Creative Commons. Some of those videos may be regarded as OER (e.g. lecture recordings, interviews, etc.).

As for external services, UNI-B has an official YouTube channel that contains educational videos, although it is not indexed in the YouTube EDU directory. According to some of the documents from the university, there were people working on the creation of an iTunes U channel too. However, some of the interviewees approached during the study indicated that the development of the project was at the moment on hold.

UNI-B's OCW initiative was devised in 2008 and launched at the beginning of 2009, that is, almost a couple of years after those Spanish universities that joined the Universia OCW Consortium at an early stage (Universia 2007). Interestingly, the decision-making process leading to its launch did not take place at the university's Governing Board. Instead, the idea of launching an OCW initiative was originally pursued by members of the board of directors of a centre specifically devoted to the provision of services in the areas of e-learning and educational technology.

The modules available at UNI-B's OCW include all the sections specified by the OCW model of content provision, as originally developed at the MIT: syllabus, learning materials, self-evaluation activities, references, etc. As for the nature of content, modules primarily consist of texts of varying lengths and formats (i.e.

HTML or PDF files). In some cases those texts are complemented with video-recordings or other types of multimedia objects. It is noticeable that the level of consistency of the modules, in terms of both structure and visual design, was considerably higher among the first batch of modules. The level of heterogeneity in this regard has increased gradually over time. However, while at other universities there is a clear distinction between highly elaborated modules and others that consist of too basic or succinct materials, in the case of UNI-B's OCW site most of the courses have a similar level.

The modules available at UNI-B's OCW site are classified into five broad knowledge domains: Social Sciences, Arts & Humanities, Health & Life Sciences, Sciences, and Engineering & Architecture.

The content available on UNI-B's OCW site was released under a BY-NC-SA Creative Commons licence, which allows the use of content for non-commercial purposes and the creation of derivative works, provided the new content is also distributed under the same type of licence. Taking into account the total number of modules and the proportion of faculty participating in the initiative (i.e. less than 1%), it may be argued that the level of participation in UNI-B's OCW is considerably low.

6.2 Levels of participation in UNI-B's OCW initiative

The number of OCW modules generated at UNI-B is very low, at least when compared to most of the other Spanish universities that are also members of the OCW Global Consortium. UNI-B's OCW site was initially populated with four modules, going up to 13 during the months following its launch. It is also noticeable that more than half of the modules were released in the two years following the launch of the site. After that initial momentum the amount of content

only increased at a very modest rate, to the extent of turning nearly inactive by 2013 (see Table 11).

Table 11 – Evolution in the number of courses available at UNI-B's OCW (cumulative frequencies)

Knowledge domains	Jan 2009	Dec 2009	Sept 2010	Sept 2011	Nov 2012	Nov 2013
Health sciences	0	0	1	1	1	1
Social Sciences & Law	4	6	8	10	10	10
Science	0	4	3	3	3	4
Arts & Humanities	0	0	0	1	1	1
Engineering & Architecture	0	1	1	1	1	1
TICs	0	0	0	2	3	3
Total	4	7	13	18	19	20

Source: Table elaborated with data extracted from both UNI-B's documentation and the Internet Archive Wayback Machine (<http://archive.org/web/web.php>).

Taking into account that less than 1% of the university teaching population, namely 30 members, were involved in the creation of OCW content it can be regarded as an extremely marginal activity. Moreover, to the vast majority of these authors it was a one-off experience rather than a continuing activity. Indeed, there were only three teachers who had been involved in the creation of more than one module. The maximum number of contributions per author was two modules.

With regard to co-authorship dynamics, it is noteworthy that 70% of the modules available at UNI-B's OCW site had been authored by individual teachers. As for those that were the result of a collective effort, the maximum number of co-authors was six. Almost all the modules created by more than one author address topics in the areas of science and technology, which is consistent with the disciplinary cultures of such areas beyond UNI-B.

6.3 Who were the key actors involved in UNI-B's OCW initiative?

Unlike the two other universities approached in this study, and presumably most universities in Spain, UNI-B's Governing Board did not lead the decision-making process behind the launch of its OCW initiative. Indeed, the implementation of the project was mainly the result of the personal interests of a computer science scholar who was part of the board of directors of the e-Learning Centre.

UNI-B created the e-Learning Centre in the early 2000s with the aim of supporting teaching-learning processes that increasingly relied on the use of online tools. Most recently, it was provided with a brand-new building, being equipped with state-of-the-art facilities that allowed expanding the range of services supplied to members of UNI-B and other external customers, mainly organisations seeking continuing education programmes for professional development purposes. The e-Learning Centre operated as UNI-B's OCW office. A few staff members took charge of the management of the platform and also provided OCW authors with some assistance and training. Moreover, the directors of the centre approached four faculty members who got involved at the implementation stage, creating the first modules that were released along with the site itself.

UNI-B's OCW initiative was not embedded into any pre-existing framework aimed at defining the goals of either the e-Learning Centre or UNI-B at large. Indeed, it may be argued that the overall activity of the e-Learning Centre was hardly connected with formal strategic goals defined at a university-wide level. For instance, although UNI-B's *Strategic Plan* (2006) stressed the importance of paying

attention to the impact of ICTs on the higher education environment at large, it did not define the role of the e-Learning Centre in relation to any of its strategic goals.

Although another unit was devoted to funding innovative teaching initiatives that could draw on the use of ICTs, UNI-B did not have any plan or scheme specifically aimed at fostering the creation of online educational resources, unlike other Spanish universities. Likewise, there was not any scheme designed to foster the provision of OER, even though it was listed as one of the areas of interest of the e-Learning Centre.

The scholars contributing to UNI-B's OCW initiative were not expected to develop ad hoc content. Instead, they were encouraged to release materials already created as a result of their on-going professional practices. Scholars interested in releasing their materials via UNI-B's OCW site had to make a request by submitting a form to the e-Learning Centre. Once the managing team had approved a request, then the authors were required to upload the materials to the OCW platform by themselves.

Based on the assessment of materials performed by staff at the e-Learning Centre in accordance with a quality assurance protocol, authors might be required to adapt some of the materials before making them available on the platform. The evaluation did not focus on content itself, but on the nature and extension of materials. As pointed out by one of the university leaders participating in the study, filtering was restricted to technical or formal aspects in most cases:

We are working right now on a project that focuses on the idea of creating high quality [open educational] content. We're quite concerned, because if you say: "let's create content" but then it's crap... [For instance, if] I upload my slides and that's all, if they are not explained, if there are no [extra] materials... If you have to go to a class to understand anything, then it is like uploading nothing, it is so primitive that is useless to you ... So we are trying to come up with measurable indicators of quality in relation to

materials ... The credibility of a[n OER] project depends on the quality of its materials. (Participant B102 – University leader / Mid-career / OCW Author).

Although assessors could also ask authors to do modifications based on legal aspects, at the end of the day faculty members were responsible for ensuring that their materials comply with the intellectual property legislation. As for the quality of content itself, the same participant stressed that they did not have the authority to assess materials in this respect, as teachers were supposed to be the specialists on their own disciplines and areas. In this respect it was not different from the assessment of classroom-based teaching:

... once a course is over, then a report is generated and marked as "apt" or "not apt." But marking a course as "not apt" is quite difficult, because we have no real authority to say whether it went well or not. We only have a series of measurements that give us an impression, but we don't meddle in that teaching. Because we don't have the knowledge to do that. Moreover, that teacher will give her face-to-face classes in the same way. If the Quality Assessment Unit doesn't say anything about that, we don't have to do that either. (Participant B102 – University leader / Mid-career / OCW Author)

Although OCW authors could have access to some limited technical support, mainly at an early stage, the e-Learning Centre aimed to help academics to develop the relevant skills by means of a series of workshops. Likewise, staff members working at the e-Learning Centre created several documents in order to provide guidance for those teachers wishing to participate in the OCW initiative.

Besides being in charge of the OCW initiative, the e-Learning Centre was also responsible for one of the VLEs in use at UNI-B. Likewise, the e-Learning Centre was in charge of developing and coordinating other initiatives that were devised with the aim of sharing educational resources with the public and, most recently, a platform for the delivery of MOOCs.

The other initiative relevant to the provision of OER, UNI-B's online repository, was managed by personnel of the library. Unlike in other universities, the OCW modules were not archived into the open repository.

6.4 What were the resource flows associated with the implementation and functioning of UNI-B's OCW initiative?

No funding was directly allocated by UNI-B's Governing Board to its OCW initiative. The rather limited resources available to support the initiative were secured by the e-Learning Centre from different sources. In order to understand the funding of the initiative it is important to bear in mind that the e-Learning Centre operates as a quasi-autonomous unit. More specifically, it is a foundation partially funded by UNI-B. While most of its operational budget comes from the provision of a fixed range of services to UNI-B, it relies also on other clients.

The board of directors of the e-Learning Centre is formed by four faculty members of UNI-B, but all the staff members are employees of the foundation instead of the university. This means that they have less stability than most university's employees and that the size and composition of the team varies in accordance with the needs of clients. In order to get seed funding for UNI-B's OCW initiative, one of the members of the body of directors of the e-Learning Centre had to submit a proposal to a call for projects from UNI-B's Innovative Teaching Unit.

The proposal requested funds aimed at covering the expenses associated with the authoring of content, technical equipment and overhead costs – in total about €10,000. However, the amount of financial support secured by means of the call was significantly lower. The final budget, of about €2,000, was spent as a grant to pay for the work of an intern – a computer science student – over six months.

Given that the amount of resources available to support authors was rather limited – with just one technician responsible for providing assistance throughout the entire workflow of content creation and release – they were expected to take ownership of the process and undertake most tasks by themselves. However, the e-Learning Centre offered training opportunities aimed at providing authors with relevant skills and OER literacy. The workshops were included as part of a wider programme of activities that the e-Learning Centre offers every year in order to provide UNI-B' scholars with continuing education in the area of educational technologies.

Last, it is also noteworthy that a major technology company, which is a regular supplier of hardware to UNI-B, donated in 2010 some funds that were used to reward outstanding contributions to both the VLE and the OCW initiative.

6.5 What were the architectural choice points and the main rejected alternatives?

UNI-B's OCW site is powered by Moodle, an open source learning management system that is also used as one the VLEs available to faculty members. There are several e-learning platforms in use at UNI-B. Faculty members can make use of two simple in-house developments in order to share materials with their students and interact with them outside the classroom. In addition, teachers engaged in blended-learning modules make use of Moodle, which offers a wider range of functionalities. While in the past UNI-B relied on a proprietary VLE for that purpose, a few years ago it was replaced by Moodle.

The e-Learning Centre's board of directors was responsible for the transition from the proprietary VLE to Moodle. Although they considered the possibility of using EduCommons while devising the OCW initiative, finally they decided to use

Moodle for that purpose too. As noted by one of the participants in the study who was leading the team, by choosing Moodle they were aiming to facilitate the migration of content from the VLE to the OCW site:

When we decided to go for Moodle the aim was to get some homogeneity. That is if we had an online course [at the VLE] and we wanted to transfer it to the OCW site, [the idea] was to make it very simple. (Participant B103 – University leader / Senior)

Since authors were required to self-archive their modules in the OCW site, decision makers considered that asking them to do so through the VLE would facilitate the process, as they would not need to learn to deal with any other system. The use of Moodle for both the VLE and the OCW site made it possible to transfer the modules from one platform to the other in a relatively straightforward way.

6.6 What were the pressures/incentives to implementing UNI-B's OCW initiative and the main impediments to its development?

Even though the idea of launching UNI-B's OCW did not emerge from the highest body of governance at that university, the decision was ultimately a response to the advocacy action of Universia. Indeed, the proposal that the e-Learning Centre submitted to UNI-B's call for innovative teaching projects contained a list of expected benefits that had been directly excerpted from Universia's documents (Universia n.d.1). In particular, the proposal stressed four main goals that would be pursued by means of the OCW initiative:

1. To encourage innovation and the improvement of teaching materials at UNI-B.
2. To favour the uptake of ICTs by UNI-B's faculty members.

3. To enhance the sharing of experiences, resources and examples of best practice with other people involved in the provision of OCW and the Higher Education community at a global scale.
4. To boost the impact of UNI-B, both nationally and internationally, raising its profile.

The last of these arguments was interpreted not only in terms of branding, but also as a marketing instrument that could add to the recruitment of prospective students. As noted by one of the e-Learning Centre's leaders:

You attract students not only because of your name, but also because of what you do. In the case of research you know what you will find at UNI-B because information is publicly available. However, in the case of teaching it is usually less clear. And I say, well, the way to make this more visible is to make what is produced here available via the Internet. I think this is the point that we stress the most. (Participant B103 – University leader / Senior)

Such a notion not only presumes that UNI-B's lecturers tend to be engaged in the creation of valuable teaching materials, but also that the OCW initiative has the potential to increase the quality of the educational resources. The logics behind that argument, as stated in the project, is that academics would feel obliged to apply an extra layer of revisions and polishing, given that their materials would be available not only to their students, but also to their colleagues and virtually to anyone with an interest in the topic.

Besides the instrumental dimension of the initiative in terms of potential benefits to the university, one of the participants also stressed that the idea of making educational content available to the public is to some extent in line with the core obligations of universities.

I think that everything that facilitates that anyone in the world has access to culture is one of the duties of the university ... to increase the information and knowledge of those who approach us and to spread the knowledge that university possesses across the

entire society ... it doesn't make sense that I get paid and then I don't share with society what I discover, what I do. (Participant B101 – Top university leader / Senior)

The fact that other Spanish universities had embarked before on the provision of OCW materials influenced the decision of developing UNI-B's OCW initiative. On the one hand, seeing that other universities in Spain had been able to persuade some of their faculty members to participate in the provision of OCW materials made it look like a feasible endeavour. On the other hand, after becoming mainstream among Spanish universities, not having an OCW platform could be perceived as a failure to follow 'cutting edge' trends:

I think that it is also a bit like a cascade effect. When you see someone else doing it you say: "ah, that's all right to do that, we'll do it too." Or because you get some complaints: "If X University is doing it, why is that you are not doing it? (Participant B101 – Top university leader / Senior)

Beyond the influence of Universia as an international network, the end-of-award report elaborated by the team in charge of launching UNI-B's OCW also referred to other relevant factors operating at a regional scale. In particular, the report aligned UNI-B's OCW initiative with some of the recommendations that had been included in an ICT roadmap commissioned by the association of public universities of Region X. The roadmap explicitly recommended universities to foster the release of OER.

In spite of all those considerations, the reasons why UNI-B had decided to launch an OCW site and the expectations around it were largely unknown to the interviewees. When OCW authors at UNI-B were asked about the motivations of their university to get involved in the release of OCW content they claimed not to have a clear idea about the rationale and expectations. However, when invited to guess about the main potential motivations they stressed external pressures as the

most likely reason. As exemplified by the words of one of the authors that participated in the elaboration of the initial project:

This is something you should ask the coordinator of the project. But I think it's to do with politics: "since everyone else is doing this thing we have to do it as well or at least have something [to show off]." (Participant B406 – Mid-career / OER author)

Some interviewees also pointed to the role of the Santander Bank, through Universia, and noted that there might be some vested interests at stake. In any case, the overall impression of participants is that the OCW did not play a key role within UNI-B's strategic orientation. In this regard, one of the interviewees pointed to the overall lack of incentives for Spanish universities to be actually engaged in outreach activities, mainly due to the nature of funding mechanisms.

Unlike in other countries, [in Spain] outreach projects or other actions aimed at raising the profile of universities do not have an impact on their budget [...] So it remains at the discursive level. It is like saying: "we have to be great and we have to improve." Who would disagree? "In the future... new technologies! education!... we have to reach everyone, make ourselves known." At the discursive level everything is OK, but then in practice there are not any specific actions. (Participant B404 – Senior / OCW author)

6.7 What were the pressures or incentives and impediments to participation in UNI-B's OCW initiative?

The first four modules available at UNI-B's OCW site were created by a reduced group of faculty members approached by the e-Learning Centre before the initial project was outlined. Indeed, the names of those scholars were included in the application for funding submitted to the Innovative Teaching Unit. Subsequently, once the platform was already in operation, the e-Learning Centre approached other faculty members who were considered to be likely to show interest in the initiative. In particular the focus was on those scholars who were applying a blended-learning approach in their classes and, thus, had already created and selected a considerable amount of online teaching materials for their students.

When we set it [the OCW initiative] up what we did is to get in touch with those faculty members who were offering any of the 100 blended-learning modules. There were 50 scholars or so, because each of them usually had about two modules. We contacted most of them, I don't remember now if we sent emails to all of them. We asked who was interested in contributing to the [OCW] site with their modules. Then 7 or 8 replied and then they didn't have to do anything else. We simply made a copy of their modules, a duplicate in the [OCW] platform. They only had to give us permission. (Participant B104 – University leader / Mid-career).

After the initial phase, the engagement strategy relied exclusively on awareness-raising activities aimed at the entire community of scholars, namely by means of short workshops. Unlike other universities, such as UNI-F and UNI-G, scholars contributing to UNI-B's OCW initiative were not provided with any certificate of participation, which might be a relatively valuable asset to those who were interested in undergoing an accreditation process.

Taking into account the overall lack of direct incentives, university leaders tended to explain the involvement of scholars mainly in terms of altruism and some sort of inner satisfaction deriving from the fact of believing that they were contributing to the common good by making their teaching materials publicly available. Nevertheless, according to university leaders this selfless work may also benefit authors in terms of visibility and reputation.

We've been very lucky because everyone who participated got involved because it was of interest to them, because of the satisfaction of making their materials available ... We found that they are quite altruistic, as they make their knowledge open because they want to show that their teaching is of high quality ... This [participation] also benefits them quite often in an indirect way ... I think that it is also like trying to gain recognition, like saying: "look, I work and I work well." (Participant B103 – University leader / Senior).

According to some of those interviewees, e-learning was perceived by many scholars as a lazy choice, a teaching modality that requires less effort than traditional classroom-based education:

I would like to see the end of this typical response [against e-learning] in the university:
- *"The thing is that you don't want to give lectures!."*
- *"Hey!, I teach with a different technology. You use the technology of lecturing and the*

blackboard, which is fantastic, amazing, but I use a different technology.” (Participant B101 – Top university leader / Senior)

In this context of apparent undervaluation of e-learning practices, some scholars who were already engaged in such modality of teaching could see the idea of making their educational resources visible to everyone as an opportunity to make a statement about their level of professional commitment:

Many times you will say to the department, the institution: “hey, look, I am working! The fact that I am not in a classroom from 10.00 to 12.00 doesn’t mean that I am not capable of having good materials, as decent or better [than those created by other people]. (Participant B103 – University leader / Senior)

Another aspect that university leaders presented as a clear advantage when trying to persuade faculty members to become OCW authors was to do with the potential for preventing plagiarism by making materials publicly available.

Even though the content is open, you’re registering it. Thus, plagiarism is being prevented. I would put more emphasis on plagiarism; it’s a strong reason. At first glance people say: “no, no, no.” But then they think about it and say: “it’s true, although I am giving open access [to my materials] I am saying that it’s me, that this is mine.” So you have this security, this guarantee. If you reserve it just to yourself and then someone re-uses it without [giving you credit] then it can be much worse. Conversely, if you open it, if you release it, if you make it known... then it has a positive impact, it gives you visibility and you’re contributing to something that is socially good. (Participant B102 – University leader / Mid-career / OCW Author).

Although an economic reward was given to authors in 2010, it cannot be considered as an incentive aimed at fostering participation. Rather than being based on a call open to prospective authors, the jury looked at modules that were already available at both the VLE and the OCW. Therefore, while the contest was intended to reward participation in the OCW site, the potential of the prizes to attract new contributors was rather limited due to both its post hoc nature and the fact that it was not accompanied by the announcement of any future edition.

The contest, as it was the first and only one, was not advertised [in advance]. We didn’t say: “there will be a contest.” We directly looked at the modules that were already available, we looked at some 100 online modules and saw which ones were the best

ones, which ones had the highest number of visits... apart from the design we took into account the number of visits. (Participant B104 – University leader / Mid-career).

Most of the interviewees who had contributed to UNI-B's OCW reported that the main reason they got involved in the project was because they had been personally approached by some of the university leaders at the e-Learning Centre, who either asked them to attend the OER workshop or simply requested their collaboration in the initiative.

I am friends with Participant B104 and it is because of him [that I got involved in the OCW project]. [...] I have always got along with him and I have also been interested in these kinds of things. I was aware that the MIT had launched this thing and I talked to him, he told me that the university was in need of open courses and I told him: "look, we already have these open materials so what we're going to do is to publish something there [i.e. at UNI-B's OCW site]. (Participant B403 – Senior / OCW author)

It is worth noting that only one of the interviewees approached the e-Learning Centre, aiming to get information about how to disseminate educational content. As a result of such interest she ended up releasing materials through UNI-B's OCW.

We wanted to disseminate some materials, namely learning resources to the users of a software application that we had developed. We asked around and people at the e-Learning Centre told us that this was the best way of reaching a wide audience. (Participant B402 – Senior / OCW author)

As for those interviewees who had not contributed to UNI-B's OCW initiative, they were not aware that it existed or had very little information about it. While they were very interested in making their educational resources available to the public, they had found other ways of doing so, namely via UNI-B's repository or other external services). Interestingly enough, one of them had contributed to the OCW platform of another university in Region X, but he had not heard of the UNI-B's OCW initiative at all.

Overall, the interviewees were keen on reaching a wider audience and most of them felt that making their materials publicly available was part of their role as employees of a public university. According to one of the most senior interviewees, the Internet had enabled the development of such role, as it provided them with new ways of engaging in outreach activities and reaching non-academic audiences.

We are very much focused on using the Internet for outreach purposes, offering basic, general information that can be of interest to many people, not just to students in our area, so the topic, some of the things that we do become of interest to a lot of people.
(Participant B401 – Senior / OER author)

Only one of the interviewees had also involved students in the creation of OER. That is, for him it was not just about releasing on the public Web the materials that he, as a teacher, had created for his students, but also about involving them in an outreach initiative.

The idea was: "I feel tired of getting essays that remain in a drawer. I want you to publish them!" I prompt them [i.e. students] to produce OER as a result of their work. Under Creative Commons [...] They have blogs and release their work as open content.
(Participant B405 – Mid-career / OER author)

Despite the perceived benefits of releasing teaching materials as OCW modules, the reality is that the levels of participation in UNI-B's OCW had been extraordinarily low. But before addressing the factors that may be hindering the release of educational materials as OER or publicly available resources, it is important to look at the extent to which the creation of such materials was being recognised and rewarded as part of the professional activity of university teachers. In this respect, interviewees tended to think that spending time on the development of materials was worthless in terms of career development. Furthermore, they considered that teaching commitments in general were undervalued as compared to research. As noted by one of the interviewees who was based at a computer science department:

I think that it is not being taken into account [...] We [faculty members] feel that at the end of the day the only thing that counts is whether you have JCR articles, that's all. Whether you've been a good teacher, you have created materials, etc. or not, I think that it is barely taken into account. (Participant B402 – Senior / OCW author).

Furthermore, some interviewees felt that their excessive level of commitment to teaching and the creation of non-standard scholarly publications (e.g. blogs, webs, etc.) had had a rather negative impact on their opportunities for career development. As pointed out by a senior humanities scholar:

I have been very much into it [i.e. the creation of educational resources] but I have neglected to publish in high impact journals. [...] I haven't been able to benefit from my online presence in terms of [performance] assessment. Perhaps it helps me to be known more widely [...] Now in Spain we senior scholars are required to have a good and current research track record, and I think it is fair. Otherwise they increase your teaching workload, it is a way of incentivizing research. The thing is that some of us who do research and are involved in the creation of these types of content [other than journal articles] are not rewarded. At the same time, if we don't care much about it, if you have a good article but do not publish it in a high impact journal, [then] at the end of the day you are not rewarded like others. (Participant B407 – Senior / OER author)

University leaders attributed the lack of participation in UNI-B's initiative to three main different types of factors: 1) errors in the design of effective engagement strategies, 2) difficulties in making the initiative known among faculty members, and 3) the incompatibility of OER creation with prevailing teaching practices and academic cultures.

In this regard, the discourse of some university leaders was characterised by an apologetic tone, as they blamed themselves for the lack of adequate incentive mechanisms and more effective communication actions:

I don't know. We have tried... we are trying to work on the OCW initiative with varying degrees of success. In principle I will blame myself. In principle perhaps we don't know how to communicate to faculty members its relevance, because the response hasn't been as high or dynamic as I was expecting. Probably there is no tradition, but I think that the fault is mine. I don't want to think of any other hypothesis. (Participant B 101)

Interestingly enough, opinions were divided among UNI-B's leaders with regard to the suitability of economic incentives as a way of encouraging

involvement in the creation of OER. Two of them regretted that UNI-B had not been able to reserve funds in order to encourage participation by means of direct grants, unlike some other universities. In any case, they considered that securing money for this purpose was beyond their capacity:

Well, it would be great to have economic incentives, but I'm afraid that it's not possible in times of crisis [...] it would be really helpful to have institutional support in order to reward scholars. (Participant B102 – University Leader / Mid-career / OCW Author)

Conversely, the two most senior university leaders that I interviewed at UNI-B thought that the uptake of these kinds of practices should not be led by economic rewards:

I believe that these kinds of things must be done out of conviction, rather than because of external incentives. I believe that if tomorrow you're told that you must do one of these [OCW modules] because you will win a contest... it's ok, you do it. But it should be on your own initiative. At the end of the day the result is the same, but the conviction to keep this up and improve it is not the same. Once you get the award you say "I'll stop now and will do something else." ... So I believe that it's better to change the culture and tell them that it's important, not offering economic rewards but changing the culture. (Participant B103 – University leader / Senior)

I thought that it would be enough of an incentive the possibility of participating in this. It is a unique opportunity as I saw it ... I refuse having to pay because... if you release the materials of your module as open content you'll get a new computer, an iPad, 500 €... I think that this is paying for joining the current trend. So perhaps it would be better if just those who can swim join it and those who do not stay on the island. You cannot force people to pass through a crosswalk if they don't want to do so. (Participant B101 – Top university leader / Senior)

One of the university leaders also considered the fact that they were not providing OCW authors with any certificate of participation as an important barrier that could explain the low level of engagement:

We could do the certificate thing, like other universities do. We could talk to the Pro-Vice-Chancellors of Academic Programmes or Teaching and ask them to issue certificates. And probably if people got a certificate we would see more faculty members interested in contributing. (Participant B104 – University leader / Mid-career)

However, according to this informant the biggest problem behind the overall lack of participation is that most scholars at UNI-B had not even heard of the OCW

initiative. Just like in the case of the engagement strategies, university leaders thought of the lack of an effective communication strategy as their own failure. That is, people in charge of running the initiative felt as if they could have done more to circulate information about the OCW initiative and OER in general more widely across UNI-B's community.

If you organise a few workshops and then you spend a whole year before circulating anything or organising another workshop then it is normal for people to think that it's dead. Dissemination is very important and probably those other universities [that have been more successful in finding OCW authors] have done so. I must recognise that we haven't done enough publicity. Not just workshops, but sending emails, advertising it on the homepage of the university's web site. If we included some modules lately it is just because of word of mouth ... If we had some award or economic incentive we would probably have more [modules], but the main thing would be to advertise it more widely. In this case I will take the blame as the responsible person. (Participant B104 – University leader / Mid-career)

Beyond incentive policies and dissemination strategies, which are elements that can be controlled by the e-Learning Centre at least to some extent, university leaders also noted that the opportunities for faculty members to engage in the provision of OCW modules were largely constrained by certain practices, organisational dynamics and cultural aspects that affect teaching at several levels. For instance, the stream of policy changes faced by the higher education system in Spain over the last few years was presented as a source of discomfort that clearly prevented scholars from engaging in the production of original teaching materials for their teaching, given that many of them were being forced to switch almost every year the modules that they teach, mainly due to recurrent changes in academic programmes:

This is a bad time, I guess that you have already been told this at other places. Not [just] because of the economic situation, that yes, is really bad, but also because of the Bologna process, which has obliged us to be changing constantly: from the old degrees to the new undergraduate, and the graduate programmes, and they are saying that it will change again. So, in this context, faculty members feel uneasy. Because they say: "let's see, I'm teaching an Anatomy class to a Fine Arts group and it turns out that tomorrow this module doesn't exist anymore. What shall I do? I now have to teach another module, but not that one. So I have to re-adapt myself." And this [promotes a]

feeling of not having polished materials or consolidated modules, but having to switch because of changes in the academic plans ... Scholars say: "well, let's see what I am teaching tomorrow and then I'll see if I am able to create content." ... This is a bit like research, you do research drawing on knowledge that you acquire over time. Teaching must be like that. You cannot start a new module today and have outstanding materials [straightaway]. That's not possible. What you have to transmit is your knowledge and experience [built up] over years. (Participant B103 – University leader / Senior)

Another factor that could be hindering participation, according to university leaders in charge of UNI-B's OCW, is to do with the way scholars have traditionally used educational materials in their teaching. As noted by some of them, most scholars tend to rely on a substantial amount of content that has not been created by them – whether it is extracted from scholarly sources or from other kinds of sources. While usually it is not problematic at all to present such content in private teaching spaces (e.g. the classroom or even in the context of a VLE that can be accessed just by enrolled students), the opportunities to use these kinds of content at open platforms are much more limited due to the authors' rights legislation currently in force. As a matter of fact, one of the university leaders that participated in the study confessed that this was the main reason why he himself had not contributed with any module to UNI-B OCW in spite of being in charge of it:

The thing is that – I guess you have already heard of this – the main problem, besides the lack of publicity, is the same hurdle that I find in my course. I would make all my content available under open access without any problem, but we use many materials in our teaching that do not belong to us. We have pictures that we don't know where they come from, because you copy them from a web site. For instance, if I am explaining the structure of a computer and I see the diagram of a microprocessor at the web site of [a manufacturer] I copy it and insert it in my slides. This is a very common practice that all scholars do. That picture has restrictions and you should ask for permission. So you cannot release a module as open content under a Creative Commons licence when it is full of content that is not originally yours. This is a barrier that can be hardly overcome. (Participant B104 – University leader / Mid-career)

Thus, given that OCW initiatives are supposed to require contributors to supply substantial amounts of content (i.e. covering the entire modules they teach

to their students), such a model of OER provision does not seem to be particularly amenable to implementation in a context such as the one described above.

Apart from deeply entrenched customs and routines with regard to the creation and use of original materials in the context of campus-based teaching, some of the university leaders also talked about certain barriers that relate not only to the release of OER, but to the uptake of educational technologies and e-learning practices at large. As reported by one of the university leaders directing the e-Learning Centre, many people realise that engaging in e-learning usually leads to an increase in the workload that is not compensated with any reduction of the number of teaching hours:

they [faculty members] tell you: "I have more work when I teach online." (Participant B401 – Senior / OER author)

Indeed, even though most interviewees released content that they had created as part of their professional activity, authors had to put in an extra effort in the case of OCW modules.

The thing is that OCW does not require [creating] just a textbook, some notes. It also involves creating exercises, self-evaluation activities, etc. [...] Developing self-evaluation questionnaires requires time too. (Participant B403 – Senior / OCW author)

Another of the university leaders stressed that it was quite far from realistic to think that UNI-B would be willing to compensate scholars for any potential increase in their workload deriving from the engagement in online teaching:

The truth is that all this issue is quite complicated at this university. For example, the virtualization of modules... people have worked, a lot, to convert their modules to the blended-learning model. The only reward that they have, that they had and that they will have is a piece of paper ... But the university will never say, I can really see it: "I will reduce you a credit, or three, or seven..." No, it won't be recognised as teaching workload. (Participant B102 – University Leader / Mid-career / OCW Author)

At a different level, the act of making educational resources publicly available was described as an action that is at odds with the prevailing academic culture. In

particular, competition and power struggles among scholars may fuel some level of suspicion that hinders the sharing of educational resources:

When trying to persuade a faculty member to release her materials as OER, one of the main sources of reluctance is to do with their very own home [department]. That is, perhaps she has some conflict with a colleague and the fact of sharing her slides would help her colleague. Thus, to avoid doing a favour... [she would think] "if I teach a course over four years and then I stop and someone else takes it, and I don't like him, then I won't give him my materials. I don't have to give away my work." And this exists at a departmental level. (Participant B102 – University Leader / Mid-career / OCW Author).

Most of the creators of content that I interviewed at UNI-B indicated that the idea of making teaching aids available to people other than one's own students was not part of the prevailing academic culture. On the one hand, some faculty members might perceive such practices as a way of exposing themselves to the risk of being plagiarised. On the other hand, some faculty members may be reluctant to disclose materials that are perhaps not quite polished.

There are basically two sources of reluctance: fear to be robbed and fear of naming and shaming because of the quality of teaching. We are not assessed as teachers. There is someone who asks students to complete a questionnaire at the end of the term, but nobody observes our teaching. If you make your materials publicly available, it is like teaching in public. Generally speaking, lecturers in Spain are not used to this. (Participant B404 – Senior / OCW author)

One of the most senior interviewees reported having problems releasing some of his works as open content because of the reluctance of his co-authors.

I was the coordinator, the main author of that guide. I did it with various colleagues. My idea was to make it totally open. However, some of them were a little bit suspicious. I had problems... it cannot be downloaded easily because it is somehow protected. I was against that, but my colleagues wanted it that way. Depending on who your collaborators are, your work is more open or less, it is 100% downloadable or it is more complicated to download it. (Participant B401 – Senior / OER author)

Taking into account the overall lack of incentives at UNI-B, those who were already concerned with the philosophical principles underlying the OER movement as well as those wishing to reach a wider audience seemed to be the only faculty members likely to get involved in the creation of OCW modules or

release of other types of OER. In this regard, it is worth mentioning that all the faculty members that participated in the study were deeply involved in innovative teaching practices and the use of educational technologies at large, which were indeed regarded as a key element in their professional identities. In this regard, they saw themselves as outliers, as compared to most of their peers.

In addition, most of the academics recruited in this study, because of their high level of involvement, were also senior scholars or at least have relatively consolidated positions. This factor means that they had more freedom to spend time in the creation of educational materials than their colleagues who were still trying to secure a permanent position. Senior scholars were in a better position to contribute to OER initiatives not only because they had had more time to create teaching materials over many years in the profession, but also because young scholars were forced to prioritise the publication of papers in scientific journals over other activities, should they want to advance their careers as academics.

As for those mid-career scholars involved in the creation of OER that were interviewed at UNI-B, it should be noted that they were also exposed to other sources of pressure or motivation. For instance, three of them were somehow involved in the creation or subsequent management of the OCW project, while another interviewee who was very engaged in the release of OER – though not OCW modules – had taken OER as a key object of study in its own right.

According to some interviewees, scholars in certain disciplines might be more likely to be affected by some barriers than others. As perceived by the technician in charge of providing OCW authors with assistance when adapting their materials to the OCW site:

In science degrees, in things like mathematics and these kinds of studies it is much easier for scholars to have their own content. [Whereas] people in the humanities and things like fine arts rely all the time on copyrighted illustrations and quotes of books ... to people in exact sciences and maths it is easier to generate their own content, they change the formulas or generate their own graphs ... it is easier to generate their own content and license them under Creative Commons than in other kinds of disciplines in the humanities and social sciences, which are more based on references, quotes from books, etc. (Participant B302 – Technician).

Generally speaking, interviewees at social science and humanities departments considered that the creation of complex materials and the use of educational technologies were rather unusual among their peers. By contrast, interviewees at science departments saw the creation of highly elaborated teaching materials as something core to teaching practices in their disciplines.

Paradoxically, the number of social science modules available at UNI-B's OCW site is higher than the number of modules in the categories of science, health sciences and engineering combined. In terms of variation across disciplines, one of the university leaders that participated in the study considered that the main disciplinary gap was taking place between 'old' and 'new' areas of scholarship. In his view, people working in the youngest areas were more prone to engage in the release of open content than those working on older disciplines:

I believe that people in the classical disciplines, putting 'classical' between inverted commas, there is more reluctance to release content under open access. I think that it is more typical of more modern studies. I mean that the level of availability of teaching resources in degrees such as computer science, educational sciences or some engineering degrees is significantly higher than in classical studies. (Participant B101 – Top university leader / Senior)

Nevertheless, such impressions were not grounded on any empirical data.

6.8 To what extent and in what ways did UNI-B foster the development of OER literacy?

Coinciding with the launch of the site, the e-Learning Centre offered a series of workshops aimed at raising awareness of the project and, ultimately, finding

new potential contributors. They consisted of an introductory session – covering the philosophical, historical and legal dimensions of OCW – and a more practical session that focused on the process of content creation. In the following years the workshop was offered again as part of the e-Learning Centre's annual training programme.

UNI-B's academics attending this type of workshop were able to obtain a certificate that could be of use in the context of ANECA's evaluations. In this regard, while attending the OER workshop might be worthwhile for early-career academics, getting involved in the actual development of OCW content was less likely to be of interest, at least in terms of career development opportunities. Not without some bitterness, one of the university leaders personally involved in the delivery of the training program confessed that most of the people attending the workshop were not actually interested in creating OCW content or learning about the OER movement, but only in getting the certificate.

The only motivation for people attending the workshops was not to create a[n OCW] module, because out of 40 just one or two did so. Their main motivation was to attend the workshop in order to get a certificate of attendance useful for ANECA's accreditation. (Participant B104 – University leader / Mid-career).

Those workshops were virtually the only way of advertising the OCW initiative among UNI-B's scholars. Given that such training activities were especially relevant just to early career scholars, those who were actively seeking to develop their careers and gain a more consolidated position, senior academics were probably less likely to become aware of the existence of the OCW initiative. As one of the technicians involved in the delivery of the workshops noted:

If we look at the age of people attending the workshops the average is quite young, I believe around thirty-something. You always have exceptions. There are professors who have attended the workshop, but usually it is young people. I also have to say that some groups send just one member on their behalf, perhaps the youngest members. (Participant B302 – Technician)

6.9 To what extent did the release of online materials on the public Web redefine interactions between scholars and external actors?

The idea of cutting through the boundaries of higher education institutions, so new and wider audiences can be reached, is core to any OCW initiative and, more generally, to the whole notion of OER. In this regard, it is worth looking at how the interaction between scholars and external audiences unfold and the extent to which this type of public engagement is monitored or assessed at UNI-B.

Google Analytics was deployed to collect quantitative data about the use of UNI-B's OCW modules. Likewise, the e-Learning Centre had access to data supplied by the company Nielsen NetRatings on traffic to the OCW sites of all the members of the Universia OCW Consortium. Nevertheless, the data was not analysed on a regular basis by any member of the e-Learning Centre in order to monitor the evolution of UNI-B's OCW initiative. Furthermore, there was no protocol in place to provide OCW authors with data about the level of use of their modules.

According to one of the members of the board of directors of the e-Learning Centre, due to the lack of resources it was not possible to undertake a systematic assessment of impact.

There is a lot of work to do [in this respect], it is still at a very early stage. You have to create a very powerful infrastructure in order to monitor what is going on with the things that you have created. [We have to do so many things already] and it would be like a new area on its own, [it would require] a group of people working exclusively to set this up with a certain level... This is something that requires a lot of effort, dedication and resources. (Participant B103 – University leader / Senior)

As for OER authors, some of them reported having being approached occasionally by external users wishing to thank them for releasing the materials or to ask questions about the content. In any case, they claimed not to have an overall understanding of the actual impact of their work and the extent to which it was being used. As noted by one of the interviewees who had not released any OCW

module but was actively involved in the release of educational resources via UNI-B's online repository, while the Internet had helped him to reach a wider audience it had also obscured his knowledge about the audiences engaged with his work:

In the past, it was not that easy to disseminate the works that you had published [...] Why? Because journals were available just at libraries, at some of them but not all. At that time it was customary to request offprints [directly from authors]. So you could estimate the level of interest that your work had generated by taking into account such requests. Let's say that you had first-hand information. Now, with this new thing [i.e. the Internet] that kind of information is lost. Because there are people who say to you: "I have seen your guide and I really liked it, it was very useful." But the vast majority do not give you any comments, so you don't know to what extent it is having an impact. Of course you get this from students, because you know them and they are obliged to tell you something. But, for instance in the case of the field guide of Coast City, I don't know who the users are, what type of use they make of it, why they are interested in it... Because they don't tell you. This aspect is a little bit blurred, as there isn't a personal relationship like there used to be in the past. Back in those days your audience was much more limited, dissemination was tiny. Now your audience is wider, there is a lot of dissemination, but in many cases you don't actually know why they want that information, how they are using it and whether they actually like it or not. I think this is impossible to be estimated, unless you know them or someone gets in touch with you. (Participant B401 – Senior / OER author)

6.10 Chapter summary

In this chapter I have examined the genesis and development of an OCW initiative that had only achieved very modest levels of participation among faculty members. After a few years in operation it turned nearly inactive, given that only two new modules were archived on the site between 2011 and 2013.

Whereas there is a centre specifically devoted to facilitating the uptake and use of educational technologies at UNI-B, which was in charge of its OCW initiative, the amount of resources allocated to the initiative was exiguous. In this regard, it may be argued that the provision of OCW content is disconnected from the overall strategic orientation of UNI-B.

Unlike other universities, the launch of UNI-B's OCW initiative was not accompanied by any scheme aimed at providing incentives for participation. Moreover, while the first authors had access to technical support in the

development of their OCW materials, authors were required to adopt a do-it-yourself approach in subsequent years. The only action aimed at encouraging participation was a series of workshops on OER. However, participation in such workshops rarely led to the involvement in the creation of OCW modules.

The lack of incentives on a local scale along with an overwhelming range of competing priorities that are defined by frameworks operating at a state level explain the reduced degrees of participation. Moreover, the participants in the study stressed that most academics at UNI-B were not even aware of the existence of this initiative, mainly due to the lack of any communication strategy.

Furthermore, it is important to take into account that those academics who are particularly interested in making their educational resources available on the public Web have at hand other services that may be more flexible and suitable to their particular needs, whether supported by UNI-B (e.g. an online repository, personal web pages, etc.) or by external providers (e.g. YouTube, Academia.edu, SlideShare, etc.).

7 Moderate levels of involvement in the provision of OCW contents at a medium-size university: the UNI-F case

The second empirical chapter focuses on UNI-F, a medium-sized university founded in the 20th century who launched an OCW initiative that, compared to the other two universities, has attracted a moderate level of participation. Unlike UNI-B, this university accompanied the launch of its OCW initiative with mechanisms aimed at incentivising participation. This chapter follows the same structure as the previous one, which is directly informed by the STIN strategy.

7.1 Introduction to the setting

UNI-F is a medium-sized Spanish university – considerably smaller than the two other universities covered in this study – that was founded in the late 20th Century. According to data supplied by the Regional Government (2013), there were about 20,000 students at UNI-F in the academic year 2012-13. About 1,600 faculty members worked at UNI-F, nearly half of whom are civil service staff. The other half work under a contract, whether permanent or temporary. There is a gender gap that is particularly noticeable among civil service academic staff, where almost 70% are males. The higher the level of seniority among scholars, the smaller the proportion of women. Indeed, less than 15% of professors are females.

As for the online presence of UNI-F, the *Ranking Web of Universities* (CSIC - Cybermetrics Lab 2013) indicates that its web domain is in Spain's top 30 and the world's top 700. Apart from UNI-F's main portal, there are various platforms under its domain that are specifically aimed at archiving and making educational resources available to the public. Most notably, UNI-F has both an OCW site and a digital repository, which contains research publications, learning objects and other

kinds of institutional documents. Under UNI-F's domain there is also an online video collection, though it cannot be regarded as an OER initiative given that all the rights are reserved.

Besides the above-mentioned web sites, UNI-F also relies on several content-sharing services powered by external providers. Most notably, there is an official YouTube channel of UNI-F, which is indexed in the YouTube EDU directory.⁶⁴ However, those videos do not qualify as OER, as they are distributed under the Standard YouTube Licence⁶⁵ rather than Creative Commons.

UNI-F was one of the first two dozen Spanish universities that joined the OCW Universia Consortium at an early stage (Universia 2007). UNI-F's OCW site was launched in 2008 and over the following years it gradually incorporated about 40 modules authored by some 50 faculty members.

The structure of the modules available at UNI-F's OCW site is in general consistent with specifications of the OCW model, as they contain all the standard sections (i.e. syllabus, learning materials, self-evaluation activities, references, etc.). However, the actual nature of the content is rather heterogeneous. In particular, a broad distinction might be established between 1) those courses that primarily consist of slides and 2) those courses that offer more elaborate materials – such as multimedia learning objects, extended texts or even full handbooks.

Following the OCW model, all the materials available at UNI-F's OCW site are released under a Creative Commons licence. In particular, the entire site has a BY-NC-SA Creative Commons licence, which allows users to re-use materials and

⁶⁴ https://www.youtube.com/education_channels

⁶⁵ <https://www.youtube.com/static?gl=US&template=terms>

produce derivative works, as long as they are not used for commercial purposes and provided the identity of the original author/s is credited.

The modules available at UNI-B's OCW site are classified into five broad knowledge domains: Social Sciences, Arts & Humanities, Health & Life Sciences, Sciences, and Engineering & Architecture.

As for UNI-F's online repository, it hosts a diverse range of digital objects, including learning materials and official documents, although the emphasis is on the dissemination of research publications – journals, articles, thesis, etc. In addition, the repository hosts a copy of each of the modules released via UNI-F's OCW site. A few scholars also used the repository to self-archive other kinds of educational resources (i.e. smaller than entire modules) and make them available to the public. Whereas contributors are recommended to license their materials under Creative Commons, as stated on the site, there are materials fully protected by Copyright.

OCW authors at UNI-F may be grouped into two broad categories, as defined by the amount and nature of their modules. On the one hand, there were academics who had contributed with a relatively high number of OCW modules and tended to base their works on slides that they had devised as lecturing aids. On the other hand, there were scholars who had released highly elaborated or extensive materials and, in general, did contribute with a lower number of modules.

7.2 Levels of participation in UNI-F's OCW initiative

Fifty-nine scholars had been involved in the creation of OCW modules at UNI-F. Taking into account the total number of modules available at its OCW site as well as the proportion of scholars involved in the initiative (3%), it may be argued that

the overall level of activity was moderate. As shown in Table 12, about five years after the site was launched there were 37 modules available, most of which had been released over the first three years of activity.

Table 12 – Evolution in the number of courses available at UNI-F's OCW site (cumulative frequencies)

Knowledge domains	Dec 2008	Feb 2009	Mar 2010	Nov 2011	Nov 2012	Nov 2013
Health sciences	0	0	4	5	5	5
Social Sciences & Law	1	3	4	12	14	16
Science	1	3	3	4	5	6
Arts & Humanities	0	1	3	7	7	7
Engineering	0	2	2	2	2	3
Total	2	9	16	30	32	37

Source: Table elaborated with data extracted from the Internet Archive Wayback Machine (<http://archive.org/web/web.php>).

As implied by the low proportion of faculty members who had contributed to the initiative at the time when I conducted the study, the creation of OCW modules at UNI-F is a rather minority practice. Further, the majority of faculty members contributing to it had participated in the development of just one course, so it cannot be regarded as a recurrent practice either. Indeed only 8% of the authors (n = 5) had contributed with more than one module.

With regard to co-authorship dynamics, the development of OCW courses at UNI-F is typically a collective endeavour. To be more precise, about 57% of the courses were authored by a group of scholars. Among those modules created by more than one author, the average number of co-authors per course was 4, while both the median and the mode were 3. The maximum number of authors per course was 11. Collaboration was more frequent among Science, Health and Engineering scholars.

7.3 Who were the key actors involved in UNI-F's OCW initiative?

The advocacy efforts of Universia as a promoter of the Ibero American OCW Consortium worked as a key driver to the launch of UNI-F's OCW initiative. In this regard, the decision-making process behind the initiative took place at UNI-F's Governing Board. The synergies between the two organisations are illustrated by the fact that UNI-F's vice-chancellor joined the board of directors of Universia Spain after the launch of the initiative.

One of the pro-vice-chancellors was charged with the task of leading the initiative. It should be noted that none of the university leaders responsible for the launch of UNI-F's OCW initiative were still involved in it at the time when I conducted the study, given that the entire board changed after the elections in 2011. Consequently, I approached both former and current university leaders during the fieldwork stage.

Under the direct supervision of the above-mentioned pro-vice-chancellor, UNI-F's Open Source Unit was responsible for setting into motion its OCW platform. The Open Source Unit was a rather small unit created as early as 2003. It was formed by about four faculty members from the Computer Science Department and two technicians from the IT Services, who also had other responsibilities at other units. Due to the lack of human resources, the Open Source Unit relied heavily on the work of interns. For instance, a student working under a small grant was in charge of customising Moodle with the aim of using it as a content management system powering UNI-F's OCW site. Furthermore, other organisational units such as the Innovative Teaching Unit and UNI-F's Library subsequently took charge of administrative and technical processes relevant to the OCW initiative.

Faculty members wishing to participate in UNI-F's OCW initiative were required to create a module at UNI-F's VLE and then complete an application form to be assessed by the Director of the Open Source Unit, the Director of the Innovative Teaching Unit and the Director for Educational Technology. The assessment was mainly restricted to formal and technical aspects, rather than scientific ones. According to the criteria guiding the process, the assessors had to take into consideration aspects such as the overall consistency of the course, its design, structure, pedagogical worth, etc. It is noteworthy that during the first years of the initiative the proposals were assessed by a larger committee that included also faculty members who had a high level of expertise in the creation of online educational content. However, the process was gradually simplified over the upcoming years.

Once the request was reviewed and approved, the module was transferred from UNI-F's VLE to the OCW site. Then, the authors might be required to do some technical adjustments or make amendments due to intellectual property issues. Nevertheless, it should be stressed that there was not an official process of intellectual property clearance. Therefore, contributors themselves were responsible for any potential infringement. Indeed, once authors had completed the potential modifications they were then required to sign a document confirming that all the materials complied with the author's rights legislation in force. One of the last steps involved officers at the library, who were in charge of assigning a DOI and archiving a copy of any OCW module at the online repository of the university.

According to the authors that I interviewed, they did not require any assistance or technical support from either IT or admin staff when developing or amending materials. Generally speaking, OER authors at UNI-F followed a do-it-

yourself approach, even when creating materials that required mastering some technical skills (e.g. video-recording) or even the development of advanced competences (e.g. programming interactive objects). However, they relied mainly on UNI-F's infrastructure when it comes to releasing their materials as OER.

Virtually none of the informants reported using external content-sharing services such as Youtube, Slideshare, etc. The only exception was a senior humanities scholar that said he used Academia.edu – a social networking site specifically aimed at the academic community – on a regular basis with the aim of making his work more visible. Apart from uploading his papers to that platform, it should be noticed that he also included in his profile the links to the courses hosted at UNI-F's OCW site in order to increase the traffic to that site. A young scholar also reported having a blog, but it was nearly inactive due to his other commitments.

7.4 What were the resource flows associated with the implementation and functioning of UNI-F's OCW initiative?

According to one of the former university leaders who had been in charge of launching its OCW initiative, the resources dedicated to the process of implementation were minimal. Economic resources were required in order to support the adaptation of UNI-F's VLE platform as well as to provide a series of incentives aimed at fostering participation. Such costs were covered by means of the operational funding assigned to the office of that university leader.

The OCW platform relied on the same technical solution deployed for UNI-F's VLE and it was not necessary to invest in any extra hardware equipment or software. However, it was necessary to customise the system powering the VLE, namely Moodle, in order to meet the requirements of an OCW platform. Due to the lack of human resources available to undertake such a task, the office of that

university leader allocated some funding to pay for the work of an intern. Interestingly, the former leader stated that, in hindsight, such an approach proved to be problematic.

We had some problems at the beginning, while developing the platform [...] We assigned too much responsibility to the intern, because we didn't have any member of the staff available to do the job. So it was delayed. Indeed there were [authors] who had finished their materials but they were not available to the public on the web site. (Participant F101 – Former top university leader / Senior)

As for incentive mechanisms, they were embedded into a pre-existing scheme originally devised with the aim of fostering the creation of online educational resources. Although the scheme was running in the academic years 2008-09 and 2009-10, it was discontinued when the new university governing board took office. After that participation was indirectly supported by the aids aimed at supporting innovative teaching practices.

7.5 What were the architectural choice points and the main rejected alternatives?

In 2003 UNI-F's governing board approved the creation of its first VLE, which was initially powered by a proprietary system. Only a couple of years after that, in 2005, the university leaders responsible for ICTs at UNI-F decided to switch to Moodle, an open source system.

EduCommons, the platform chosen by most universities in Spain (Borrás Gené 2010), was considered as a potential option in the first place. However, the team responsible for the implementation of UNI-F's OCW platform finally decided to use Moodle. By using the same system to power the VLE and the OCW site they were aiming to maximise the integration between the two platforms and reduce the amount of work associated with archiving and processing the content.

Since Moodle is designed to power VLEs, it was necessary to customise it in order to meet the needs of an OCW site.

It is a separate Moodle platform, because it has some particularities. It is customised with the aim of facilitating some operations, because once a module is released it cannot be modified. An ID, a handle, is associated to it. So it cannot be a regular Moodle. It is also customised for the work of people in charge of reviewing the content. (Participant F104 – University leader / Senior / OCW author)

It is also noteworthy that, as dictated by the norms that regulate the use of UNI-F's web site and VLE, OCW authors were advised to develop content based on open standards (e.g. PDF, Open Office files, etc.).

As for UNI-F's repository, it runs on a content management system known as DSpace, which is the predominant platform among university repositories in Spain (Anglada & Abadal 2010). The repository is managed by the Library Services.

7.6 What were the pressures/incentives to implementing UNI-F's OCW initiative and the main impediments to its development?

The decision to launch an OCW initiative at UNI-F was made at the highest level of governance within the university. Such a decision must be understood in the context of the overall relationship between UNI-F and Universia, as well as the Santander Group. Besides the expectations and goals associated with the very idea of launching an OCW initiative, cooperating with Universia was a strategic movement on its own. As noted by one of the university leaders involved in the initiative:

There is a key factor in the implementation [of the OCW project at UNI-F]: the on-going relationship between the university and the Santander Bank. The Vice-Chancellor was one of the members of Universia's board of directors and Santander, through Universia, wanted UNI-F to implement that initiative. [...] What Santander, Universia, was ultimately pursuing, I don't know. I can only speculate. (Participant F101 – Former top university leader / Senior).

Besides this circumstance, the idea of having an OCW initiative was of interest to UNI-F's governing board mainly because of branding and marketing opportunities:

The key value from an institutional point of view is to do with the image of teaching quality that might be associated with a university. Indeed, I think that this was the main rationale driving the MIT in this respect: "I will set up a structured showroom displaying what my faculty members do with their students, because tomorrow another [potential] student will see it and will say: 'I like this university, it offers really interesting things to its students'." (Participant F101 – Former top university leader / Senior)

By making educational materials available to the public universities were hoping to strengthen their image as public service providers, even though university leaders were not always too convinced of the potential of educational resources to actually facilitate learning processes of virtually anyone with access to the Internet:

In my capacity as a political decision-maker at that time I saw it as a positive initiative, in terms of tools and knowledge generation that we were to make available to our social environment, to our students. And somehow the meaning of a public university launching a platform where any citizen could, if he wished, learn something, which I doubt, but at least see educational products that the university makes and that are available to anyone. (Participant F101 – Former top university leader / Senior)

According to that view, those most likely to benefit from the use of such materials as learning resources were already inside higher education, whether scholars seeking inspiration and/or resources to be used in their teaching or students enrolled in similar modules looking for supplementary materials.

The goals officially assigned to UNI-F's OCW initiative were listed in the call for contributions launched with the aim of encouraging participation among faculty members. According to that call, there were five main goals associated with UNI-F's OCW initiative:

- To provide students with a wide range of resources designed to complement their learning.

- To foster outreach and society's access to knowledge.
- To promote the autonomy of faculty members with regard to the creation of digital content.
- To create a system of universal access to learning materials.
- To develop and foster a culture of collaboration around the generation of materials.

Only the second and fourth points seem to be directly concerned with principles that are intrinsic to the idea of opening up access to scholarly resources beyond the traditional boundaries of academic communities. These two goals attempt to redefine the relationship of UNI-F with external stakeholders and, more generally, society at large. By contrast, the three remaining goals are to do with internal actors – whether students or academics – and, moreover, they might be pursued by means of other kinds of initiatives that do not necessarily involve making resources freely available.

Information available at UNI-F's OCW site itself also pointed to two main strategic goals to be advanced by means of that initiative: 1) internationalisation processes and 2) the transference of knowledge to society at large.

Besides perceived benefits and the potential contribution to broad institutional goals, another key driver behind the implementation of UNI-F's OCW initiative was the fact that a considerable number of universities within Spain's higher education system were embarking on the initiative. That is, in such a context OCW sites were increasingly regarded as something that any contemporary university should have. The positioning with respect to other universities was a major concern for the governance board:

I remember the Vice-Chancellor saying to me: "I have heard that X University has more courses than us. How is that?" (Participant F101 – Former top university leader / Senior)

However, the lack of explicit connections between the initiative and the documents that define UNI-F's identity and orientation (i.e. its statutes and strategic plan) suggests that OER was not among the main institutional priorities. It is also remarkable that the university leaders in charge of UNI-F's OCW initiative at the time when I conducted the study did not have a clear idea of the original motivations that led to its implementation in the first place. Nevertheless, those university leaders, as well as the OER authors that I interviewed, tended to think that OER was not among the main priorities of UNI-F. Even though there were people, some of them holding positions of responsibility, that had sympathy for the idea of openness in education, research and technology, it was not a core element at a strategic level.

It is not a priority, especially taking into account the current situation [i.e. economic crisis and austerity measures]. It is not part of the governing board's priorities, so these kinds of things are the result of particular directors of secretariats or pro-vice-chancellors. It works like that. We don't have a political line that says: "this [open education] must be moved forward." (Participant F102 – University leader / Senior)

Such reliance on personal interests might help to explain why the new university leaders, after the last elections, were not fully aware of the role that UNI-F's OCW was expected to play in relation to organisational motivations at a strategic level. Further, the lack of protocols devised to assess the impact of UNI-F's OCW site is another factor implying that such initiatives might play a rather peripheral role in relation to the main institutional goals. In this regard, informants did not report any systematic monitoring of web analytics or any other impact assessment techniques.

Questions about the extent to which openness is among UNI-F's priorities often led interviewees to comment on the current economic situation. Both admin staff and faculty members suggested that UNI-F was facing a situation – i.e. the austerity measures affecting Spain's higher education sector at large – that was somehow preventing openness from being a priority within the agenda of most universities.

A priority at the time we're living in? These questions are a little bit difficult, because the priority is the very survival of universities, research... Obviously we have to support Open Access and these kinds of movements, because this is the best way of returning to society what society is paying us ... [but] a priority? I believe it should be. The thing is that you are coming here at a time when the priority is to pay the salaries. (Participant F201 – Senior officer)

In the same vein, a faculty member stressed that OER can hardly be a priority when the very continuity of the university was at stake:

I don't believe it [OER] is a priority. I think that UNI-F's priority right now is to survive; therefore I guess that innovation and educational content... well, you know that UNI-F is now facing such a situation. It isn't one of the big universities at all. It's one of the small ones and I think that right now it's figuring out whether it will survive these years of cuts and all this. UNI-F is very preoccupied now with being outstanding at research, I got the impression, but not at educational innovation. (Participant F405 – Senior / OCW author)

7.7 What were the pressures or incentives and impediments to participation in UNI-F's OCW initiative?

At an early stage, in the academic years 2008-09 and 2009-10, participation in UNI-F's OCW initiative was rewarded by means of economic incentives (see Table 13). The first call for contributions also stated that participation in UNI-F's OCW initiative could be potentially rewarded in future teaching performance assessments. While economic incentives were reserved just for some authors, the second type of incentive was aimed at any authors whose materials were selected for publication at the OCW site.

Table 13 – Economic incentives aiming to encourage participation in UNI-F’s OCW site (€)

Year of outcome release	Prize 1	Prize 2	Prize 3	Prize 4	Prize 5	Total
2008-09	2,200	1,100	1,100	600	600	5,600
2009-10	600	600	600	600	–	2,400

The 2010 call was also intended to encourage faculty members to archive their teaching materials in UNI-F’s online repository, which had been recently launched. In this regard, scholars could benefit from the scheme not only by submitting entire OCW modules, but also by means of smaller self-contained learning objects. Besides giving direct economic incentives to outstanding works, the new call also included two elements that might be valuable to participants in terms of career development opportunities: 1) a certificate of participation and 2) the creation of a digital object identifier (DOI) to be assigned to each course.

UNI-F’s leaders saw in the assessment processes undertaken by ANECA an opportunity to encourage the release of OER among faculty members. In particular they drew faculty members’ attention to one of the activities recognised by ANECA as a teaching achievement, namely the creation of “teaching materials freely available to students by means of the Internet or other electronic media” (ANECA 2008, p.37).⁶⁶ Whereas OER might be included under that description, the text was not conceived to specifically reward openness. Indeed, the paragraph refers to content that is available to students for free, while open content is by definition not restricted to any specific audience.

⁶⁶ Author’s own translation. Original text in Spanish says: “Autoría de material docente puesto a libre disposición de los alumnos por Internet y otros medios electrónicos. Material docente on-line.”

It must be also borne in mind that this section of ANECA's regulations was the only one allowing faculty members to earn points associated with the creation of learning materials distributed by means of conventional (i.e. closed) VLEs. The only other section devoted to the creation of teaching materials leaves out any materials that "have not been edited or that have been self-edited" (ANECA 2008, p.36), which is usually the case for content produced by academics in order to be distributed through VLE.

In spite of these considerations, UNI-F's leaders interpreted ANECA's regulations in a rather peculiar way, as faculty members were not able to receive a certificate proving their involvement in the creation of digital learning materials unless they were archived at UNI-F OCW site and/or the digital repository:

... if someone came to me and said "I have this material at my department's web site. Can you give me a certificate for ANECA?" we would say "NO!" (Participant F101 – Former top university leader / Senior)

In addition, the Open Source Unit tried to encourage participation in the OCW initiative by circulating information on a contest organised, at a state level, by Universia in partnership with Spain's Ministry of Education on an annual basis. The calls for participation in the contest were regularly advertised at UNI-F's OCW site and, moreover, the possibility of participating in the contest was highlighted on the site as one of the reasons why academics should be interested in participating in the initiative.

UNI-F's OCW site listed several arguments aiming to encourage participation. Most notably, it was stated that participation in the OCW site could increase the visibility of academics' work and, consequently, their public recognition. The site also stressed the idea that participants would be helping colleagues from other universities who were teaching the same subjects. Similar modules offered at

different universities could be mutually reinforced that way. In this regard, it was assumed that faculty members might seek inspiration and re-use materials created by colleagues at other universities. As for the potential economic incentives (i.e. the national contest) and career development opportunities (i.e. the certificate recognised by ANECA), they were only mentioned in last place.

After the initial stage, incentives relating to career development opportunities became the main mechanism available to encourage the creation of OER, given that direct economic rewards were discontinued in 2011. At that time OER release practices at large started to be fostered also by means of a new aid scheme that was aimed at promoting innovative teaching practices. According to the scheme's assessment criteria, those proposals that included the release of some sort of OER among their anticipated outcomes were prioritised. However, in this case the money at stake was not a prize, but the actual budget that the authors of successful proposals could use to develop their projects.

Interestingly, from the perspective of university leaders, the factors that were more likely to fuel participants' motivation had to do above all with personal interests and values. However, based on the evolution of policy frameworks regulating Spain's higher education system, some informants believed that external motivations could increasingly play a more relevant role:

Taking into account the lack of [formal] recognition, motivations are mostly of a personal nature: a service to the student and to the university. Nevertheless, taking into account the fact that academics' evaluation processes are changing, it seems to me like some faculty members could start feeling inclined to release content that they have already produced as OER, just in case in the next year or two someone requires them to have published OER ... until now it has been unconceivable that this could be part of academics' evaluation by any means, but a subtle shift is taking place, so I think that some people will keep doing it because of personal reasons and to make their work known, while a few people will do it for academic or CV reasons. (Participant F104 – University leader / Senior / OCW author)

Most often, participation in UNI-F's OCW initiative entailed making pre-existing materials publicly available, rather than developing new content. In this regard, OCW modules produced by UNI-F's faculty members might be largely regarded as some sort of by-product of on-going academic practices:

Well, we created the materials for use in our usual teaching, seeking nothing else, simply to provide our students with a series of resources that could help them to improve their learning. As for how those materials ended up in the [OCW] platform, well, we had previously uploaded the materials to a repository of digital objects and once they were there, without us having to request anything, they were submitted to some sort of internal digital resources contest [aimed at UNI-F's faculty]. Then we got one of the prizes and part of the reward was to upload the materials as an OCW module in order to increase its diffusion. (Participant F408 – Mid-career / OCW author)

Thus, if we are to understand the motivations driving the release of OER at UNI-F, it is important to look at the reasons why academics were involved in the creation of educational materials in the first place. Most interviewees perceived the creation of slides as a mainstream practice across all disciplines, that is, something that is embedded into the working routines and teaching practices of most scholars. By contrast, spending time on the development of more elaborate or sophisticated materials was considered something rather unusual, at least as compared to the work of most academics.

Generally speaking, the creation of learning materials was usually perceived not only as a choice (i.e. something that faculty members might decide to do or not), but also as an activity that can indeed have a negative impact on academics' career development in case they do not prioritise other activities. In particular, the regulatory frameworks that articulate the professional activities of academics within Spain's higher education sector tend to prioritise research over teaching. Further, the creation of educational resources is not included among core teaching activities, that is, those that any academic is expected to perform.

Most interviewees perceived the creation of educational resources as a type of activity that was under-valued. Some of them described it as an “invisible” task, meaning that it was not properly acknowledged as part of academics’ workload and that it had very little impact on their career development. Nevertheless, this perception was not restricted to the creation of learning materials, as most informants reported an overall marked imbalance between research and teaching duties at large. Overall, informants understood the disequilibrium between research and teaching duties as something undesirable, as illustrated by the complaints of one the interviewees – who claimed to have orientated his career towards teaching and management – about the excess of attention to research, to the detriment of teaching and students:

You may have realised that what they want is: “let’s see if we publish and publish and publish,” and just research. By contrast, teaching is a bit on the margins. However, students often finish with certain distaste for not having had a good learning experience. And that’s a shame. (Participant F406 – Senior / OCW author)

However, the interviewees tended to depict the creation of educational resources as an activity that was relatively central to their professional activity. In some cases, such practices might be even considered as a key aspect in the configuration of their identity as academics, being a key element in relation to the pedagogical approaches that guide their teaching. At the same time, they perceived this as a kind of anomaly in the academic environment, that is, something that is not shared by most of their colleagues. Some informants depicted the creation of original learning materials as a principle in which their teaching has been always grounded. As noted by one mid-career faculty member:

I have created [learning] materials since I started. Always, always ... whether I was working part-time or full-time ... I’ve always elaborated my own [extended] notes ... it’s absurd to have students taking notes during classes ... it looks to me like a waste of time. (Participant F403 – Mid-career, no-PhD / OER author)

A few interviewees associated the creation of non-traditional educational resources with some sort of pedagogical turn in their teaching practice. Such shift took them away from the mainstream pedagogical approaches in their immediate academic environments or disciplinary contexts. As noted by a senior academic in a humanities discipline:

This is something that I didn't consider until 4 or 5 years ago. For a very long time I followed the traditional methodology, simply going to the classroom and giving a lecture. I didn't used to develop teaching materials or anything like that. I only considered that five years ago, the academic year 2006-07 ... I first started working with transparencies and I started to work with PowerPoint in 2007-08 ... The content that I have in my OCW courses are the slides that I project to my students in the classroom. (Participant F405 – Senior / OCW author)

Likewise, a mid-career academic in a different knowledge domain, namely law, described a similar 'journey.' However, in his case the transition was from a traditional lecture-based teaching style, that already incorporated the use of slides, to a pedagogical approach that seems to be more innovative, at least taking into account mainstream practices. In particular, this scholar described a shift towards a teaching style that relies heavily on the creation of content that students were expected to consult in their own study time outside the classroom:

At the beginning of my career I didn't used to [write up and] upload [extended] notes, but this is the methodology that I gradually came to consider the most suitable, because I provide my students with a series of texts and set them compulsory readings, which is something that I also learnt at [another Spanish university where I spent two years before returning to UNI-F]. There was also an American lecturer [from the US]. A series of compulsory readings for each session ... so this is now my way of working: I always write up extended notes, upload them [to the VLE], they have them one week in advance or so and read them before the class, so we can dedicate the session to explaining things, but above all to focusing on the most complex or abstract aspects, as well as doing practical exercises about the materials. (Participant F407 – Mid-career / OCW author)

Regardless of the nature of the materials, one of the main reasons why many interviewees decided to devote time and effort to producing teaching materials that, at the end of the day, were not going to entail any significant pay-off to them – in terms of either career development or economic incentives – was because they

considered that such resources could somehow enable the students' learning process. Interestingly enough, most of the informants whose OER can be described as highly elaborate reported an intention to develop materials that meet the specificities of their students. In particular, that was the case of academics that teach courses to students in other disciplines or knowledge domains:

*... I find materials that are very good, but maybe they are not suitable for my students. For instance, I can find books on Social Sciences, but they are aimed at social scientists, rather than [students in vocational degrees]. Because I never teach Social Sciences to Social Sciences students ... It's like I have to facilitate, facilitate, facilitate, making it easier. Because of that I have always had an interest in developing materials.
(Participant F403 – Mid-career, no-PhD / OER author)*

Beyond the sense of duty, professional commitment or self-endorsed principles, some authors also pointed to some sort of inner satisfaction or joy deriving from the activity itself. Interestingly enough, one interviewee who had made a kind of hobby of such practice indicated that even though it was an incredible source of satisfaction to him, the uptake by his students had been somehow limited.

To me it has been a source of entertainment, something that I felt passionate about ... it has provided me with a lot of satisfaction ... it's been to a considerable extent a personal challenge, the satisfaction of creating materials that are not very usual ... students valued them, but they don't use them that much ... so it was rewarding, but then when I see that students don't use them much I ask myself: what is it for? (Participant F402 – Retired / OER author)

With regard to the idea of making educational resources available to anyone on the Web, a few interviewees reported that they had contributed to the UNI-F's OCW initiative mostly because of some sort of tangible reward. Even though the creation of OER may play just a very minor role in ANECA's evaluation processes, they considered that the effort was still worthwhile. As noted by an early career social scientist hoping to get accredited soon:

What we always say when you are planning to go through an ANECA assessment is that you have to try and cover all the sections, not to leave any gap. Therefore, it [innovation

or other teaching achievements] is a section that you have to fill in, though it is not the most important one. Everyone knows that research is the most important section. As for the teaching section, provided you have taught enough credits – there is a minimum – then the rest is just complementary. If you do innovation in teaching, that is complementary. You may meet the requirements of the teaching section just with your classes ... that is, innovation in teaching is far from being a decisive factor. (Participant F401 – Early career/ OCW author)

A similar situation was described by another scholar in a rather different situation, as he was a senior faculty member who had published some OCW modules before going through an ANECA assessment that allowed him to get a professorship.

I first made those materials available to my students through the VLE. Then I published the same materials at the OCW ... The reason why I did so is very simple. The reason is that if those materials are at the VLE they are not of any value to ANECA, but if they are at the OCW they do count. ANECA has a lot of influence on our activity. If the materials are just available to student they are worthless, but if they are available at the OCW they are assessable as part of the section nº 2. The work was the same, so uploading them to one place or the other didn't entail much effort. (Participant F405 – Senior / OCW author)

Nevertheless, the lack of recognition of OER release practices as a worthwhile scholarly activity in its own right, within the policy frameworks that regulate academics' career development, was perceived by UNI-F's leaders and OER authors as one of the main barriers to a wider participation. In addition, it must be taken into account that the release of educational content as OER might prevent some authors from having access to greater external rewards. That is the case of those authors whose materials are amenable to distribution as conventional publications – e.g. as a textbook. Besides potential revenues, the most relevant motivations associated with the fact of disseminating learning materials via a publishing house are to do with reputation and ANECA's evaluation processes.

The decision of turning teaching materials into OER usually involved editing, filtering, and double-checking content. Some authors also stressed the need of substituting some third-party content in order to comply with intellectual property

rights. Interestingly, some burdens were not related to the actual revision or adaptation of content, but with the bureaucratic processes at play:

You have to fill out a formal request and sign it. It also had to be sent by post, but now I have used my electronic signature. So it seems like the bureaucratic process is now lighter than it used to be. (Participant F407 – Mid-career / OCW author)

Moreover, according to both OER authors and university leaders one of the main factors that might explain the overall limited engagement of faculty members in the release of OER is the lack of awareness of it. Some of the informants noted that they did not know about the OCW platform before reading the call for contributions. Further, it must be noted that even one of the interviewees, who archived her highly elaborate materials in the repository under a Creative Commons licence, had never heard of the OCW initiative. As pointed out by another informant:

Sometimes you hear of things because some colleague mentions them to you, via word of mouth ... we are overwhelmed by the number of emails from the university and sometimes we miss something important because we receive a lot of emails about things that are not of interest to us ... Perhaps they send us emails about the OCW and we miss them ... When you request anything from them [the team in charge of the OCW platform] they are very fast, let's say that it works well if you bother about finding out that it exists. But maybe the problem is knowing that it exists. (Participant F407 – Mid-career / OCW author)

The lack of flexibility of the OCW model was also identified as one of the elements that could hinder participation to a considerable extent. Given that not many faculty members are likely to create teaching materials that cover their entire courses – as required, in theory, by the OCW model – it is quite difficult for them to approach the development of OCW as a by-product, that is, as something that could be easily embedded into the already saturated workload of most academics:

People have other things [to get done] and at the end of the day everything requires work and effort and, thus, you don't have enough original materials [to create an OCW course]. Look, I will give you my case as a faculty member, which is what I do right now

full-time. I have a course at the VLE that is available to all my students ... I have put together the entire module but I don't upload that course [to the OCW site], because it is based on references. So, it is not purely original ... Even though there are a lot of original things among these materials, they are mixed up. I don't upload it because of that. And I guess that many colleagues will be in the same situation. Your materials themselves are not a unit on their own. (Participant F104 – University leader / Senior / OCW author)

The consequences of contributing to UNI-F's OCW site and the online repository, in terms of both incentives and impediments, were not equal to all scholars. It was particularly relevant to those who could benefit the most in terms of career development opportunities, namely those faculty members who were planning to go through an ANECA assessment in the near future, so they could subsequently apply for a permanent position or a civil service position.

However, since the weight of these kinds of activities is so low in the context of researchers' performance assessments, it could be more beneficial for those who have already build a good research track record than for early-career:

Any young faculty member that doesn't have a permanent position is currently listening to the following message: "you have to get accredited; you must publish a lot of research work." It's quite clear what she needs to do if she wants to have access to a [permanent] position in reasonable timeframe. Probably not to create OCW courses ... the thing is that within this population that cannot devote their time [to the creation of OER] there are more people convinced that this is the future of the university. But they have to combine the future of the university and their own future. (Informant F104 – University leader / OCW author)

This is particularly true for the creation of highly sophisticated or extended materials. As noted by a senior academic in relation to younger academics at her department:

This is very time-consuming, I have devoted a lot of time and work ... I'm now collaborating with two colleagues at my department and they cannot spend time on this, because they have to devote their time to producing research outputs, which is what counts when you're applying for a permanent position. (Participant F402 – Retired / OER author)

Therefore, scholars holding a permanent position, especially civil service staff, had more freedom to act in a way that seems to be at odds with mainstream practices and the priorities dictated by the higher education system at large:

... these are materials that with some extra effort could be easily published as a book, but I didn't want that, it wasn't what I wanted. I didn't care whether it was valued or not [by ANECA]. I have many other things that can be valued, because of that I could afford to do it. I wanted to make it available to the public because, well, it is something that I had had clear for a long time then, period ... Not everyone is willing to make their work available to the public knowing that it won't be valued [as a relevant academic achievement by ANECA]. (Participant F404 – Senior / OCW author)

Some authors may choose to publish their educational materials as OER, rather than work with a commercial publishing company, because of personal values or even due to strategic interests other than making a profit. In particular, those scholars interested in reaching wider audiences might feel more inclined to participate in the OCW project:

[A prestigious publishing company in my area] approached me to see if we could publish a handbook for [one of the subjects that I was teaching]. But I don't feel like doing so. Even from a purely selfish perspective, I don't think the money you can make with a handbook is huge. And even from a selfish point of view, what you really want after spending time writing something is that many people read it. Thus, I don't feel like publishing a handbook, because it entails limiting access and having a more reduced audience, just because of an economic incentive that is not that significant ... So I'm more interested right now in releasing open content, rather than a handbook, because probably it is incompatible. (Participant F407 – Mid-career / OCW author)

One of the interviewees who was in a rather different situation, as she had a far less consolidated position, also pointed to her own values as a key aspect in her decision to release materials as OER. Whereas both personal interests and the values of a wider community seem to be key in relation to her choice, it can be also noticed that she assumed that she was not in a position that would allow her to undertake the work required before being able to approach a publishing company. That is, from a pragmatic perspective her choice also seemed sensible, especially

taking into account that many of her materials were developed a few years before its release as OER:

Once you have done your materials and you're using them, I think that either you pursue the route of having them published by a prestigious company, which is not my desire, how can I explain it? I don't have the intention of making money with this work, nor becoming well-known or anything like that. The only interest that I could have is because of my CV. But actually, let's say that I disagree from an ideological perspective ... Since I won't pursue the route of trying to get it published, because I don't have the chance to keep improving them, since I don't have many teaching hours assigned to that subject, I won't have the time. And I already have these materials, so it would be a loss not to do it [release them as OER]. Besides, I have already given these materials to my students, even if they were fragmented. Let's say that they were already circulating. I decided to put them together, sort them out, make them more homogeneous, and make them available to UNI-F's students as well as any other person that could be interested in them somewhere else. (Participant F403 – Mid-career, no-PhD / OER author)

7.8 To what extent and in what ways did UNI-F foster the development of OER literacy?

UNI-F's initiative was not accompanied by any training aimed at raising awareness of the philosophical, legal or technical principles underlying the OER movement. Interviewees tended to think of OER as materials that are available online and can be consulted for free. However, many of them did not show full awareness of the legal implications of Creative Commons and the opportunities for re-using and re-purposing their materials. An extreme case of misunderstanding of such implications can be noticed in the words of one author who said that he was very surprised after finding that no one requested his permission to post some of his learning materials somewhere else. However, Creative Commons licences render such petitions unnecessary.

I found some sites that had taken my materials ... no one asked permission. Of course, my name and email are displayed [on the learning object], but I haven't been contacted. (Participant F402 – Retired / OER author)

Those interviewees who were more knowledgeable about Creative Commons had learnt about the licences elsewhere, mainly because of their own particular interests or after seeing them on other web sites, such as Wikipedia. For instance,

one the interviewees who had released her materials at UNI-F's online repository pointed to the influence of her son in this regard.

I've known them [i.e. the Creative Commons licences] for a long time now. I don't remember when was the first time. [...] My son is a big fan of the open [movement] [...] This also encourages me. (Participant F403 – Mid-career, no-PhD / OER author)

7.9 To what extent did the release of online materials on the public Web redefine interactions between UNI-F's scholars and external actors?

In general, OER authors at UNI-F did not have much information about the actual use of their materials. Interestingly enough, many of them were not even aware of the fact that anyone can have access to information about the amount of traffic received by materials available at UNI-F's online repository.

As for the interactions between authors and people outside UNI-F, interviewees reported that the number of requests or questions was minimal. However, some of them had been approached not only by self-taught learners, but also by scholars from other universities who were interested in establishing some sort of collaboration. To those who had been approached it was a source of pleasure rather than an inconvenience, as illustrated by the following statement:

the satisfaction of being contacted by someone outside your university is enormous. (Participant F404 – Senior / OCW author)

In any case, there were not any mechanisms or protocols in place aimed at assessing the impact of content at either UNI-F's OCW site or the online repository. Although the idea of providing educational opportunities to independent or self-regulated learners is core to the notion of OER, some interviewees questioned the actual capacity of the OCW model to do so. That is, the fact that OCW authors at UNI-F based their modules on materials specifically designed for their students was likely to limit the effectiveness of such modules as self-study resources, especially for people who had no prior experience.

If we make publicly available the materials that we have created for our students, that's great, it helps to share knowledge, makes access to knowledge wider, there are many benefits, but it does not have to be pedagogically consistent. Because our teaching is face-to-face, so you use the materials within a wider process, with more elements, including classes, which are core to campus-based teaching. [...] What people outside the university might find is perhaps not a self-contained proposal: "I want to learn about a subject and you give me materials which are self-sufficient, a whole, and I can reach a certain level of knowledge thanks to them." It is not designed for that. (Participant F407 – Mid-career / OCW author)

7.10 Chapter summary

In this chapter I have examined the genesis and development of an OCW initiative with moderate levels of participation. Launched by UNI-F, a medium-sized and relatively new university, it was initially accompanied by a scheme aimed at encouraging participation by means of a series of economic incentives to authors that rewarded outstanding modules. In addition, university leaders at UNI-F aimed to harness the regulatory frameworks that define the evaluation of academics' performance, so participation in UNI-F's OCW initiative could help authors to become more competitive in the context of accreditation processes that allow academics to apply for more consolidated positions. In this regard, participation was primarily driven by career development aspirations.

Even though the economic incentives were discontinued after just a few years, the number of modules available at UNI-F increased steadily over the period covered in this study. Whereas the amount of resources allocated to the initiative was rather modest, high-ranking university leaders were concerned with its success. Indeed, UNI-F's OCW initiative was launched at request of its governance board, which had strong ties with Universia, the main advocate of the OCW model of OER provision in Spain.

8 High levels of involvement in the provision of UNI-G contents at a large university: the UNI-G case

The third empirical chapter looks at a large and old Spanish university that, in spite of being similar to UNI-B in this respect, has generated very high levels of participation among its faculty members. Diverse kinds of incentives have been available to participants since its inception, but the most distinctive feature of UNI-G's OCW initiative was the provision of personalised technical assistance in the development of resources. While OCW authors at both UNI-B and UNI-F were required to adopt a do-it-yourself approach, participants at UNI-G were supported by a team of technicians and designers during the first few years of the initiative. Like the two previous chapters, the findings are structured following the STIN strategy.

8.1 Introduction to the setting

UNI-G is one of the largest and oldest universities in Spain, like UNI-B. There were more than 60,000 students and 4,000 faculty members at UNI-G in the academic year 2012-13 (Regional Government 2013). The number of civil service academic staff was slightly higher than the number of scholars working under a contract. There is a gender gap within these two categories, with more than 65% of men among civil servants and more than 60% among hired staff. The gap is particularly pronounced among the most senior scholars. Indeed, just about 20% of the professors are female.

As for UNI-G's online presence, according to the *Ranking Web of Universities* (CSIC - Cybermetrics Lab 2013) its web domain is among the top-ten Spanish universities and the worlds' top 400. There are three main collections of online

materials under UNI-G's web domain that offer educational resources available to the public: 1) an OCW site, a repository of learning objects, and 3) an online video collection. In addition, UNI-G relies on two external services for video-sharing purposes, namely iTunes and YouTube. It is noteworthy that UNI-G has several official channels in YouTube, though only one of them is indexed in the YouTube Edu directory.

Although UNI-G's OCW site is the only initiative specifically devoted to the provision of OER at this university, the online repository also hosts some materials that are available under Creative Commons. Indeed, the content released through the OCW site is actually hosted in the repository. There are also other materials licensed under Creative Commons at the repository, but it is not possible to search or filter objects taking into account this aspect.

UNI-G was one of the first dozen Spanish universities that joined the OCW Global Consortium in 2006 and the OCW Universia Consortium in 2007. The decision-making process behind its launch took place at the highest level of governance within that university, to the extent that it was mentioned in several documents aimed at outlining the strategic orientation of the university.

The structure of UNI-G's OCW modules is highly standardised, as all the modules include the mandatory sections dictated by the OCW model: syllabus, a learning guide, information about the authors along with educational resources of different kinds. Likewise, all the courses offer self-assessment exercises – mostly in the shape of tests. However, the nature of the educational materials themselves is rather varied. Many modules rely on teaching materials that were developed by their authors as lecturing aids, mainly as slides. By contrast, other authors based their OCW modules on resources designed as self-study materials for students to

be used outside the classroom. The formal and technical nature of materials is also rather diverse. Many modules combine HTML, with slides and PDF files, while others also include animations and videos. A broad distinction might be made between highly elaborate modules and others that are less valuable as self-study materials.

Most OCW sites classify their modules in accordance with five broad knowledge domains: Social Sciences, Arts & Humanities, Health & Life Sciences, Sciences, and Engineering & Architecture. By contrast, modules at UNI-G's OCW site are classified into specialist areas that are defined at a much narrower scale. Around 60% of the OCW modules available at the site focus on topics in the Social Sciences, Humanities and Law, while 25% are in the Sciences and 7% both in Engineering & Architecture and the Health Sciences respectively.

All the content at UNI-G's OCW platform is available under a BY-NC-SA Creative Commons licence, which allows users to repurpose the resources, provided they give credit to the authors, share the new works under the same licence and do not use it for commercial purposes.

8.2 Levels of participation in UNI-G's OCW initiative

Faculty members at around 70% of UNI-G's departments had been involved in the creation of OCW modules. Most of those departments – about 60% – had contributed to the initiative with fewer than three modules, while faculty members at 25% of them had generated three to four modules. As for the most active departments in this respect, there were six departments that had generated seven or more modules each, namely in the fields of education, engineering, psychology, art, biology and media studies.

Most of the modules available at UNI-G's OCW site had been created in the academic year 2009-10, although many of them were gradually released over the two following years. At the time I collected the online data analysed in this study there were some 250 modules available at the site, it being one of the most populated OCW sites in Spain. However, the figures in Table 14 indicate that the initiative was largely inactive in the academic year 2012-13.

Table 14 – Evolution in the number of modules available at UNI-G's OCW (cumulative frequencies)

	Jun 2007	Mar 2008	Jul 2009	Sept 2010	Nov 2011	Apr 2012	Nov 2012	Sept 2013
Nº modules	10	12	46	58	117	167	250	252

Source: Table elaborated with data extracted from UNI-G's documentation and the Internet Archive Wayback Machine (<http://archive.org/web/web.php>).

According to the data extracted from UNI-G's OCW site in November 2012, more than 400 scholars had participated in the creation of modules available at the site. That is, more than 10% of the faculty had been engaged to some extent in the release of OCW materials at that university. In this regard, the level of involvement is substantially higher than in most Spanish universities, including the two other sites under examination in this thesis.

The overwhelming majority of scholars involved in UNI-G's OCW initiative had participated in the creation of only one module. As for those authors engaged in the production of more than one OCW module (20%), most of them had contributed to just two modules. Thus, the release of teaching materials via the OCW initiative appears to be approached by scholars at UNI-G as an isolated activity, rather than as a recursive practice.

The most prolific contributors in terms of number of modules were mainly based at Social Sciences and Humanities departments. It is worth noting that the

professor who had contributed with the largest number of modules, namely five, was also one of the university leaders in charge of UNI-G's initiative. Furthermore, almost all the other authors that had contributed with more than three modules were not only based at his department, but were also part of the same co-authorship clique. Having created 15 OCW modules, their department can be considered as the most active in this regard.

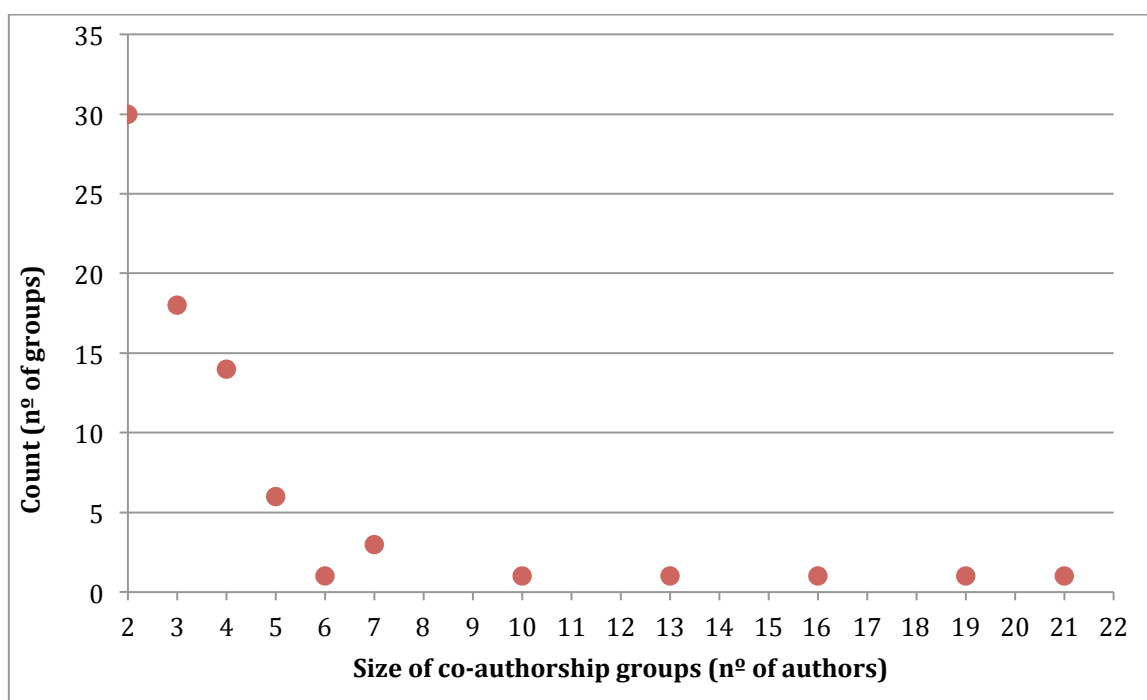
Most of the modules available at UNI-G's OCW, namely 58% (n = 144), were created by single authors. However, co-authored works at UNI-G were more frequent than at other universities. About two thirds of collective modules had been co-authored by groups of two to three people, while large groups were quite rare. Indeed, only 3% of the modules had been created by groups consisting of more than five authors. The modules created by particularly large groups of co-authors addressed Science and Social Sciences subjects. The average number of co-authors per module was lower in the Humanities, Law and Engineering.

Given that some scholars were involved in the creation of more than one module, in some cases co-authorship networks spanned across several modules. After looking at the entire population of scholars involved in the creation of OCW modules at UNI-G, it can be noticed that most of them were part of some sort of co-authorship group, meaning that most of them had collaborated with at least another scholar. To be more precise, only around 25% of all the contributors did work on their own, while the majority – about 300 scholars – had collaborated with at least one co-author in one module or more. Therefore, it may be argued that most contributors at UNI-G approached the creation of OCW modules as a collaborative work, although it should be taken into account that listing co-authors

does not necessarily mean that they all have been actually involved in the creation of content.

The majority of co-authorship groups involved in the creation of OCW modules at UNI-G tended to adopt the form of relatively small cliques consisting of fewer than five co-authors. Indeed, collaborative works were most often the result of alliances between just two or three faculty members (see Fig. 12). The three largest co-authorship networks, those with more than 15 nodes, were based at Science departments, namely in the areas of chemistry, maths and biology.

Figure 12 – UNI-G's OCW co-authorship cliques (size distribution)



8.3 Who were the key actors involved in UNI-G's OCW initiative?

The decision-making process leading to the launch of UNI-G's OCW initiative took place at the university's governing board in direct response to the advocacy efforts of Universia. The fact that UNI-G's vice-chancellor joined the board of directors of Universia Spain after the launch of the initiative suggests that there was a close level of interaction between the two organisations.

UNI-G's governing board was partially modified after the election of a new vice-chancellor in 2012. The university leader who was in charge of implementing and leading UNI-G's initiative also left office, although he remained involved in the supervision of the OCW initiative. The director of the Educational Technologies Centre also played a key role in the day-to-day management of the initiative. After the election this professor kept his appointment as director of the centre. During the fieldwork stage I approached these three university leaders.

The Educational Technologies Centre was created in the early 1990s as a centre specifically devoted to facilitating the use of ICTs within teaching processes as well as the creation of educational media content, mainly videos and subsequently digital resources. However, it was not until the academic year 2006-07 that UNI-G implemented a VLE with the aim of enhancing campus-based teaching. A new organisational unit was then created within the IT Services, taking charge of most of the processes associated with the management of the VLE and the implementation of other online platforms and initiatives that involve the use of digital technologies. At the same time, the Educational Technologies Centre provided faculty members with assistance in the development of resources to be used at the VLE.

Since its inception, UNI-G's OCW initiative relied on these two organisational units, as well as on the local schemes relevant to the areas of e-learning, educational technologies and ICTs at large. While the two units already mentioned – especially the Educational Technologies Centre – were responsible for facilitating the creation of content and managing the OCW site, at an early stage the initiative depended on policies and decisions made at a higher level, namely by one of the pro-vice-chancellors.

Support staff played a key role in the development of OCW materials at UNI-G, unlike UNI-B and UNI-F. An outsourced team of technicians, supervised by in-house staff, was hired through an external contractor. In particular, the team of technicians consisted of designers and multimedia developers, who reported to the technical director of the Educational Technologies Centre. This team was established in order to provide faculty members with assistance in the development and adaptation of content to be delivered through the VLE and the OCW site.

Nevertheless, the size of the team gradually shrank due to toughening austerity measures and changes in UNI-G's governing board, so the role of technicians shifted to a considerable extent. While they were initially expected to develop online materials following the instructions of faculty members, who had previously supplied the content, technicians ended up offering guidance to faculty members, who were in turn required to develop the materials themselves.

8.4 What were the resource flows associated with the implementation and functioning of UNI-G's OCW initiative?

The implementation of UNI-G's OCW initiative was embedded into a wider policy framework devised with the aim of promoting e-learning and innovative teaching practices. The first actions and incentives relating to the use of UNI-G's VLE were defined by a local plan designed in response to a report that had been recently released by Spain's Ministry of Education. The aim of the report was to prompt a shift in teaching methodologies across Spanish universities, favouring pedagogical approaches in tune with the Bologna process:

The modernisation of methodologies must bring us closer and closer to the pedagogical principles underlying the process of creation of the European Higher Education Area: a more prominent role of students in their learning, team-based and competencies-based work, acquisition of learning tools, creation of educational materials that facilitate

One of the core aspirations of the Ministry's agenda was to 'enhance' teaching-learning processes by means of digital technologies and online resources. In consequence, educational technologies featured heavily on UNI-G's own *Teaching Methodologies Updating Plan*. With an overall budget of 4,000,000 €, the plan consisted of a set of strategic axes aimed at favouring internationalisation dynamics and innovative pedagogical while providing faculty members with new training opportunities.

As for the creation of educational resources, the plan included a specific scheme devoted to fostering the creation of online materials. The scheme involved a number of actions specifically devised with the aim of encouraging academics to incorporate UNI-G's VLE in their teaching. In particular, it supported both the adaptation or digitisation of pre-existing materials and the creation of brand new resources.

The plan also encouraged collaborative dynamics among academics who were teaching the same modules to different groups of students. Thus, before having access to this service applicants were required to have the approval of the head of their departments. The plan also included a complementary line that allowed academics to request the purchase of technical equipment for educational purposes – whether software or hardware. The amount of funding allocated to cover the costs of just these two lines combined was close to 1,000,000 €.

Only one year after that, in the spring of 2008, UNI-G's Governing Board approved a university-wide *Strategic Plan*. Besides stating the mission, vision and main characteristics of UNI-G, the document established several strategic goals as

well as some of the mechanisms and actions to achieve them. The uptake of educational technologies and the promotion of e-learning were core to the plan, although technology was approached as a means rather than an end in itself.

UNI-G was defined as a campus-based university where e-learning operates as a supplement to face-to-face interactions. Further, the document emphasised that the uptake of new teaching methodologies and the process of adaptation to the European Higher Education Area should not be equated with the notion of e-learning. On the contrary, e-learning tools were presented in the document as a way of facilitating the work of students in some contexts.

In spite of this, one of the strategic goals – which was specifically focused on fostering the use of UNI-G' VLE – was tainted by a somewhat deterministic view. The plan justified such a goal by saying that the very notion of teaching was rapidly changing and that, in order to remain current, it was imperative not to rely exclusively on classroom-based interactions. Thus, blended-learning was suggested as a way of meeting student needs. Apart from justifying the promotion of the VLE in terms of adaptation to a new educational paradigm and the overall alignment with the European guidelines, the document also pointed to this action as one of the commitments of UNI-G with the regional government.

Whereas UNI-G's *Teaching Methodologies Updating Plan* was mentioned in the university-wide *Strategic Plan* as the main instrument aimed at facilitating the use of the VLE and although it was initially devised to cover a period of four years (i.e. 2007-10), another plan soon replaced the former: UNI-G's *First Teaching Enhancement Plan (2008-12)*. The new plan had been developed by the Office of the Pro-Vice-Chancellor for Teaching and was broader in its scope. It went beyond teaching methodologies and focused on the overarching aim of improving the

quality of studies and teaching processes at large. However, it drew heavily on the previous plan.

One of the goals established in the *First Teaching Enhancement Plan* was to ensure that faculty members had access to technical equipment and assistance when adapting or producing online educational resources. In this regard, it encompassed a scheme focusing on the creation of online materials that was a direct continuation of the specific call initiated by the *Teaching Methodologies Updating Plan* the year before.

Just a few weeks after the *First Teaching Enhancement Plan* was approved, UNI-G released a new call for proposals aimed at academics wishing to adapt or create online educational resources, so they could have access to technical assistance. Apart from having access to support in the development of materials, the scheme also included a number of incentives that I will discuss below in a separate section. A few similar calls were released again over the following academic years covering the release of OCW modules.

The *First Teaching Enhancement Plan* ended in the academic year 2011-12 and the second was approved by the new governing board in 2013. It is noteworthy that the new plan did not include any scheme aimed at funding the OCW initiative. Interestingly, it included the provision of MOOCs as a new goal of UNI-G.

8.5 What were the architectural choice points and the main rejected alternatives?

UNI-G's OCW site relies on two different technical systems. The content management system originally selected to power the site was EduCommons, as in most Spanish universities that were affiliated with the OCW Consortium (Borrás

Gené 2010). However, a few years after UNI-G's OCW site was launched the content started to be hosted in a different system that had been introduced in order to build UNI-G's repository of instructional objects. Thus, EduCommons remained just as an interface for the user, while OCW materials were actually stored in the repository. That way they were able to overcome the scalability issues of EduCommons that other universities were facing.

EduCommons remains just as a portal. It is not a problem because it doesn't manage the content, it is just an interface. There is a national group working on how to replace EduCommons. We'll see in the future if we decide to replace it, but right now it is not a bottleneck, because the content is outside and the effort of displaying it is not undertaken by EduCommons. So we don't have the uncertainty of whether it will crash or not. (Participant G201 – Senior officer).

This change was only noticeable to those involved in managing the content, as OCW authors at UNI-G were not required to self-archive the materials. The experience of end-users was not affected either, given that the interface was still powered by EduCommons.

It is noteworthy that both UNI-G's VLE and its repository of learning objects were powered by proprietary technologies. In this regard, it was not possible to develop in-house solutions aimed at favouring the integration between the different platforms. In this respect, UNI-G relied more heavily on the work of technicians for the maintenance of its OCW initiative than other universities such as UNI-B or UNI-F.

8.6 What were the pressures/incentives to implementing UNI-G's OCW initiative and the main impediments to its development?

The decision-making process behind the launch of UNI-G's OCW initiative took place at the highest body of governance of that university, namely its governing board, and was highly influenced by the overall relationship of UNI-G with Universia and the Santander Group. It is noteworthy that UNI-G's former vice-

chancellor joined the board of directors of Universia Spain a couple of years after the OCW initiative was launched. As noted by one of the university leaders:

I believe that it is very simple. [The initiative was launched] because of the relationship between [the president of both the Santander Group and Universia] and the previous vice-chancellor favoured the process" (Participant G103 – Senior / University leader / OCW author).

UNI-G's OCW initiative was mentioned in some of the key documents that defined the strategic goals and overall orientation of UNI-G, not only in relation to educational technologies but also at a much wider scale. Most notably, two of the last vice-chancellors explicitly mentioned the initiative in their respective election manifestos. In particular, such documents promised to increase the number of modules available at UNI-G's OCW site and provide contributors with incentives and support.

Beyond the rhetorical level, actual resources were allocated to the OCW initiative with the aim of fostering participation, namely through some of the schemes, organisational structures and policy frameworks already discussed in the section on resource flows. But before looking in more detail at the mechanisms aiming to facilitate the engagement of scholars in the release of OCW modules (i.e. the *how*) I will examine the key motivations and expectations of university leaders in relation to this initiative (i.e. the *why*).

Unlike many of the other members of the Universia OCW Consortium, UNI-G did not reproduce on its OCW site the entire set of arguments presented by Universia when aiming to persuade universities to launch their own OCW initiative. Indeed, the only goal explicitly mentioned at UNI-G's OCW site was to do with the idea of making available to society at large the body of knowledge generated and taught by academics at that university. In other words, the existence

of UNI-G's OCW was officially justified as a contribution to the common good. By contrast, claims about the potential of OCW initiatives to improve the quality of teaching, to increase universities' visibility or to foster the uptake of ICTs among scholars (Universia n.d.1) were not mentioned at UNI-G's OCW site

While the official *raison d'être* of UNI-G's OCW initiative was exclusively grounded on the ideal of benefitting society at large, the opinions of university leaders on this matter were rather varied. Indeed, different expectations and desired outcomes associated with the OCW initiative were simultaneously operating as drivers at a less explicit level. One of the former university leaders responsible for the launch of UNI-G's OCW initiative stressed a couple of rather instrumental goals associated with the initiative as a kind of by-product:

The main motivation is philosophical: to believe that it is part of the mission of the university. Then, it also has positive consequences, but they are not the goal. There are at least two positive consequences. First, visibility, reputation, improvement of the university's prestige... And then there is also another ramification that I think is positive too: when people publish, or are obliged to publish, the quality of materials and teaching increase. Thus, although it is not the aim, I think that it also helps to improve teaching at the university. (Participant G101 – Senior / Former top university leader)

The idea of gaining visibility thanks to Universia was decisive. While UNI-G could have launched an open publishing initiative on its own, university leaders were expecting to reach a wider audience by joining the Universia OCW Consortium:

Prestige above all. It is a very relevant way of making yourself known. With the support of Universia we had a strategy to achieve a good position in search engines' results. Our aim was, for example, to make new contacts by means of OCW, to have our content cited by other universities, establish networks and mainly because of prestige. Internally we have everything that we need for content publishing. [So] we were seeking prestige for the university. (Participant G102 – Senior / Former top university leader)

More specifically, the OCW initiative was expected to work as an instrument to attract potential prospective students, mainly from Europe (i.e. Erasmus

students) and Latin America, who were supposed to be looking at modules before enrolling.

There are plenty of Latin American students who come to know our university after googling OCW for different subjects. Therefore, we are trying to see how to exploit the OCW site in order to also advertise other courses, masters, doctoral programmes... it doesn't give us that much internally, but it's a way of making us known outside, to show what we're doing. Erasmus students, for instance... they cannot have access to the closed VLE, they don't know anything about the courses. But there [at the OCW site] they can see what we are doing. (Participant G102 – Senior / Former top university leader)

Nonetheless, such a potential scenario was not supported by any empirical evidence. Indeed, no data on the type of people visiting the site had been analysed at all.

While the information available at UNI-G's OCW site on the aims of the initiative talked about the idea of contributing to the common good in broad terms, university leaders behind the initiative had a much more narrow view in this regard. In particular, current university students and people with education at higher education level were perceived as the social group most likely to benefit from the materials available at the site.

The students enrolled in a module are obviously the main beneficiaries of such teaching materials, though, obviously, as they are open many other citizens – who are not currently university students – can benefit from them, although they must have a certain level of education in order to be able to benefit from them. Thus, alumni and people who want to remain updated or want to explore certain subjects in-depth [are those most likely to benefit from it]. (Participant G101 – Senior / Former top university leader)

In a way, this challenges the idea that OCW may democratise access to educational opportunities, an assumption that has often underpinned the discourse of OER advocates, including Universia.

Interestingly, OCW authors reported not knowing the reasons why university leaders at their university had become interested in the release of online educational resources and more specifically OCW content. Nevertheless, they

tended to think that it was probably the result of external pressures. In this regard, they believed that the need to replicate the behaviour of other universities could have played a key role.

My impression is: not to miss a train. It is a vogue. "Other universities are doing that, prestigious universities. This university can't be less, so we have to embark on this." Indeed, these things emerge in a rather innocuous way and suddenly it seems as if you haven't joined, some doors are closed. Thus, I guess that the main reason is that, we're lagging behind. (Participant G407 – Senior / OER author)

Some participants also pointed to potential benefits in terms of profile-raising and marketing strategy for UNI-G, while others guessed that it was probably to do with the increasing importance of reaching a good position in international rankings and with the overall process of adaptation to the European Higher Education Area, which was thought to put a great deal of emphasis on the use of educational technologies.

From the perspective of those involved in the implementation and development of UNI-G's OCW initiative, the main challenge was to do with those factors deterring the involvement of faculty members. According to the group of university leaders that I interviewed, the main factors constraining participation had to do with 1) the prevailing mind-set of scholars in relation to the idea of sharing teaching materials, 2) the conflicting nature of open content with economic and career-development opportunities associated with traditional publishing and 3) the idea of spending time and effort in activities that do not offer many incentives, as compared to other activities such as publishing papers in peer-reviewed journals. In the next section I will discuss these barriers in more detail.

8.7 What were the pressures or incentives and the impediments to participation in UNI-G's OCW initiative?

Although the creation of OCW modules was mentioned in the 1st *UNI-G Teaching Enhancement Plan* (2008-12) as an example of innovative teaching practices, the initiative was not included in the specific scheme for the development of online materials until the following year. Interestingly enough, neither the plan nor the specific annual schemes that were aimed at fostering participation in the OCW initiative made explicit any of the reasons why releasing educational materials as open content was of strategic importance to UNI-G.

The idea of benefiting the university and/or society by means of UNI-G was not used as an argument when trying to engage faculty members. By contrast, in order to attract the attention of faculty members the calls listed a range of concrete benefits that they could obtain after getting involved in the release of OCW materials. In other words, the emphasis was placed on very tangible incentives (see Table 15).

Table 15 – Incentives included into scheme for the creation of online materials

Edition	Potential applicants	Technical assistance	Training workshops	Technical equipment	CD-ROM	Certificate	Incentives specific to OCW
2008-09	Academics teaching undergraduate modules	Yes	Yes	Yes	ISBN	Yes	No
2009-10	Academics who have not participated in the previous edition	Yes	Yes	Yes	ISBN	Yes	Compulsory release of materials via the OCW site
2010-11	Any academic teaching at undergraduate and/or graduate level	Yes	Yes	No	ISBN	Yes	Extra certificate
2011-12	Any academic teaching at undergraduate and/or graduate level	Yes	No	No	No ISBN	Yes	No

Those incentive mechanisms were embedded into a wider scheme devised to foster the elaboration of online educational resources and boost the overall use of the VLE. The scheme had been in operation since the academic year 2007-08 (at that time under UNI-G's *Plan for the Update of Teaching Methodologies*), but it was not until the 2009-10 edition that it also started to cover the creation of OCW modules. Before that, during the two previous editions of the scheme, the Educational Technologies Centre used to approach specific scholars whose online materials seemed to be particularly amenable to incorporation into the OCW initiative and asked them to get involved in it. The total number of OCW modules released over that period of time was below 40.

The 2009-10 edition of the scheme for the creation of online materials offered the same type of support and incentives as the previous edition: 1) access to technical assistance, 2) training on both technical and pedagogical aspects of e-learning, 3) a laptop, 4) a certificate and 5) the publication of each module on a

separate CD-ROM identified by means of an ISBN. However, one key change was introduced with the aim of increasing the number of modules available at the OCW site: it was made compulsory for anyone benefiting from the scheme to release their online materials as OCW courses. That is, all scholars wishing to get assistance in the development of online materials – provided they were eligible – would be required to follow a number of rules determined by the OCW model of OER provision.

The call offered support. If you're a lecturer you can use the VLE without any assistance, but if you want to be assisted by a technician who adapts your materials and you want to get a certificate stating that such materials meet certain criteria... [then] you have to go through the call. Of course you have some obligations. One of them is to contribute with materials that cover the entire syllabus of a module, not just bits. [...] So nothing can be missing. However, the main requirement that year is [that we said]: "you have to release all the materials as open [content] so the OCW project has content." And because of this it has grown that much. Indeed, we haven't finished [processing them] yet, because it is a lot of work. (Participant G202 – Senior officer)

Furthermore, all the participants were required to sign a legal document stating that they had authored the materials and that they agreed to apply a Creative Commons licence. In the event of wishing to use any content authored by third parties it was also the responsibility of scholars to make sure they had the permissions required by law. Even though in that edition the potential population of participants was narrowed down, as it was only open to faculty members who had not benefited from the scheme before, the changes had a deep impact on the number of OCW modules that were going to be incorporated into the site. The amount of materials to be processed was boosted to such an extent that the release spanned many months.

We release modules throughout the entire year. I am the person who controls the workflow. Depending on the overall workload I say: "now we have to release a certain number of OCW modules." Or: "not now, because we are [busy] with the modules for the VLE." Though I have this under control, the problem with open content is that we don't release materials as we receive them. Maybe we are releasing things from 2010, because, of course, the priority is to official modules [available at the VLE for our students] (Participant G202 – Senior officer).

The following edition of the scheme (i.e. 2010-11) was again open to all faculty members, not just to those who had not benefited from it in previous editions. A significant difference with respect to the previous editions was that participants could not obtain technical equipment through this scheme any more. However, the main change was that in that edition it was not compulsory for participants to release their online materials as open content. That is, scholars who did not want to make their modules available as open content or whose materials did not meet the requirements of the OCW model were still able to get assistance in the development of materials to be used just by students in the VLE. Participants willing and able to contribute to the OCW initiative – provided their materials fulfilled certain requirements – were rewarded only with an extra certificate. Unsurprisingly, that change led to a substantial decrease in the number of contributions to the OCW initiative.

The scheme was further simplified in the academic year 2011-12, after the toughening of austerity measures and overall changes in the pro-vice-chancellor's office that was in charge of the scheme. Although any scholar could request assistance in the elaboration of online materials for the VLE, the number of hours that participants could spend with support staff members was limited. The limitation in the number of contact hours was the result of a decrease in funding, which led to a reduction in the number of outsourced technicians providing technical support at the Educational Technologies Centre.

While in previous years academics were mainly supposed to supervise the work of technicians, who used to be in charge of developing the actual online materials out of the content provided by scholars, now scholars were expected to acquire technical skills in the course of the meetings. The new goal was that faculty

members themselves could eventually take care of the technical development of online materials. The provision of technical assistance was then officially replaced by a capacity building approach, mainly aimed at reducing costs, but the team of technicians kept taking care of many technical tasks during the meetings.

In the past we [, the support team,] used to do things [for lecturers] and the amount of production was higher. Ironically, sometimes it is quicker to do something yourself than to ask someone else to do it [...] Even though here we provide [lecturers with] tutoring and moderate [the process of content creation], in some cases I say to technicians: "sometimes we have to assess whether it is easier to fix something ourselves rather than asking the lecturer to do so." It's true that if he doesn't do it he won't learn, but sometimes you may overwhelm the lecturer. (Participant G202 – Senior officer)

Although participants in the 2011-12 edition could still get a certificate – provided their content covered the entire syllabus of a course – and also got their materials on a CD, no ISBN could be assigned to the materials. This change was to do with the recent enforcement of state legislation regulating the uses of the ISBN, according to which it was not possible any more to assign this identification code to publications that were available for free. Although that legislation had been introduced in 2009 (Government of Spain 2009), it was not until the National Federation of Publishing Companies⁶⁷ took over the supply of ISBNs that universities were obliged to stop assigning such codes to educational resources that were not for sale – such as VLE materials or OCW modules.

In any case, the main change concerning the OCW initiative in the academic year 2011-12 is that it was not even mentioned in the communiqué circulated among faculty members with the aim of announcing the new terms and conditions of the scheme. The Educational Technologies Centre was then supposed to go back to the initial strategy of recruitment of OCW authors, identifying and approaching

⁶⁷ <http://agenciaisbn.es>

those authors whose materials seemed to be particularly amenable to incorporation in the OCW initiative.

When we're done with them [the modules created in 2009-10], then we'll carry on with [the materials] created in 2010-11 and 2011-12 and will say [to certain lecturers]: "Do you want to participate?" Because it is not compulsory and [a legal document] must be signed. [...] I have to make a selection because, since we cannot produce as much as I wish, I have to choose. (Participant G202 – Senior officer)

The 2nd *UNI-G Teaching Enhancement Plan* was approved at the beginning of 2013 and included among its objectives the aim of fostering the creation of online materials. However, no specific scheme focusing on such purpose was released that academic year. Interestingly enough, the plan mentioned the aim of offering MOOCs, but did not refer to the OCW site or any other OER initiative at all.

Direct economic incentives to authors were not considered as a viable way of encouraging participation at UNI-G, given the total number of faculty members and the overall goal of making as many modules as possible available at the OCW site. In the view of one of the university leaders involved in running the initiative, in spite of not being an efficient solution in that particular context, economic rewards would be a very effective way of encouraging participation:

If you give an economic incentive to lecturers willing to release their materials [as open content] it is obviously much better. Here this mechanism is not feasible, because the [high] number of faculty members doesn't allow us to do these kinds of things. Also because the commitment was not to release a limited number of modules, but virtually the vast majority. So there was not enough economic capacity (Participant UNI-G 103)

Nevertheless, even though direct payments in return for participation were not offered to authors, other kinds of economic incentives – namely technical equipment – were available in some editions of the scheme.

We chose to do something different. According to the innovative teaching plan, those lecturers who created online materials were provided with a laptop. And also an economic incentive [was available], but to purchase some equipment, to attend some conference... [but] not a payment. [...] We considered that option, but finally we decided that it would be too troublesome. (Participant UNI-G 102)

It is noteworthy that most of the faculty members in the study participated in the 2009-10 edition, which made it compulsory for anyone wishing to benefit from the scheme to approve the release of materials as open content via UNI-G's OCW platform. Consequently, most of the content available at the OCW site was produced for that academic year. It may be argued that many faculty members got involved in the release of OCW materials almost accidentally, just as a result of their interest in getting support for the development of materials for the VLE. That is, the key activity would be the creation of educational material, not the release on the public Web.

A common aspect among the OCW authors participating in the study, who were particularly active, is that in general they were already engaged in the creation of online materials before getting involved in the initiative. As noted by an early career participant:

I started creating the documents and didn't think that it would end up with the public release of the materials. Gradually they were offering that possibility to us, those who had materials. A kind of [technical] department was available to help us to polish up the materials for release as open content. Because, in order to be released as open content the materials were required to meet certain characteristics. For instance, if they didn't include self-assessment exercises they could not be released [as open content]. A series of sections had to be included. [...] The idea of seeing the material published caught my attention. It was like finishing the module. It would have been a sort of handbook, well-designed, that I could use in the future. [And also the idea of] sharing knowledge. (Participant G401 – Early career / OCW author)

While all the participants in this group were concerned with the release of educational materials on the public Web, the way they positioned themselves with regard to that practice – especially via the OCW initiative – varied to a considerable extent. Some of the participants were genuinely concerned with the idea of making educational resources available to the public, regardless of UNI-G's OCW initiative and the schemes. To such lecturers the idea of sharing content with a wider audience, even beyond academic communities, was worthwhile in its own right. In

the words of a humanities professor who digitised and made available online – via OCW and other sites – all the books he had published over the last four decades:

I think that the main interest of academics is to communicate their work to other people. That is more important... look, to most academics it is more important than anything else. So, you don't care about making money or not. Especially since the kind of money that you could make in the humanities is not more than 500 € per year. If it was like the handbooks in Law or Economics, where you can make 10,000 € per year selling books, then ok. But it's not like that in the humanities. (Participant G406 – Senior / OCW author)

Some participants tended to think that, in their capacity as public employees, they had the duty of sharing the materials resulting from their teaching activity with society at large. Nevertheless, none of them thought that this was something that faculty members should be forced to do. By contrast, from their perspective each academic should have the freedom to decide whether to engage in such practices or not.

No, I don't think it should be an obligation. It is a personal choice and anyone can do as she finds appropriate. There are people who prefer to publish a book and making some money with that, that's absolutely fine. I have done that in the past. These are different options. No, it cannot be an imposition. (Participant G408 – Senior / OCW author)

Most of those who were particularly enthusiastic about sharing educational materials with society at large did not see in the OCW the only way of fulfilling their ideals. Indeed, they relied also, or alternatively, on other mechanisms (i.e. personal web sites and external platforms) that allowed them to release educational materials on the public Web. Therefore, to those scholars the main motivation behind their participation in UNI-G's OCW initiative was not the possibility of sharing materials beyond the traditional boundaries of academic communities, as this is something they were doing already in any case. By contrast, in these cases participation was somehow driven by the set of incentives associated with the scheme, whether they themselves or their collaborators benefited from such incentives.

One of the senior participants – who was already releasing his materials as open content by means of both a personal web site and several discipline-based repositories – clearly stated that the main motivation for him to get involved in UNI-G's OCW initiative was the possibility to get a certificate that he could use in the context of ANECA's accreditation processes.

In Spain the only thing that matters is to collect certificates and pieces of paper. I'm against that, but if I want to become a professor I have to toe the line. Anything that I release as open content, which I've been doing over the last 25 years, is not taken into consideration whatsoever by ANECA. However, any bullshit that you upload to the OCW site is taken into consideration, as you get a certificate. Even if the quality is ridiculously low, doesn't matter, the important thing is the piece of paper [that you get anyway]. Thus, since this is the reality, I cannot ignore the reality. My idea is to release [the materials] as open content without having to put them into any specific platform. Of course, I think that the OCW platform is quite convenient, because it is a general repository. But if we didn't have the OCW site, I would have done the same in another institution's repository, even if it didn't make me get a certificate. But, since my university was promoting it and it was giving certificates, because of that I put [my materials] specifically there. (Participant G402 – Senior / OCW author)

In the case of the humanities professor already mentioned, who had digitised and shared all his books online, he could not benefit in terms of career development from the scheme, as he was already holding the highest level of seniority at the time when he participated in the OCW initiative. However, his OCW co-author – an early career scholar – was more likely to benefit after being credited as an OCW author. Interestingly, even though she had not been involved in the creation of the core content (i.e. the books), she was credited as co-author of the OCW modules.

Likewise, the university leader who contributed to the OCW with several courses was not able to benefit from the scheme in terms of his own career development, taking into account his consolidated position, though many of his co-authors were able to see an incentive in this regard, as they had less senior positions. Moreover, his high level of involvement might be explained by two other

factors: 1) the need to set an example with his own practice, being one of the university leaders in charge of the initiative and 2) the fact that the initiative itself and the creation of educational resources were part of his own research interests.

For less senior academics in the study the OCW initiative played a more pivotal role with regard to their actual engagement with the public release of content. That is, even if they felt sympathetic towards such idea beforehand, they only ended up releasing OER due to the incentives offered by some of the editions of the scheme. In particular, the possibility of becoming more competitive in ANECA's accreditation processes made the effort of adapting content worthwhile to those who were still in search of a more stable or consolidated position.

But not all the interviewees were originally receptive to the idea of sharing their content. The interviewee who held the less consolidated position said that she was initially reluctant to share her content on the public web. Only after participating she discovered other potential benefits (i.e. mainly in terms of visibility) associated with such a practice:

At the beginning I was hesitant. You think that it is a lot of material that you have prepared [...] My experience with the platform and making materials open was very positive. It is good publicity for my work. [...] At the beginning I was very reluctant, because of the idea that I had made it and so on. [...] But it ended up being a kind of portfolio and the fact of sharing it online is making good things happen to me, now talking from a selfish perspective. Of course, I do that for my students, not for me. [...] But it's true that it's having positive impact and I think it is fair. (Participant G401 – Early career / OCW author)

Nonetheless, in general the idea of gaining visibility or increasing reputation was not mentioned as a key motivation for participating in the OCW initiative. As for the possibility of getting technical assistance, it was valuable only to those who had not made any content publicly available previously. Indeed, some participants

thought that having to follow certain technical standards was constraining, even though a team of technicians was able to provide support in this respect.

It seems like my university wanted me to use a format that was Flash, I think, or something like that. And it was a hassle for me, as the materials that I had were like a book. It was difficult to persuade them to allow me to submit a PDF file, with internal hyperlinks [and to make them understand that] it was much better than the Flash Player they wanted. I don't know if it was an imposition of the OCW platform or something from here. I didn't get to know that. But what I know is that it was really difficult for me to convince them that a browsable PDF was the most suitable format for the type of materials that I was submitting. (Participant G402 – Senior / OCW author)

Two of the senior interviewees participating in the study were not involved in the release of OCW materials. By contrast, they relied on other types of platforms and services when making their content publicly available. In both cases the fact of releasing content on the public Web was the result of practices primarily aimed at improving their teaching, not only in pedagogical terms but also from a managerial point of view (e.g. saving time). One of these participants combined a pragmatic goal with the idealistic view of contributing to the common good.

When I created my [personal] web site, don't remember when, perhaps 2002, I was already planning to upload the things that I was doing [e.g. software, extended texts, workbooks, etc.] and could be of use to other people. That is the main advantage of the Web, the possibility of sharing the things that we do. [...] At our university we have a VLE that I don't use, due to ideological issues. [...] The web site helps me to pursue my interests, it is a combination of motivation for ethical and ecological reasons, but also the motivation of offering things that perhaps were not available. (Participant G407 – Senior / OER author)

While he was fully aware of the existence of open licences, after having even published a book available under a Creative Commons licence, he had not applied any of these kinds of licences to his online materials and, thus, could not be regarded as OER.

I have considered that possibility, but I haven't done that. I have thought of Creative Commons, but I haven't applied it either to the textual materials or to the software. Indeed I feel like doing that. [...] Maybe one day. I haven't said to myself "I am going to do it today." There is always something else. (Participant G407 – Senior / OER author)

The other participant in this situation saw the release of content on the public Web as a collateral outcome resulting from the use of technologies that helped him to be more efficient when circulating content among his students.

I realised that it was really easy to have a blog. So I decided [to do that] rather than using the VLE, which restricts the access [to content] just for the students in a particular group. For instance, I teach a similar subject in different degrees, it is not the same but there is content that is similar. So I would have to duplicate the content in the VLE. That is, I thought that it would be much easier to release the documents in an open blog than to use the VLE. Because, what is more, in the VLE you have to copy the information every year, and now they are upgrading to the latest version. For instance, I'm not bothered with that. If I want to update a file I just change a link and for me it is much easier. Besides, if there is someone else [apart from my students] who likes the videos or wants to study the content, I am happy about that. (Participant G405 – Senior / author of public online materials)

Interestingly enough, the fact that his content was publicly available – due to the nature of the tools that he was using to work with his students – was to some extent a source of concern to him. Indeed, he had already removed from the public Web some materials that he had created to teach a course at a different university (i.e. UNI-Z).

I'm quite concerned with intellectual property issues. It makes sense to me that some of my colleagues want to somehow protect authors' right. [...] In UNI-Z I got a lot of complaints after removing the materials [from the blog]. But in the case of UNI-Z I knew unequivocally that there were people taking advantage of the materials [unlawfully] and I simply didn't want to allow it. There were [for-profit] schools using that material to teach. (Participant G405 – Senior / author of public online materials)

Alternatively, he was involved in a project aimed at developing an experimental platform with the aim of exploring potential ways of commercialising his materials by means of an ad-hoc pay-per-view system.

From the perspective of most OCW authors that I interviewed, the relatively low level of involvement in the release of OCW content at UNI-G was to do with 1) an overall lack of incentives for the creation of educational resources at large and 2) the need of prioritising other tasks in a context where most academics experience an overwhelming workload. While many of the participants saw in the

scheme a compelling opportunity to become more competitive when aspiring to get a more consolidated position, they also recognised that other academic activities had much more relevance in the development of academics' professional careers, above all publishing research in high impact journals.

Moreover, the fact that many academics base their teaching almost exclusively on summarising the work of relevant authors in their disciplines may make it difficult for them to share their materials outside the private context of the classroom.

I think that there has been some problem due to intellectual property issues. [...] I put this just because I am confident that [the notes] will be used [just] by my students. I wouldn't know what to say if [the notes] were read by a lecturer and he says: "these pages have been plagiarised from my handbook." I don't know to what extent I could be told off. (Participant G404 – Part-time teacher / OCW author)

Since OCW materials should cover the entire syllabus of a module with substantial amounts of original content, at least in theory, many scholars might think that benefiting from the relevant editions of the scheme would require too much effort from their end. In this regard, the development of OCW modules might be incompatible with the teaching practices of many scholars:

Maybe having [the materials] prepared like this requires lecturers to follow very precise planning from the beginning [of a course] and not everyone is perhaps willing to do so. Maybe they want to improvise or to find out things step by step. This also requires people to prepare digital content. [...] You must bear in mind that everything must be digital and, even though it seems straightforward, not everyone works in the same way. (Participant G401 – Early career / OCW author)

The OCW model also required authors to develop self-assessment instruments that people could use in order to test their learning. The extra effort associated with developing these kinds of tools may operate as a factor putting off potential contributors, especially those faculty members who do not use tests as a way of assessing their students.

Participants also pointed to the existence of certain cultural aspects entrenched in Spain's higher education context, not just UNI-G, that were at odds with the idea of sharing teaching aids and other educational resources with colleagues. The fact that teaching has been traditionally approached as an individual endeavour and the fear of being exposed to criticisms from colleagues would be at the heart of this cultural explanation:

Lecturers are very jealous of the materials that they have and [the content] they deliver in their classes. [...] I think that it is something cultural, not to meddle in what other colleagues do, because it generates tensions and conflicts. These are sensitive issues. If two lectures teach one course, they split the content and each of them takes care of their materials [...] I think it is mainly a cultural issue. (Participant G403 – Senior / OCW author)

As noted by one of the university leaders involved in the implementation of UNI-G's OCW, to some academics the sole idea of sharing teaching materials with other colleagues might be perceived as an exposure to potential criticism.

I believe there is a cultural aspect [at play]: we're not used to sharing that knowledge [...] When you make your knowledge open, you're not just sharing it with others, but also with your colleagues. So you are subjected to the scrutiny of your own colleagues. Therefore, those who are bad lecturers or have bad materials or use obsolete information [...] might be exposed to the risk that other colleagues see what you are doing wrong. (Participant G 101)

From an economic point of view, the fact that releasing educational materials as OER can prevent some academics from making money – for instance by selling their content via a commercial publishing company – is another factor that could help to explain lower levels of participation. It is worth bearing in mind that most participants thought that profiting from educational materials is legitimate for academics at public universities.

My work is paid with a public salary and, thus, there is one part of my work that must be public. But, for instance, in my own case, the act of editing videos and making them available [online] is something that I don't do in my working hours. I mean, in general there are two 'families' of faculty, more or less. Those who work just enough and then those of us who spend 14 or 15 hours a day. If I did my work in 8 hours, which is what I'm paid for with public money, I guess, then I couldn't of course create content and

make it available to the public. That is, I could say that my work ends here and now I will edit this video in my spare time. Thus, if I wanted to make a profit out of something that I do in my spare time no one could prevent me from doing that. Lecturers have always published books. There have been always lecturers who have published, and of course sold, textbooks (Participant G405 – Senior / author of public online materials)

Some scholars might feel that by releasing their educational resources as open content they are giving away their work, as opposed to the possibility of signing a contract with a publishing house. This possibility would yield greater benefits to the authors, not only in case the publication sells well, but also because in the context of ANECA's accreditation processes any work published as a book by a publishing house is worth more than content in the public web. More generally, it was noted that activities relating to teaching were less valuable than research from a career development perspective.

[Teaching] is hardly measured, assessed, rewarded. I believe that now it's starting to be fixed, but still insufficiently. [...] We're not just a research centre, so teaching is very important, is our raison d'être. Delivering knowledge to students is something that should be included in the assessment and incentive mechanisms for scholars. And it is not sufficiently... at least not even close to the way research is. (Participant G101 – Senior / Former top university leader)

The imbalance between teaching and research has been further accentuated by the austerity measures implemented by Spain's Government, as those academics who cannot prove an active research and publishing record over the last few years are penalised with an increase in the number of hours they have to teach.

I think that in the upcoming years it will be difficult [to sustain] these initiatives. Because we don't have the instruments at the university to oblige lecturers to do that and, certainly, taking into account the current situation [...] now those who don't do enough research will have to teach more hours, they are punished by having to teach more... So lecturers are saying that here it doesn't matter whether your teaching is fine or not. Here all that counts is research. I guess that unless this changes people will spend as little time as possible on this. So I don't know what kind of mechanisms we can put into place to incentivise, because there isn't money either. Travel expenses for conferences and so on, zero. (Participant G102 – Senior / Former top university leader)

The effects of the economic situation on academics' salaries were also considered to work as a significant barrier to participation. In particular, the precarious nature of contracts might be preventing people – especially early career scholars – from engaging in activities that do not offer a clear and direct economic return.

People will work less and less just for fun, because I'll tell you the problems. If we public employees start to be underpaid, if I make let's say nearly 1,100 € per month, how can I spend time on these things? I have to do things that earn me money. (Participant G202 – Senior officer)

While the aspects discussed above are mainly of a pragmatic nature, one of the university leaders also pointed to ideological issues that might be preventing some people from participating. In particular, the fact that a bank (i.e. the Santander) was ultimately behind UNI-G's OCW initiative, as it is part of the Universia OCW Consortium, could be dissuading many lecturers from participating.

OCW is rather unknown here at our university and we don't want to give it too much publicity because, right now, with the economic situation... it might look silly, but the fact that Universia and Santander are behind it generates a great deal of resistance at universities. There is a sector [within universities] that wants banks out of universities. If you go to our page you will see that Universia is not very visible. We don't give much publicity to it. And it is a conscious decision. Indeed, there are people who release open content and refuse to upload them to the OCW site while the Santander Bank is behind it [...] And Universia knows it. I have now spent several years involved and know these people very well and I talk to them about this. They know the situation. (Participant G102 – Senior / Former top university leader)

In addition, the gradual decline in assistance supplied by technicians also affected the level of participation. The new arrangement was a source of controversy among many academics, who saw the changes as an unfair imposition.

Things have changed, because the guidelines that I showed to you before are now handed over to lecturers and they are advised. There is a kind of moderation process. You upload the content and I say: "no, this cannot be there. Fix it." And, well, relatively it has worked. To be honest, we have received plenty of complaints. Cause there are lecturers who say: "I want someone to do this [for me]. You can't tell me to take that

thing out or convert this to HTML, please do it for me! (Participant G202 – Senior officer)

In a follow-up communication with that informant via email, by the end of the academic year 2012-13, he reflected on the negative impact of the new arrangement on both the provision of support for the creation of online materials, at large, and the release of OCW modules, in particular:

Requests for the development of [online teaching] materials [by personnel at the Educational Technologies Centre] were not possible. The [new] service involved the provision of technical assistance in the validation of materials developed by faculty members. And it has been provided for just 64 courses. The staff available to do so consisted of just two people, one of them myself. [...] As for OCW, there's been just one request. The usual release of OCW [courses] has been discontinued. The reasons: the team of support technicians was fired in June 2012 (it seems like there is not a budget for this); the Teaching Plan depended on a Pro-Vice-Chancellor office that disappeared after the last elections and nothing has replaced the action that led to such a large number of OCW modules. (Participant G202 – Senior officer. Communication via email)

While some of the participants were only engaged in the release of slides, others had created resources that were not conceived just as a lecturing aid, but also as a self-study resource (e.g. full-length texts, software, videos, etc.). Interestingly, the faculty members in the study whose materials consisted primarily of slides were holding early career or not fully-consolidated positions at the time when they had contributed with UNI-G's OCW initiative. By contrast, generally speaking, participants with more consolidated positions had engaged in the production of highly elaborated materials.

Regardless of their levels of seniority, job titles or preferred types of materials, the main reason why participants in this group decided to spend time authoring educational resources is because they all thought that, by doing so, they would enhance the learning experiences of their students. For instance, a science professor who had created extended hand-outs and video-clips based on

recordings of his lectures reported that he had started to do that after he realised that his students could not take proper notes any more:

The act of giving materials to students is because you realise that they have very serious difficulties taking notes during lectures. [...] We all have been guilty, me too, of overusing Power Point. And students think, or used to think, many still think, that the slides are enough, so they don't have to take notes. [They think] that with them they will understand the course, though it is clear that isn't like that. The slides are just an outline, very useful for us lecturers to follow a structure and not miss anything, but that's all. [...] So the only way that I found of making sure that students had the content was, first, making proper notes, as the content that I explain can be put in writing. In addition, [using video-clips] I can give more examples that you can do just in writing. So, by providing students with materials I intended to improve teaching. (Participant G405 – Senior / author of public online materials)

Even those engaged in the provision of less extended materials regarded the development of their own resources as a core part of their teaching practices. In other words, most of them tended to think of the creation of educational resources as something that was intrinsic to their own teaching style. In the words of a mid-career scholar in the social sciences: “it is a constant, I couldn't understand teaching without the creation of [educational] materials” (Participant G409 – Mid-career / OCW author).

Taking into account that most interviewees had decided to get involved in the creation of educational resources mainly because they thought it would enhance the learning experience of their students, many of them thought that it was important to generate resources specifically tailored to the needs and characteristics of their students. This was particularly relevant to participants teaching novel subjects and/or teaching students outside their own disciplinary realm. For instance, from the perspective of a professor who was teaching physics to students in a computer science degree, customisation was the main value of his materials:

I can understand that, if you are satisfied with any of the good books that have been already published, why would you create another version of the same? I don't know. I

only created the materials because we were teaching the module in the computer science degree. Thus, it was not the physics typical of engineering, as it had some particularities more specific. [...] Probably, if my teaching took place in degrees in industrial engineering or physics it would never have crossed my mind to create my own version of something that has been already done, and very well-done, by other authors. (Participant G402 – Senior / OCW author)

In a rather different situation, a law practitioner lecturing on a part-time contract also felt that most of the literature available in his field did not really meet students' needs, whether they were enrolled in a law degree or in a different discipline:

In Law there are very good handbooks, excellent works, very well-written [...] The problem with handbooks is that they are not aimed at students. They are written to be read by other lecturers, at least in Law. Whereas this is not aimed at other lecturers, it is aimed at students. We all have been students and the student wants to pass the course and, if possible, to obtain a good mark with a proportionate amount of effort. The problem when you're doing a degree is that you don't have time. And we lecturers think that they are just taking our course. (Participant G404 – Part-time teacher / OCW author)

The few early- and mid-career academics in the study reported that every academic year they were required to change at least some of the subjects that they teach. For instance, the participant holding the most junior position in the study – even though she had completed her PhD a few years ago – had been required to teach about 15 different modules in total over the last four years. While she saw research as both a rewarding activity and something that she should pursue in order to have access to a more permanent position in the future, the increasingly high amount of teaching that she was forced to undertake gave her little room to engage in research.

My situation has changed a lot since I started in 2009, when I used to have 21 credits. I had all my teaching in one semester and then I could devote the other one to research. But things have changed a lot. Because the following year I gave birth and teaching was the priority. You must keep up with your teaching and I do what I can with research. So my dedication to research has decreased. And this year is much lower. Well, I have published journal articles, book chapters, conference papers... but much less than I would have wished. (Participant G401 – Early career / OCW author)

Paradoxically, a disproportionate teaching workload and the fact of having to teach new modules every year did not have a detrimental impact only on research performance, but also on the amount of time that academics can devote to developing educational resources. Another of the less senior participants in the study, whose OCW content also consisted mainly of slides, declared herself not to be very satisfied with the nature of her materials, partially because of the lack of time that she had when developing the content.

I haven't released more material [as OCW content] because I am not happy with the material that I released. I'll be very critical. I am not happy whatsoever with that material. [...] The material is meagre: a series of slides with some links, videos that I use in the classroom, etc. That is what I turned into the material that is available at the [OCW] site. I think that it shouldn't be the kind of material that is used for teaching online. [...] It's a criticism against myself and the lack of time that I had to prepare the materials. (Participant G409 – Mid-career / OCW author)

Conversely, senior participants in the study had engaged in the creation of more complex, sophisticated and lengthy educational resources. Most of them had developed full-length texts, which were usually delivered to their students as PDF files via either UNI-G's VLE or other online platforms. In some cases, the length and level of elaboration of such texts made them look close to the standard of published textbooks.

In general, participants did not consider the adoption of innovative teaching styles and the development of original educational resources as a mainstream practice. Therefore, they tended to think of themselves as 'rare birds' in this respect, positioning themselves apart from most of their colleagues. The release of educational content on the public Web was an even more unusual practice.

8.8 To what extent and in what ways did UNI-G foster the development of OER literacy?

Unlike other universities, UNI-G did not put in place any training programme aimed at raising awareness of the philosophical and legal principles underlying the OER movement while encouraging participation in the OCW initiative. Although training was a core element in all the editions of the scheme for the creation of online resources, it was limited to technical aspects relating to UNI-G's VLE. It also covered pedagogical approaches relevant to e-learning, but it did not reflect on the implications of OER at all. Moreover, the amount of information available to faculty members on the overall goals behind the provision of OCW was rather limited.

It hasn't been promoted that way, saying: "well, we will do either some technical training that includes a clear introduction to the context – that is, what the values of the project are, to understand why we're doing this, [why] we're going to participate in this – or simply some publicity. (Participant G 202)

Generally speaking, participants in the study were hardly aware of the implications of releasing their materials as open content. Even after agreeing to release their materials as OER, by signing a legal document, many of them did not perceive the release of materials via the OCW site as substantially different from making them publicly available at other sites that are not licensed under any open licence. The adjective 'open' was understood just as a synonym of 'available on the public Web' even by the Director of the Educational Technologies Centre, who was a prolific author of OCW materials. He regarded himself and his research group as early adopters of open educational practices, based on the idea that all their educational materials and many research publications could be viewed at the web site of the group:

For instance, for my research group, we have a web site in which we release openly everything that we publish: from courses, slides, video-clips to all our articles and publications. So we are true believers. (Participant G103 – Senior / University leader / OCW author)

However, a legal notice on the web site of their group clearly stated that all the rights were reserved. Consequently, it did not comply with the minimum requirements to qualify as OER. From the perspective of the participants in the study, the key difference was between content available in the public Web and content circulated to limited audiences by means of private online platforms (e.g. VLEs). In this regard, legal restrictions were rendered virtually irrelevant, while the focus was on the technical barriers.

The lack of awareness of OER and, more specifically, of the OCW initiative was also pointed as something that could help explain why the level of participation was not higher at UNI-G.

*There are people who don't know it [...] Perhaps the policies aiming to make the project known are not very good and often remain at very top level, not reaching lecturers.
(Participant G103 – Senior / University leader / OCW author)*

The release of OCW modules at UNI-G may be conceptualised as a by-product of some of the editions of the scheme for the creation of online materials. Thus, taking into account that virtually all the emphasis of the documents relating to the scheme was on the creation of materials to be used by students, it is possible that some faculty members who benefitted from the scheme were not fully aware that their materials would be eventually available to the public, even though they had to agree in writing by signing a contract. That was the case of one of the interviewees, a law practitioner working as a part-time lecturer. Even though he had contributed to the OCW initiative with three modules, he did not realise that his materials would be available to people outside UNI-G:

For people outside [the university]? To be honest, I don't know. I mean, I was just interested in uploading things for my students. I did not pay attention to that kind of thing [...] I don't know, they had ten pages [of terms and conditions], but I don't remember what they said. I was already doing these kinds of things and the university said that, if we did that, they would provide us with technical assistance and give us a laptop so I say: "look, I don't lose anything and I can get something." And after that I

didn't ask to myself many other questions. Maybe it was one of these things with 100 pages and they [ask you to tick] "I agree" or "I do not agree." No idea. (Participant G404 – Part-time teacher / OCW author)

During the most active period of UNI-G's OCW initiative, contributors were not expected to develop any special skills required for the development of online resources. Indeed, a team of technicians was in charge of supporting faculty members in the actual process of developing teaching materials, so they could focus exclusively on authoring the content and ensuring its quality, rather than having to worry about the technical aspects. As noted in one of the strategic documents:

The goal is that faculty members uptake new technologies as an ancillary tool in the teaching process and that they create high quality materials in digital or innovative formats. To do so they will be provided with assistance, making the use of technologies and the creation of materials easier for them. Thus, the intention is to put in place mechanisms [that allow academics] to focus just on the quality and conception of educational products (UNI-G 2007, author's own translation)

However, faculty members were required to take a hands-on approach to the development of their online materials when the amount of resources allocated to the scheme eventually declined.

8.9 To what extent did the release of online materials on the public Web redefine interactions between UNI-G's scholars and external actors?

UNI-G's OCW site stated in very explicit terms that it was conceived as a resource to support self-directed learning, meaning that it did not involve any interaction between users and authors. However, some of the interviewees involved in the implementation and development of UNI-G' OCW initiative were under the impression that faculty members may be deterred from participating because of the mere idea that they could receive additional requests about their content from people other than their own students.

Bear in mind that lecturers think that if open materials are good, which is the idea, there is always someone who asks something, lecturers at other universities... and this is a headache for them (Participant G102 – Senior / Former top university leader)

This perception was also expressed by the Technical Director of the Educational Technologies Centre, who reported that some faculty members raised concerns in this regard:

There are teachers who asked me: "can you ensure that I won't have to reply to any request?" And I said: "you are not obliged to reply. But perhaps someone could send you an email." (...) I understand them, because I wouldn't address petitions received this way, on top of the requests from my students." (Participant G202 – Senior officer)

However, most of the authors that I interviewed had not received any requests. As for those who did so, it was not problematic at all. E-mails from colleagues were more usual than requests from self-regulated learners or students from other universities. In any case, OCW authors did not feel obliged to reply to all the emails, as noted by one of the professors that I interviewed:

I've received just a few requests. I replied to some of them and didn't bother with others that were absurd. I gave an answer to those that were sensible. But I don't get 10 per day, perhaps 3 or 4 a year. (Participant G402 – Senior / OCW author)

8.10 Chapter summary

This chapter focused on the genesis and development of an OCW initiative that reached very high levels of activity during its first years of operation. Unlike the initiatives examined in the two previous chapters, UNI-G's OCW initiative was included in some of the key documents outlining the strategic orientation of this university. In this regard, it was launched at request of UNI-G's governance board, which had strong ties with the main advocate of the OCW model of OER provision in Spain, namely Universia.

During the first few years this initiative was supported with a significant amount of resources, most notably by means of a team of technicians specifically

hired in order to provide authors with assistance in the development of online educational resources. The specific incentives and the conditions regulating access to assistance varied to a considerable extent over time. Most notably, in the academic year 2009-10 all authors wishing to get support in the development of online materials to be used by students at UNI-G's VLE were also required to make such resources available at UNI-G's OCW site in exchange for the support.

While this approach led to the production of a very high number of modules during the first few years, the level of activity became virtually negligible after the budget allocated to the initiative was reduced and eventually discontinued. Indeed only two new modules were released between 2012 and 2013. Participation in UNI-G's OCW initiative was not only driven by incentives associated with professional development opportunities, but also with the possibility of getting access to support in the production of resources that faculty members deploy in their teaching.

9 Discussion and conclusions

This chapter will provide a comparative view of the three cases and will highlight the main conclusions. After focusing on key differences and commonalities in the process of implementation of OCW initiatives at the three universities, it will discuss the main theoretical implications of the study. In addition, it will draw conclusions of general interest beyond the cases under investigation, aiming to provide valuable insights and recommendations for decision-making processes regarding OER initiatives and, more generally, for the design, implementation and uptake of ICTs in the academic environment.

9.1 Introduction

Over the last decade the OER movement has gradually gained ground in the educational policymaking arena on a global scale, attracting the attention of many university leaders and educators who see in ICTs an opportunity to expand access to learning opportunities. However, despite the intense advocacy efforts of international organisations such as the Hewlett Foundation and intergovernmental agencies like UNESCO, the provision of OER remains at odds with prevailing academic cultures and deeply rooted institutional arrangements dominant in the higher education arena. As Selwyn (2013, p.82) notes, “the likelihood of teachers and learners getting involved in the production of open software or content are curtailed by the realities of institutionalized education – not least issues of time, technical expertise interest and motivation.”

Under these circumstances, the vision and hopes of those who are behind the launch of top-down OER initiatives at universities often collide with the priorities and obligations of those who are expected to engage in the release of educational materials via the public Web and under open licences. Further, these initiatives are

often undermined by the complex set of competing priorities that most universities face these days.

This thesis has assessed the extent to which the implementation of OCW initiatives may prompt the institutionalisation of OER provision practices within institutional contexts that are significantly different from the setting in which the OCW model was originally developed. In this final chapter I will stress the importance of framing OER within a broader socio-historical context and the suitability of approaching OCW initiatives as STINs while adopting a practice perspective.

Over the next sections I will offer a comparative view of the three initiatives analysed in the previous chapters and will give answers to the research questions formulated in the first chapter. Finally, I will end the chapter by linking the findings of the study to the body of knowledge generated in the field of Social Informatics.

9.2 Framing OER within a wider socio-historical context

During the second half of the XIX century Cambridge, Oxford and then other British universities started to provide citizens other than their own students with educational opportunities by means of a series of activities labelled as ‘university extension.’ Although this was a commendable endeavour that certainly shaped the way universities serve society at large, it would be a mistake to think that it was solely the result of altruistic scholars who decided to open up the doors of academia to anyone.

As noted by Goldman (1995), the idea of reaching new audiences and serving society in new ways was largely fuelled by the fear that dons started to feel of the potential consequences of the increasing hostility of provincial middle classes

towards universities. In particular, universities were afraid of the possible reforms imposed by the mid-Victorian state at a time when their cost and actual value to society were being questioned.

Likewise, if we are to fully grasp the emergence, evolution and opportunities for consolidation of OER it would be naïve to think that they might be driven solely by the laudable ideal of advancing access to higher education as a universal right, especially at a time when it is increasingly approached as a private good by many governments. Indeed, as some authors contend, the proliferation of OER initiatives could be reinforcing the impact of neoliberal agendas on the higher education sector (Alevizou 2012; Knox 2013; Rhoads et al. 2013; Selwyn 2013). While facilitating the gradual massification or even universalization of higher education, initiatives like the so-called MOOCs could be fostering the emergence of a type of tertiary education where students are expected to rely almost exclusively on self-directed learning, perhaps facilitated by interactions with peers and artificial intelligence.

In order to understand the scope of OCW and other types of OER initiatives it is crucial to reflect on both the overall role that higher education is expected to play in this particular moment of history and the mission of individual universities, taking into account the wider policy frameworks and political systems in which they operate, as well as the action of influential actors moved by a mix of philanthropic and commercial purposes.

9.3 Looking through a practice lens at OCW initiatives as STINs

Approaching OCW initiatives as socio-technical arrangements, namely as STINs, allowed me to get a detailed understanding of the way similar ICTs may be embedded in different cultural and institutional contexts, leading to the emergence

of diverse scenarios. Furthermore, by tracing the development of these initiatives, along with the wider information ecologies in which they are nested, over time I was able to gain insight into how behaviour patterns and other social structures co-evolved with ICTs as they were enacted.

Instead of focusing on ICTs and trying to understand how humans activate the affordances that are supposedly embedded into them, a practice lens “starts with human action and examines how it enacts emergent structures through recurrent interaction with the technology at hand” (Orlikowski 2000, p.407). In this case, I focused on the action of making educational resources available to the public on the Web. Although the focus was on a specific model of OER provision, I also interviewed scholars who relied on technological means other than OCW platforms for that purpose.

Authors attached different roles and meanings to the release of online educational resources and the associated ICTs, leading to different configurations “dependent in part on situated contexts and elements such as the task, roles, timing, nature of interdependencies, particular ICTs being used, and goals” (Sawyer & Tyworth 2006, p.54). Likewise, university leaders, managers and content creators saw OCW initiatives as means for pursuing different ends.

As dictated by the STIN heuristics (Kling et al. 2003), I identified relevant actors (both collective and individual), excluded groups, communication protocols, design choice points, resource flows, incentives and deterring factors. Drawing on the data generated after following this roadmap I will address over the next three sections the main research questions guiding the study.

9.4 Comparative overview

Spain's higher education arena stands out as one of the settings in which OCW initiatives have proliferated more widely. In 2007, just one year after the OCW Global Consortium was established, Universia – a joint initiative of the Santander Group and higher education institutions in the Ibero American area – founded a regional consortium with the aim of fostering the adoption of the OCW model of OER provision. Over the next few years more than 40 Spanish universities joined the consortium and about 30 of them actually launched an OCW site. The levels of affiliation with the consortium and the release of OCW modules were particularly high during the first few years, when Universia was developing a more intense advocacy work.

The range of mechanisms implemented by universities with the aim of encouraging participation among their faculty members varied to a considerable extent across universities, achieving diverse levels of success. While there were some universities that released more than a hundred modules over the following years, others barely met the minimum requirement of ten modules established by the OCW Consortium. While some universities decided to prioritise quantity, others preferred to create less but more elaborate modules. It is also noteworthy that some universities had not even launched their OCW site some years after signing the memorandum.

As noted by Bryman (2008, p.58), “we can understand social phenomena better when they are compared in relation to two or more meaningful contrasting cases or situations.” In this thesis I have focused on three universities that are located in one of the 17 Spanish regions. While two of them were similar in size and age, with both among the largest and oldest universities in Spain, the other

one was much newer and smaller. As for the release of OCW modules at such universities, they showed varying levels of engagement among their faculty members – relatively high, moderate and low.

The two largest universities showed sharply contrasting levels of activity. While there were only some 20 modules available at UNI-B's OCW site, faculty members at UNI-G created more than 200 modules. UNI-F was in a middle ground position, with about 40 modules available on its OCW site. Above 10% of scholars at UNI-G (i.e. more than 400) had been involved in the release of OCW modules. In the case of UNI-F the levels were considerably lower, both in absolute and relative terms, as there were about 60 scholars (3%) who had contributed to the initiative. As for UNI-B, the levels of participation were almost negligible, with just some 30 scholars (less than 1%) involved in the creation of OCW modules.

Although the creation of OCW modules tended to be a one-off activity at the three universities, there were significant differences in this respect. While only about 10% of OCW authors at both UNI-B and UNI-F had contributed with the creation of more than one module, in the case of UNI-G about 20% of OCW authors had been involved in the creation of several modules.

The creation of OCW modules can be approached as either an individual or a collective endeavour. Most of the OCW modules created at both UNI-B and UNI-G were the result of individual scholars working on their own. On the contrary, about 60% of the OCW modules created at UNI-F were collaborative works.

Besides authors themselves, there are also other types of actors who play a key role in the design, implementation and management of OCW initiatives. In particular, university leaders, officers and other support staff may affect the provision of OER with their decisions and actions. In the case of Spain there are

two key organisations outside individual universities, namely Universia and ANECA, that were extremely influential in the provision of OCW content. While the former is an organisation that relies almost exclusively on private funding provided by a financial group, namely Santander, the latter is a quasi-autonomous body that operates under the supervision of the Ministry of Education.

Apart from encouraging university leaders to launch OCW initiatives, Universia – in collaboration with Spain’s Ministry of Education – rewarded both universities and faculty members for the development of high quality materials. None of the three universities covered in the study won any of these awards. However, UNI-F and UNI-G publicised the calls quite actively with the aim of encouraging participation among their faculty members.

As for ANECA, the criteria for the assessment of scholars’ performance did not favour the provision of OER at all. On the contrary, it may be argued that they worked primarily as a hindering factor. Since ANECA operates at a state level, the creation of OCW modules within the three universities was highly influenced by this body. Nevertheless, both UNI-F and UNI-G tried to make the most of this framework when aiming to foster participation. In particular, they provided authors with a certificate of participation that could be of use in the context of ANECA’s evaluation processes. Furthermore, during the first stages of its OCW initiative, UNI-G published the content via CD-ROM, which allowed them to assign an ISBN code to the materials, something that could be also beneficial in accreditation processes.

At a technical level, the OCW sites of both UNI-B and UNI-F relied on Moodle, the same open source system that was chosen to power their respective VLEs. On the contrary, UNI-G chose other solutions, which were also different from the

system powering its VLE. In this regard, the workload for technicians associated with the release of OCW modules was higher at UNI-G than at the two other universities, where authors were required to follow a self-archiving protocol.

The amount of resources allocated at each of the three universities to their respective OCW initiatives varied to a considerable extent too. In consequence, there were substantial differences with regard to the mechanisms implemented with the aim of encouraging participation as well as the types of support provided to authors. UNI-G focused primarily on providing authors with technical assistance in the development of materials, which required hiring a team of technicians specifically dedicated to supporting the creation of online materials for the VLE and, only as a by-product, OCW modules. Likewise, at an early stage authors were also provided with technical equipment. UNI-F secured economic resources aimed at rewarding the work of authors who had developed outstanding OCW modules. As for UNI-B, resources were mainly devoted to the technical development of the site.

9.5 What is the role of OCW initiatives in the strategic orientation of universities?

The proliferation of OCW initiatives at Spanish universities has been largely influenced by Universia and must be understood within a wider framework of philanthropic and commercial actions undertaken by the Santander Group over the last 15 years or so. Taking this into account, the implementation of OCW initiatives can be regarded as the result of neither top-down pressures (by any of the public bodies regulating or supporting Spain's higher education sector) nor bottom-up concerns emerging from universities themselves. On the contrary, it was instigated by the advocacy efforts of an entity that, in spite of incorporating

universities as shareholders, is not itself one of the constituting actors of Spain's higher education system.

Aiming to prompt the involvement of Spanish universities in the provision of OCW materials, Universia underscored five main positive outcomes that universities' leaders could expect after launching an OCW initiative (see Chapter 5).

According to those in charge of devising and initiating the OCW Universia Consortium, the university leaders of Spanish universities were particularly interested in OCW initiatives as something that could be beneficial in terms of marketing and branding purposes. In other words, a key driving force was the assumption that "it is good for public relations and it can function as a showcase to attract new students [...] who may be more likely to enrol – and therefore pay for tutoring and accreditation – when they have had a taste of the learning on offer through open content" (Hylèn 2007, pp.64–5).

In tune with this, the decision-makers at the three universities that I examined saw the provision of OCW content as an opportunity for attracting prospective students and, more generally, for strengthening the reputation of teaching at their institution. However, their OCW initiatives were largely disconnected from any corporate communications strategy. In this regard, it is noteworthy that none of these universities monitored the impact of their OCW initiatives in any systematic way. Moreover, their OCW initiatives were not funded by means of any budgetary scheme associated with communications policies.

Even though Universia stressed the potential of OCW initiatives in relation to corporate communications and despite the importance of this aspect in the discourse of university leaders, the actual configuration of Spain's higher

education system makes these arguments irrelevant. In this regard, it is important to take into account the low level of competition for prospective students. In this regard, the need for marketing strategies has been traditionally low among Spanish universities. Indeed, it is remarkable that among private universities, which rely more heavily on student fees, the overall levels of affiliation with the Universia OCW Consortium and attention to OER were significantly lower.

As for branding purposes in a more general sense, namely in terms of reputation-building, OCW initiatives are only likely to play a minor role, given that “the prestige of public universities [in Spain] depends more on their tradition and the quantity and quality of their inputs than on the result of their performance” (Santiago et al. 2009, p.65).

From a budgetary and operational point of view, the OCW initiatives under examination were associated with structures and schemes devoted to supporting teaching and, more specifically, to fostering the involvement of faculty members in e-learning, the uptake of educational technologies and/or innovative practices in teaching. As suggested by the second argument stressed by Universia, participants in the OCW initiative were expected to increase the quality of their teaching materials. At least, it was supposed to be the logical response to the pressures of being exposed to a wider audience (Pernías & Marco 2007). However, in reality much of the content available at the three initiatives under examination primarily consisted of slides that faculty were already using as a lecturing aid in their face-to-face teaching.

Although many of the arguments presented by Universia when attempting to encourage participation pointed to a potential improvement in teaching practices and other benefits for communities situated within the boundaries of universities,

the core assumption underpinning the implementation of OCW initiatives – in Spain and elsewhere – is that the main beneficiaries are situated outside academic institutions. That is, the idea is that OCW content and more generally OER could help to democratise access to higher education, being of special value to those who have been traditionally excluded from access to it, most notably citizens from developing countries (Materu 2004; Oblinger & Lombardi 2008; Vest 2004). However, such an idea is increasingly being challenged (Guri-Rosenblit 2005; Hatakka 2009).

Interestingly enough, despite their responsibility in the launch of the OCW initiatives at their respective universities, some of the decision-makers that I interviewed minimised the potential for ‘democratising’ access to education, as they were rather hesitant about the actual readiness of those target populations to engage in self-directed learning based on OCW content. Instead, they argued that those in a better position to benefit from such initiatives were people who had already gained access to higher education in the past, especially graduates who wanted to revise educational materials or keep up to date with new information.

Universia’s officials also considered that some sort of peer-pressure or competition between universities had played an important role in the proliferation of OCW initiatives in Spain. The relatively large number of universities that joined the OCW Universia Consortium could be then explained as a process of *institutional isomorphism*, according to which universities would tend to mimic the behaviour of fellow organisations in an attempt to “compete not just for resources and customers, but for political power and institutional legitimacy, for social as well as economic fitness” (DiMaggio & Powell 1983, p.150). Some of the leaders at

the universities under study acknowledged that they had paid attention to the activity of other Spanish universities with regard to the provision of OCW modules.

Nevertheless, while this might have an impact on the launch of the initiatives, the actual pressures for spending resources on developing an active OCW initiative seemed to be rather limited. Indeed, most universities in Spain had only released a relatively small amount of content in their OCW sites (see Chapter 5). Moreover, some of the first universities that joined the consortium had not even launched an OCW site at all a few years after joining. It is also noteworthy that most universities in the OCW Universia Consortium joined at an early stage, which somehow refutes the idea that the larger the number of universities in the consortium the stronger the pressures for the rest to get involved too, and instead suggests that there was a certain amount of pressure simply to join in on the latest trend.

The level of integration of OCW initiatives into the strategic orientation of each of the universities under study, as well as the amount of resources allocated to them, varied to a considerable extent. Even though UNI-G and UNI-B are similar in both size and age, the state of development of their OCW initiatives was substantially different each other. While the former had one of the most active OCW sites in Spain, with more than 200 modules, the latter was not offering much content and had only attracted the participation of a few authors.

UNI-G's OCW initiative was mentioned in several strategic documents (e.g. the election manifestos of the last two vice-chancellors). Beyond rhetoric, a considerable amount of resources was devoted to encouraging and supporting participation over a few academic years, namely by means of formal aid schemes and the availability of staff. Most notably, during the academic year 2009-10 it was compulsory to release educational content through that platform for any scholar

wishing to get technical assistance in the development of content for their students.

On the contrary, UNI-B's OCW initiative was not embedded into any strategic scheme. Moreover, unlike in many other universities, the decision-making process behind the launch of the initiative did not take place at the university's governance board. Instead, it was mainly the result of the interest of the directors of a specific organisational unit, namely the e-learning services. In general, the economic resources allocated to the initiative were very limited and they were entirely dedicated to covering operational costs (i.e. hiring an intern responsible for developing and managing the site). Although the work of a few of the first participants was rewarded thanks to the sponsorship of a company, the awards were not explicitly used as a way of encouraging participation. Indeed, the prizes were not announced in advance.

UNI-F, a much newer and smaller university, lies somewhere between UNI-B and UNI-G with regard to both the level of development of its OCW initiative and the alignment with its overall strategic orientation. The decision to launch an OCW initiative took place at UNI-F's governing board and the pro-vice-chancellor for Innovation and IT was charged with the task of setting it in motion. Apart from developing the technical implementation of the platform, the scheme for the creation of online materials, already in place by then, was used with the aim of fostering participation in the OCW initiative. An economic incentive rewarded authors who had authored high quality materials, while certificates of participation were issued for everyone contributing content. In any case, the amount of resources devoted to the project was considerably smaller than at UNI-

G, especially with regard to the number of technical staff available for providing authors with support.

Beyond the actual role that OCW initiatives could play in these universities as a means of pursuing some of the above-mentioned goals, the idea of engaging in Universia's proposal must be understood as a strategic action in its own right. As I have argued before, from a strategic point of view there were not many clear incentives for university leaders in Spain to spend a lot of resources on this type of initiative. However, it seems plausible to think that this collaboration could help universities to indirectly nurture their overall relationships with Santander as a key stakeholder, which may indeed play different relevant roles (e.g. sponsor, lender, investor, etc.).

Apart from the relationships at an inter-organisational level, the implementation of OCW initiatives depended to a considerable extent on the concerns and situation of specific individuals. In this regard, it is noteworthy that the vice-chancellors of UNI-F and UNI-G joined the board of directors of Universia Spain S.A. at the time when the OCW Universia Consortium was at an early stage.

Regardless of the more or less central role that OCW initiatives played in the strategic orientation of these universities, a common aspect is that the level of institutional support declined after the initial impetus. In particular, the loss of momentum of OCW initiatives at UNI-G and UNI-F coincided with changes in their respective governing boards.

The rise of the university extension movement in the XIX century was an innovation resulting from the need of reaching a wider audience and benefitting citizens in more direct ways, a measure ultimately aimed at neutralising a potential reform instigated by provincial middle classes who were increasingly

disenchanted with the social role of universities and angered by the cost of maintaining them (Goldman 1995). More than one century after that, at the end of the XX century, the MIT started to develop its OCW initiative in response to a new educational environment shaped by the Internet (Abelson 2008).

Whereas the decision-making of the university leaders who were behind such initiatives shifted the strategic orientation of their universities, the provision of OCW content at Spanish universities was a rather marginal activity in this regard. Taking into account the overall configuration of Spain's higher education system and the funding mechanisms, these kinds of initiatives can only have very little impact on the overall functioning of universities.

9.6 To what extent does the implementation of OCW initiatives increase awareness of OER and contribute to the adoption of OER-based practices?

Apart from some notable exceptions, the level of awareness of the philosophical, legal and technical principles underpinning the notion of OER was quite limited among the authors that I interviewed at the three universities. It is worth stressing that I purposely recruited those authors because of their relatively high level of involvement in the release of educational content on the Web. Therefore, it seems plausible to think that the overall levels of awareness among the majority of scholars at such universities might be even lower than in this purposive sample.

One of the most surprising findings is that 'open' was often interpreted simply as 'publicly available.' In that respect, the authors tended to see participation in an OCW initiative – and, more generally, the archiving of educational content in online repositories or other types of web sites – just as a

way of making their work visible for a wider audience of learners, educators and society at large.

However, they did not have a precise understanding of the kinds of uses and activities allowed by the open licences that defined the conditions of access to their content once released on an OCW site. For instance, one of the authors who had self-archived a considerable amount of OER at UNI-F's online repository was somehow upset after discovering that someone had posted some of his content on another web site without seeking his approval first. However, the type of Creative Commons licence assigned to the content allowed such a thing. Even more surprisingly, one of the OCW authors that I interviewed at UNI-G was disconcerted at hearing in the course of our conversation that his modules were accessible to people outside UNI-G.

Although these are two extreme cases, they illustrated that asking authors to sign a contract that gives permission for the distribution of their materials under a Creative Commons licence does not necessarily ensure that they will get a clear understanding of the actual implications. Indeed, only a few of the interviewees could be said to be knowledgeable about such legal aspects. In this regard, even though they were engaged in the provision of OER, many of them were not fully aware of the legal implications. That is, they tended to see such activity just as a matter of making educational resources available on the Web, without paying much attention to the types of actions allowed by the open licences under which the content was released.

UNI-B was the only of the three universities under study that accompanied the launch of its OCW initiative with a series of workshops aimed at raising awareness of the historic, legal, technical and philosophical implications of OER.

However, while there were incentives for attending the workshop, especially for early-career scholars, participants did not have any direct incentive for contributing to the OCW initiative or releasing OER at UNI-B's online repository. In general, the main reason why interviewees had participated in UNI-B's OCW was to do with the fact that they had some sort of pre-existing social ties with members of the unit that was in charge of implementing the initiative or that they had been personally approached.

Interestingly enough, those interviewees at the three universities who were more knowledgeable about OER or who were particularly concerned with the idea of making content available to the public did not rely exclusively on their universities' OCW initiatives. They relied on online repositories and web pages provided by their respective universities or even by services powered by third parties (e.g. Academic.edu, Slideshare, YouTube, etc.). It is also noteworthy that those authors who were particularly concerned with this issue had mainly not become aware of things such as the Creative Commons licences simply due to actions undertaken by their universities. Instead, for instance, one of the interviewees at UNI-F said that it was thanks to her son that she first got introduced to the Creative Commons licenses, while others pointed that they approached the idea of OER due to their interest in free software.

According to some interviewees, one of the main factors that might explain the overall limited engagement of faculty members in the release of OER was the lack of awareness of it. Indeed, some university leaders blamed themselves for not having developed adequate communication strategies accompanying the OCW initiatives.

Beyond the impact of OCW initiatives on the development of awareness of OER, it is important to look at their influence at a behavioural level. But if we are to fully grasp whether the implementation of OCW initiatives played a central role, or not, in the promotion of OER-based practices at the universities under study it is crucial to reflect first on the very notion of practice(s). As argued in Chapter 3, 'practices' can be understood as complex constellations of routinized activity or behaviour. They involve repetition. In other words, "recursiveness (or reproduction) is the feature that distinguishes practice from action" (Corradi et al. 2010, p.278).

One of the main challenges of adopting a practice-based lens is to determine the point when certain "arrays of activity" (Schatzki 2001) can start to be regarded as practices. There is not a minimum level of frequency, as it will vary from practice to practice. In any case, the creation of OCW content at the universities under study can hardly be considered a practice. On the contrary, it tends to be a rather sporadic or even one-off activity. Even at UNI-G, where the level of participation was higher, only about 20% of scholars involved in the release of OCW had contributed more than once. Participation in the OCW initiatives of the three universities was still something unusual among those who were considerably more active than their peers, as I will discuss in more detail in the next section.

It is noteworthy that the most active interviewees, in terms of making their educational resources available to the public on a regular basis, relied primarily on platforms and services others than the OCW sites (i.e. repositories, personal sites, video-sharing web sites, etc.). Indeed, they were engaged in such practices regardless of the OCW initiatives.

Therefore, even though the implementation of OCW initiatives at these universities prompted the release of OER with varying degrees of success, it must be regarded as a series of rather isolated actions instead of as recursive activities or practices. Decision-makers acknowledged the disappointment with the overall levels of engagement in such initiatives, often blaming themselves for that.

Besides the provision of content, the idea of OER-based practices also refers to the use and re-use of this type of content. In this regard, it is remarkable that the participants in the study reported very marginal levels of use in their teaching of OER authored by others. A few of them stated that they had consulted the OCW sites of other universities in order to get a better understanding of the type of materials that they were expected to generate, but only before doing so. However, they were not regular users of OCW content themselves. In this regard, it may be argued that the implementation of OCW initiatives did not lead to major changes with regard to the types of educational resources that faculty use in their teaching.

9.7 How do authors perceive the creation of OCW modules and OER in relation to their professional activities?

Even though the creation of OCW content at the three universities under study can be hardly considered as a practice in its own right, it is important to understand this activity in relation to a wider framework of teaching practices, in particular those relating to the creation of teaching materials.

In the previous section I discussed the challenges of determining when a certain constellation of activities can be regarded as a practice. Another relevant issue is how to draw boundaries that allow us to study specific practices without detaching them from other relevant practices in which they might be nested. In

other words: “One of the problems with applying practice theories is defining where one practice ends and another starts” (Cox 2012, p.8).

The provision of OCW content at these universities has to be understood in relation to a wider range of pedagogical practices that revolve around the creation of educational materials by faculty members for their students. Whether they are primarily devised for use in the classroom or for access via a VLE, their subsequent release on the public Web is a by-product. Indeed, the incentive mechanisms implemented with the aim of fostering participation in the OCW initiatives of UNI-G and UNI-F were built on top of pre-existing schemes associated with the creation of online educational materials.

Whereas the interviewees tended to see the creation of educational resources as a core dimension to their job as scholars, the type of materials that they generated varied widely across disciplines and individuals. Nevertheless, a common aspect is that they tended to see themselves as far more committed to the creation of materials than their peers.

Moreover, they believed that the creation of educational materials was largely undervalued in comparison to other indicators of performance, most notably research publications. While research performance plays a key role in the context of accreditation processes, teaching is only measured and recognised in terms of amount of experience – i.e. as indicated by the number of credits taught or years in the profession. As noted by Cuban (2012):

In those institutions where faculty are expected to do research and publish, the incentives of tenure and promotion drive faculty behavior. Professors are rewarded for spending far more time on research than spending time on developing and teaching student-centric courses and learning communities.

In this regard, some interviewees felt that their excessive level of commitment to teaching and to the creation of non-standard scholarly publications (e.g. blogs, webs, etc.) had a negative impact on their opportunities for career development.

If there are few rewards for spending time and putting effort into the creation of educational resources – unless published as a traditional textbook – the incentives for making materials available to the public on the Web are even fewer. Those authors whose materials were elaborate and lengthy enough had certainly more incentives to try to publish them as a conventional textbook. Besides the potential revenues from sales, the most relevant motivations associated with the fact of disseminating learning materials via a publishing house are to do with reputation and ANECA's evaluation processes.

The university leaders of the three settings under study devised different types of mechanisms aimed at fostering participation. At UNI-B the incentives were not associated with the actual creation of content, but with participation in a workshop aimed at making faculty members knowledgeable about the principles underlying the OER movement, as well as helping them to develop the technical skills required for participation in the initiative. University leaders at UNI-F allocated some funds with the aim of rewarding the work of some faculty members who had developed outstanding OCW modules and provided all participants with a certificate proving the contribution, which might be of use for those aspiring to get an accreditation from ANECA.

At UNI-G there were two main incentives. First, participants received documents proving their participation, which could be of use for faculty in the course of ANECA's accreditation processes. Second, participants were provided

with personalised support by a team of technicians while developing the materials. It is noteworthy that during one academic year all faculty members at UNI-G wishing to get technical assistance in the development of content for the VLE were required, in return, to make their materials available in the OCW site. That was the most prolific year in terms of number of modules produced.

The incentive mechanisms at the three universities gradually disappeared or at least lost their specific focus on the production of OCW content, leading to a decrease in the levels of participation. Nevertheless, the main factor constraining participation was not the lack of specific incentives, but the incompatibilities of the OCW model of OER provision with the institutional arrangements that shape the activity of scholars.

When teaching in the classroom, or even behind the virtual 'doors' of a VLE, faculty may rely to a considerable extent on resources created by third parties. However, those participating in an OCW initiative were required to generate enough resources to cover the entire content of a one-term course. This contradiction between common practices and the requirements of the OCW model had a direct impact on the levels of participation. Indeed, some of the university leaders involved in the launch of OCW initiatives at these universities recognised that they had not contributed with any content for that very reason.

Even though in practice the quality controls were rather relaxed and many authors based their OCW modules primarily on slides that had been devised as a lecturing aid, participation in the OCW initiative means for most scholars too much of a deviation from other competing tasks and priorities. In this regard, it is noteworthy that participation was less taxing for those authors who were teaching students outside their own discipline (e.g. a sociologist teaching to business

students or a lawyer teaching to engineers) or those who had been in charge of developing a new subject that was not offered at many other universities yet, given that they had to invest time in developing comprehensive materials aimed at their own students.

To sum up, interviewees perceived the creation of OCW modules and, more generally, the release of OER as something ancillary to their professional practices as educators. Even though some of them stressed that engaging in such activity was in line with their own personal values and beliefs about the role that universities should play in contemporary societies, all the interviewees who had engaged in the creation of OCW modules were ultimately driven by other underlying factors. In particular, they were motivated by an interest in some of the direct incentives, by social pressures after being personally approached by some of the actors in charge of the initiatives or because they themselves were involved in the running of the an OCW site and, thus, felt the obligation of setting an example.

On the contrary, those who were particularly concerned with the idea of facilitating self-directed learning opportunities to society at large were already making their educational materials available on the Web by means of other platforms or services, whether officially supported by their universities or not.

9.8 Framing the findings within Social Informatics research

The conclusions emerging from this empirical study are consistent with the assumptions and the cumulative body of knowledge generated in the Social Informatics field over the last decades. In particular, this study uncovered some of the main problems or difficulties that may arise when an ICT-based initiative that was originally designed in a specific setting such as MIT is extrapolated to a very different context, in this particular case at three Spanish universities. In this

regard, the idea of *embeddedness* is key (Kling et al. 2005; Rosenbaum 2009). That is, the development of OCW initiatives as socio-technical arrangements can be only understood by paying careful attention to the institutional and cultural contexts in which their actual design and use take place.

Spain's higher education system is a highly regulated environment where different layers of policies and norms determine the activity of universities and shape the behaviour of academics to a considerable extent. Most notably, professional performance is assessed in accordance with a set of criteria defined at a state level. Even though there is a considerable level of heterogeneity with regard to the size, age and operational funding of universities, according to a report elaborated by the OECD they "tend to imitate what others do rather than have developmental policies and plans of their own" (Santiago et al. 2009, p.64). In this respect, beyond the rhetoric level, the actual motivations for universities to outline their own and distinct strategic orientation are rather limited, at least as compared to other higher education systems.

Even though each of the universities under study chose different technical solutions and implemented their own mechanisms with the aim of encouraging participation, the defining characteristics of the OCW model of OER provision were largely at odds with the wide range of competing priorities that scholars at Spanish universities must address as part of their professional activity. Whereas scholars are often involved in the creation of materials aimed at facilitating the learning of their students, they tend to be fragmented pieces that are combined with a wide range of materials created by other authors. However, OCW initiatives are based on the idea of releasing materials that cover the entire content of a given module. Some universities tried to compensate for this with a number of incentives and

support systems aimed at encouraging engagement, but at the end of the day universities had no reasons for sustaining those mechanisms over time after Universia's initial advocacy efforts.

Besides the homogeneity of the system at a state and regional levels, the particularities of each specific university gave room for the unfolding of diverse forms of localisation of the OCW model. In this regard, the actual articulation of socio-technical networks generated around the release of OCW content at each of the universities was the result of a *duality* emerging from the interplay between technologies and human action. Nevertheless, even within one particular setting there were multiple ways of interpreting and enacting OCW sites. That is, the meaning associated with such initiatives depended directly on the values, roles and priorities of individuals.

While some actors were primarily motivated by the idea of benefitting from potential rewards resulting from the release of OCW content, others had more freedom to engage in such practice regardless of any potential incentives. Likewise, while some actors perceived as a burden the new social interactions potentially enabled by these initiatives (e.g. communication with learners and educators elsewhere), others welcomed them as a new opportunity for communicating with a wider community.

The *configuration* of ICT-based practices around the release of OCW content take place at micro level, meaning that there were considerable differences not only with regard to the way participation was interpreted, but also in terms of the kinds of materials that could integrate an OCW module. Most notably, a broad distinction may be made between highly elaborate OER and materials that could be hardly considered as self-contained resources. While the former were mainly

based on materials that had been originally conceived as learning resources to be used by students on their own time, the latter were primarily formed by teaching materials designed by scholars for instance as a lecturing aid.

Probably the most relevant finding of Social Informatics research is that ICT driven initiatives rarely lead by themselves to deep social transformations. As illustrated by the OCW initiatives that I have studied in this thesis, the mere availability of ICTs on their own at educational settings does not lead to the emergence or institutionalisation of disruptive practices. In this regard, it is noticeable that the level of participation of scholars in the three initiatives under study decreased in parallel with the reduction of stimuli. Even though scholars still had the possibility of using the OCW site to release their materials, that was not of interest as an end in itself.

This study contributes to advancing the three orientations of Social Informatics research: normative, analytical and critical. The conclusions emerging from the study should be useful to practitioners and decision-makers concerned with the release of educational materials as OER. The main recommendation aimed at this group is to design a model of OER provision that takes into consideration the specificities of universities and the wider higher education systems in which they operate. Even though the OCW model has proved to be a successful way of pursuing MIT's goals, replicating the same strategy with little or no localisation is likely to prompt very different results.

In analytical terms, even though the study focuses on just three particular settings, the lessons learned from them may be valuable when approaching other cases. In this regard, it offers the basis for theoretical generalisations that not only

explain situated behaviour, but also offer insights that can be useful for understanding similar dynamics taking place at different organisational contexts.

The critical orientation is core to this study too, especially taking into account that – unlike much of the OER literature – it does not aim to focus on cases of best practice. In this regard, it paid especial attention to the conflicts and paradoxes that emerge as the aspirations of OCW supporters and authors play out differently in the everyday realities and institutional contexts of diverse organisations.

9.9 Conclusions, recommendations and future directions

Spain stands out as one of the top countries in terms of number of universities affiliated with the OCW Global Consortium and number of universities who have actually launched an OCW site after joining the consortium. However, the provision of OER – and more specifically OCW content – can only be regarded as a marginal activity within Spain's HE arena. Overall, there are very few real incentives for university leaders and faculty members to engage in the provision of these kinds of educational services.

Even though technologies may enable certain actions, such as the release of online educational resources, actual ICT-based practices and their consequences are always modulated by social structures and institutional arrangements. Similar technologies – in this case OCW platforms – are enacted and interpreted differently by actors across diverse settings and even within the same groups, prompting the emergence of diverse kinds of socio-technical arrangements.

University leaders often perceive OCW initiatives as valuable marketing and reputation-building devices. Indeed, this is one of the aspects that Universia stressed the most when trying to encourage Spanish universities to get involved in its regional consortium. Nevertheless, the configuration of Spain's higher

education system at a state level as well as other cultural aspects relating to access to tertiary education have rendered such potential virtually irrelevant for the moment. Most notably, even though the number of enrolled students is the most influential factor in determining the operational budget of universities, corporate communication strategies have traditionally played a minor role in the recruitment of students as compared to other factors, mainly the geographical proximity between universities and students' home towns.

Nevertheless, the current context of scarcity and the increasing interest in attracting international students could perhaps give a more prominent role to OER initiatives in the upcoming years, most likely by means of forms of provision that are also compatible with some sort of revenue generation – such as MOOCs where participants have to pay for formal assessment and certification processes.

As for faculty members, even in spite of the incentives implemented by some universities and the awards jointly offered by Universia and the Ministry of Education with the aim of rewarding high quality OCW modules, they must prioritise other types of activities. A key factor in this regard is that the processes of evaluation of academics' performance do not value the release of online educational materials on the public Web in its own right. Moreover, besides the release of content, the main barrier is that the creation of content suitable for OCW initiatives is not embedded into the everyday activity of scholars. Even though many academics develop materials aimed at enhancing the learning process of their students, they usually do not feel the need to develop all the materials covering an entire module, as required by the OCW mode of OER provision.

In addition, most scholars face pressures to prioritise other types of activities, especially those at an earlier stage in their careers. Universities may

develop schemes aimed at compensating for this by providing incentives or assistance in the creation or adaptation of content suitable for publication in an OCW site. However, local measures in this higher education context are outweighed by the policy frameworks that operate at a system-wide level. In other words, university leaders have little room to foster scholarly practices that are not explicitly contained in the evaluation and accreditation schemes defined at a state level.

Furthermore, it is noteworthy that local initiatives may have very little impact on the overall levels of awareness of OER among faculty members and even participants. Indeed, the act of contributing to an OCW initiative does not guarantee a minimum level of awareness of the basic principles underlying the OER movement. Furthermore, the implementation of training activities aimed at raising awareness or literacy in relation to OER do not necessarily lead to higher levels of participation.

Unsurprisingly, once local incentives and/or technical assistance available to authors are discontinued, then the activity of OCW initiatives decreases rapidly. Taking into account the overall characteristics of Spain's higher education arena, the long-term sustainability of OCW initiatives seems to be rather unfeasible. In this regard, for those university leaders interested in fostering the creation of OER it would be more advisable to implement initiatives that allow scholars to release smaller learning objects, instead of requiring them to generate materials that cover all the content of an entire course. Nevertheless, one of the key findings of this study is that those scholars who are particularly concerned with the idea of making their teaching resources available on the public Web do not need the support of their universities to do so, as they already rely on a wide range of pre-

existing services – whether provided by their universities or available elsewhere. In order to capitalise on the work of such scholars and broaden participation it is important for university leaders to provide clear benefits for contributing. After all, what most faculty members seek when participating in an OCW initiative is to enhance their opportunities for future career development, whether directly or indirectly.

Some of the university leaders that I interviewed in this study reported they were dissatisfied with the overall levels of involvement of faculty members at their universities in the creation of OCW materials. Even though neither the OCW Global Consortium nor the OCW Universia Consortium require affiliate universities to generate more than ten modules in total, many universities seem to prioritise quantity over quality when it comes to building OCW initiatives. Indeed, quality control protocols are rather limited and, if any, tend to be concerned just with technical aspects. In order to ensure the value and continuity of OCW initiatives, it would be advisable to devote all the resources available to supporting the production of a reduced number of highly elaborate OCW modules a year. Only very few universities seem to follow such an approach, relying for instance on annual calls aimed at selecting high quality proposals of OCW modules. The authors of successful proposals may be rewarded with incentives and/or provided with extra resources in order to develop materials for the modules.

Beyond fostering the release of content, for those universities interested in positioning themselves in line with the OER movement it would be essential to promote a wider range of scholarly practices articulated around the discovery, use, re-use and adaptation of this type of resource. In this respect, it is crucial to

provide faculty with training opportunities and information about the values and principles that underpin such movement.

In any case, it is paramount to see OER always as a means rather than an end in itself. In this regard, while the OER movement is often justified as an endeavour aimed at advancing the ideal of access to education as a universal right, it is crucial to adopt a critical view that enables us to identify those circumstances in which OER initiatives might be instead widening any educational or social divide (e.g. by favouring the existence of a two-tiered system). As suggested by some participants in the study, those with a background in higher education seem to be in a better position to benefit from OCW initiatives or any other OER than those who have been traditionally excluded from tertiary education. Therefore, it is key that universities commit to the provision of a wider range of initiatives aimed at extending the reach of its activity, making sure that it has an impact on sectors of society that are not in a position to approach universities, whether physically or remotely. In line with this, it is key that universities implement mechanisms aimed at monitoring the impact of their OER initiatives in both quantitative and qualitative terms, gaining insight into who are those that are actually benefiting from them.

Nonetheless, further research is still needed in order to understand the positioning of universities and individual scholars in relation to the release of educational resources by means of the public Web and, more specifically, with regard to OER initiatives. Although OER research is rapidly growing as a field in its own right, for the moment it has remained largely under-theorised. The theoretical framework adopted in this thesis to approach OCW initiatives as a socio-technical

constructs may prove valuable when studying other phenomena associated with the design, uses and consequences of OER.

Much research on OER has been conducted by the teams who were involved in the implementation of the initiatives under study. Although action-research designs may offer very valuable insights, it is also crucial to foster independent research that is able to generate critical insights by minimising the perils of being affected by any vested interests.

In the case of Spain, where the activity of OCW initiatives has already peaked and seems to be now entering a phase of decline, it will be interesting to assess the extent to which a new generation of OER initiatives – mainly the so-called MOOCs – are drawing on pre-existing structures. This is of particular relevance in a context where the impetus of these kinds of initiatives seems to rely too often on the interests of individual leaders, which may compromise the continuity of relevant schemes whenever they leave office.

As in the case of OCW modules, Spanish universities have also embarked enthusiastically on the creation of MOOCs. According to the MOOCs scoreboard of the Open Education Europa project (European Commission 2014), Spain is leading the provision of these type of academic activities in Europe with 198 courses offered so far, followed by the UK ($n = 92$) and France ($n = 63$) and Germany ($n = 55$). Interestingly, Universia and the Santander Group – now in collaboration with Telefonica – are again playing a key role in the field, as they have developed a platform aimed at facilitating the organisation of MOOCs for Ibero American universities.

Hopefully this thesis will offer a useful basis for the development of future studies in this exciting realm and, more generally, the fast growing field of OER research.

10 References

- Abadal Falgueras, E. et al., 2013. Políticas de acceso abierto a la ciencia en las universidades españolas. *Revista española de documentación científica*, 36(2), pp.10–15.
- Abdulwahed, M., Nagy, Z.K. & Crawford, A.R., 2012. Development and evaluation of open educational resources for enhancing engineering students' learning experience. In *Proceedings of IEEE International Conference on Teaching, Assessment, and Learning for Engineering, TALE 2012*. pp. H4C14–H4C18.
- Abelson, H., 2008. The Creation of OpenCourseWare at MIT. *Journal of Science Education and Technology*, 17(2), pp.164–174.
- Alevizou, G., 2012. The dark side of the knowledge commons?: Open educational media and tensions surrounding autonomy and novel spheres of control. In *ECREA 2012 Pre-Conference: Imposing Freedoms: The Role of Copyright, Privacy and Censorship Governance in the Re/definition of Rights in Digital Media*. Istanbul, Turkey.
- Altbach, P.G., Reisberg, L. & Rumbley, L.E., 2009. Trends in Global Higher Education: Tracking an Academic Revolution, UNESCO.
- ANECA, 2008. Programa Academia: Principios y Orientaciones para la Aplicación de los Criterios de Evaluación.
- ANECA, 2007. Programa de Evaluación del Profesorado para la Contratación: Principios y Orientaciones para la Aplicación de los Criterios de Evaluación.
- Anglada, L. & Abadal, E. eds., 2010. *Open access in Southern European Countries*, Madrid, Spain: Fundacion Española para la Ciencia y la Tecnología (FECYT).
- Anon, 2007. Minutes of the meeting Universia OCW 15 Nov 2007. Universidad Carlos III, Madrid.
- Aranzadi, P. & Capdevila, R., 2011. Open Course Ware, recursos compartidos y conocimiento distribuido. *La Cuestión Universitaria*, 7, pp.126 – 133.
- Atkins, D.E., Brown, J.S. & Hammond, A.L., 2007. *A review of the open educational resources (OER) movement: Achievements, challenges, and new opportunities*, Report to The William and Flora Hewlett Foundation. Available at: www.hewlett.org/uploads/files/Hewlett_OER_report.pdf.
- Bacsich, P., Phillips, B. & Bristow, S.F., 2011. *Learner Use of Online Educational Resources for Learning (LUOERL) – Final report*, JISC and the Higher Education Academy.

- Baker, J. et al., 2009. Open textbook proof-of-concept via Connexions. *The International Review Of Research In Open And Distance Learning*, 10(5), p.Article-10.
- Bar, F., Pisani, F. & Weber, M., 2007. Mobile technology appropriation in a distant mirror: baroque infiltration, creolization and cannibalism. In Seminario sobre Desarrollo Económico, Desarrollo Social y Comunicaciones Móviles en América Latina.
- Baraniuk, R.G., 2008. Challenges and opportunities for the open education movement: A Connexions case study. In *Opening up education: the collective advancement of education through open technology, open content, and open knowledge*. pp. 229–246.
- Baraniuk, R.G. et al., 2002. Connexions: DSP education for a networked world. In *Acoustics, Speech, and Signal Processing (ICASSP), 2002 IEEE International Conference on*. pp. IV-4144.
- Barrett, B.F.D. et al., 2009. Challenges in the adoption and use of OpenCourseWare: experience of the United Nations University. *Open Learning: The Journal of Open, Distance and e-Learning*, 24(1), pp.31–38.
- Beaulieu, A., 2010. From co-location to co-presence: Shifts in the use of ethnography for the study of knowledge. *Social Studies of Science*, 40(3), pp.453 –470.
- Beaven, T., 2013. Use and reuse of OER: Professional conversations with language teachers. *Journal of E-Learning and Knowledge Society*, 9(1), pp.59–71.
- Becher, T. & Trowler, P.R., 2001. *Academic tribes and territories*, Open Univ. Press.
- Becker, H.S., 1998. *Tricks of the Trade: How to Think About Your Research While You're Doing It*, Chicago, Ill: University of Chicago Press.
- Becker, S., 2013. The NMC Announces the 2013 Center of Excellence Awards | The New Media Consortium. *New Media Consortium*. Available at: <http://www.nmc.org/news/announces-2013-center-excellence-awards> [Accessed March 24, 2013].
- Benkler, Y., 2003. The political economy of commons. *Upgrade: The European Journal for the Informatics Professional*, 4(3), pp.6–9.
- Benkler, Y., 2006. *The Wealth of Networks: How Social Production Transforms Markets and Freedom*, New Haven [Conn.]: Yale University Press.
- Bennett, S. & Oliver, M., 2011. Talking back to theory: the missed opportunities in learning technology research. *Research in Learning Technology*, 19(3), pp.179–189.
- Berg, B., 2001. *Qualitative research methods for the social sciences* 4th ed., Boston: Allyn and Bacon.

- Berger, P.L. & Luckmann, T., 1991. *The social construction of reality : a treatise in the sociology of knowledge*, London: Penguin.
- Bieńkowski, W., Brada, J.C. & Stanley, G., 2012. *The university in the age of globalization : rankings, resources, and reforms*, Houndmills, Basingstoke, Hampshire ; New York, NY: Palgrave Macmillan.
- Bijker, W. & Pinch, T.J., 1987. The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other. In T. P. Hughes, W. E. Bijker, & T. J. Pinch, eds. *The Social construction of technological systems : new directions in the sociology and history of technology*. Cambridge Mass.: MIT Press.
- Bijker, W.E., 2001. Technology, Social Construction of. In N. J. Smelser & P. B. Baltes, eds. *International Encyclopedia of the Social & Behavioral Sciences*. Oxford: Pergamon, pp. 15522–15527.
- Bijker, W.E. & Law, J., 1992. *Shaping technology/building society [electronic resource] : studies in sociotechnical change*, Cambridge, Mass.: MIT Press. Available at: <http://hdl.handle.net/2027/heb.01128.0001.001>.
- Bleiklie, I. & Kogan, M., 2007. Organization and Governance of Universities. *Higher Education Policy*, 20, pp.477–493.
- Boczkowski, P.J., 2004. The Mutual Shaping of Technology and Society in Videotex Newspapers: Beyond the Diffusion and Social Shaping Perspectives. *The Information Society*, 20(4), pp.255–267.
- Borgman, C.L., 2007. *Scholarship in the Digital Age: Information, Infrastructure*, Cambridge, Mass: MIT.
- Borrás Gené, O., 2010. *Observatorio de plataformas para OCW*, Universidad Politécnica de Madrid.
- Boston Consulting Group, 2013. *The Open Education Resources ecosystem: An evaluation of the OER movement's current state and its progress toward mainstream adoption*, Hewlett Foundation.
- Bradwell, P., 2009. *The edgeless university. Why higher education must embrace technology*, London: Demos.
- Bräuchler, B. & Postill, J., 2010. *Theorising media and practice*, New York: Berghahn Books.
- Brennan, J. et al., 2008. *Higher Education Looking Forward: An Agenda for Future Research*. Synthesis report of the European Science Foundation's Forward Look on

Higher Education in Europe Beyond 2010: Resolving Conflicting Social and Economic Expectations', Strasbourg: European Science Foundation.

Browne, T. et al., 2010. The challenges of OER to Academic Practice. *JIME - Journal of Interactive Media in Education*.

Bryman, A., 1989. Research methods and organization studies, London: Unwin Hyman.

Bryman, A., 2008. *Social Research Methods* 3rd ed., Oxford: Oxford University Press.

Buckingham, D., 2007. Beyond technology : children's learning in the age of digital culture, Cambridge: Polity.

Butcher, N., 2011. *A basic guide to open educational resources (OER)*, Vancouver (Canada) and Paris (France): Commonwealth of Learning & UNESCO.

Butcher, N. & Hoosen, S., 2012. *Exploring the Business Case for Open Educational Resources*, Commonwealth of Learning.

Camilleri, A.F. et al., 2012. *Open Learning Recognition. Taking Open Educational Resources a Step Further*, EFQUEL – European Foundation for Quality in e-Learning (BE).

Camilleri, A.F. & Ehlers, U.-D., 2011. Mainstreaming Open Educational Practice: Recommendations for Policy, The OPAL Consortium.

Carson, S., 2009. The unwallled garden: growth of the OpenCourseWare Consortium, 2001-2008. *Open Learning: The Journal of Open and Distance Learning*, 24, pp.23-29.

Carson, S. & Forward, M.L., 2010. Development of the OCW Consortium. In *2010 IEEE Education Engineering (EDUCON)*. 2010 IEEE Education Engineering (EDUCON). IEEE, pp. 1657-1660.

Castells, M., 2009. *Communication Power*, Oxford ; New York: Oxford University Press.

Caswell, T. et al., 2008. Open Content and Open Educational Resources: Enabling universal education. *The International Review of Research in Open and Distance Learning*, 9(1), p.Article-9.

Cea D'Ancona, M.Á., 2001. Metodología Cuantitativa, Estrategias y Técnicas De Investigación Social 3a reimp., Madrid: Síntesis.

Cejudo, M. del C.L. et al., 2013. Proyecto OpenCourseWare y su implantación en universidades andaluzas. *RELATEC: Revista Latinoamericana de Tecnología Educativa*, 12(1), pp.11-21.

Christensen, C., 2011. Disrupting class how disruptive innovation will change the way the world learns Updated and expanded new ed., New York: McGraw-Hill.

- Clifton, J. et al., 2013. Difusión del proyecto OpenCourseWare - Universidad de Cantabria en asignaturas relativas a la economía mundial. In M. A. Bringas Gutiérrez, M. Fernández Gutiérrez, & M. Fernández Redondo, eds. *XV Reunión de Economía Mundial / Sociedad de Economía Mundial*. Santander, Spain, pp. 5–10.
- Cobo, C., 2013. Exploration of open educational resources in non-english speaking communities. *International Review of Research in Open and Distance Learning*, 14(2), pp.106–128.
- Collins, A. & Halverson, R., 2009. Rethinking education in the age of technology: the digital revolution and schooling in America, New York: Teachers College Press.
- Committee for Educational Methodologies Updating, 2006. *Propuestas para la Renovación de las Metodologías Educativas en la Universidad*, Ministry of Education and Science.
- Conrad, D. et al., 2013. Report on the Assessment and Accreditation of Learners using Open Educational Resources (OER), Athabasca University.
- Consalvo, M. & Ess, C., 2013. *The handbook of Internet studies*, Hoboken, NJ: Wiley-Blackwell ; Chichester.
- Cope, M., 2005. Coding Qualitative Data. In *Qualitative research methods in human geography*. South Melbourne ; Oxford: Oxford University Press, pp. 223–233.
- Corradi, G., Gherardi, S. & Verzelloni, L., 2010. Through the practice lens: Where is the bandwagon of practice-based studies heading? *Management Learning*, 41(3), pp.265–283.
- Costantino, T.E., 2008. Constructivism. In L. M. Given, ed. *The Sage encyclopedia of qualitative research methods*. Thousand Oaks, Calif.: Sage Publications, pp. 116–120.
- Couldry, N., 2004. Theorising Media as Practice. *Social Semiotics*, 14(2), pp.115–132.
- Cox, A., 2014. Turning to the practice approach in Social Informatics. In P. Fichman & H. Rosenbaum, eds. *Social Informatics: Past, Present and Future*. Cambridge Scholars Publishing.
- Cox, A.M., 2012. An exploration of the practice approach and its place in Information Science. *Journal of Information Science*.
- Cox, G., 2013. Researching Resistance to Open Education Resource Contribution: an activity theory approach. *E-Learning and Digital Media*, 10(2), p.148.
- Creanor, L. & Walker, S., 2010. Interpreting Complexity: a case for the sociotechnical interaction framework as an analytical lens for learning technology research.

- Creanor, L. & Walker, S., 2012. Learning Technology in Context: a case for the sociotechnical interaction framework as an analytical lens for networked learning research. In *Exploring the Theory, Pedagogy and Practice of Networked Learning*. Springer, pp. 173–187.
- Creswell, J.W., 2007. *Qualitative inquiry & research design : choosing among five approaches* 2nd ed., Thousand Oaks, Calif. ; London: Sage.
- Creswell, J.W., 2003. *Research Design: Qualitative, Quantitative, and Mixed Method* 2nd ed., Thousand Oaks, Calif: Sage.
- Cruz-Castro, L. & Sanz-Menéndez, L., 2010. Mobility versus job stability: Assessing tenure and productivity outcomes. *Research Policy*, 39(1), pp.27–38.
- Cruz-Castro, L. & Sanz-Menéndez, L., 2008. Research Evaluation in Transition. In R. Whitley & J. Gläser, eds. *The Changing Governance of the Sciences*. Sociology of the Sciences Yearbook. Springer Netherlands, pp. 205–223.
- CSIC - Cybermetrics Lab, 2013. Ranking Web of Universities July 2013: Spain. Available at: <http://webometrics.info/en/Europe/Spain%20> [Accessed September 11, 2013].
- Cuban, L., 2012. MOOCs and Pedagogy: Teacher-Centered, Student-Centered, and Hybrids (Part 1). *Larry Cuban on School Reform and Classroom Practice*. Available at: <http://larrycuban.wordpress.com/2012/12/05/moocs-and-pedagogy-teacher-centered-student-centered-and-hybrids/> [Accessed March 25, 2013].
- Cuban, L., 2001. *Oversold and underused : computers in the classroom*, Cambridge, Mass. ; London: Harvard University Press.
- Cuban, L., 1986. *Teachers and machines : the classroom use of technology since 1920*, New York ; London: Teachers College Press.
- Cyberinfrastructure for Network Science Center, 2009. *Network Workbench Tool: User manual, 1.0.0.*, Available at: <http://nwb.cns.iu.edu/Docs/NWBTool-Manual.pdf> [Accessed October 13, 2012].
- Czerniewicz, L., 2008. Distinguishing the field of educational technology. *Electronic Journal of e-Learning*, 6(3), pp.171–178.
- D’Antoni, S., 2008. *Open educational resources: The way forward*, UNESCO International Institute for Educational Planning.
- D’Antoni, S. & Savage, C. eds., 2009. *Open educational resources : conversations in cyberspace*, Paris: UNESCO.

- David, P.A., 2008. The Historical Origins of “Open Science”: An Essay on Patronage, Reputation and Common Agency Contracting in the Scientific Revolution. *Capitalism and Society*, 3(2).
- David, P.A., 2004. Understanding the emergence of “open science” institutions: functionalist economics in historical context. *Ind Corp Change*, 13(4), pp.571–589.
- Davies, C. & Eynon, R., 2013. Studies of the Internet in Learning and Education: Broadening the Disciplinary Landscape of Research. In W. Dutton, ed. *The Oxford handbook of Internet studies*. Oxford: Oxford University Press.
- Dávila, J., 2005. La penetración bancaria de la Universidad: El neo-colonialismo del Grupo Santander. *Revista Venezolana de Gerencia (RVG)*, 10(32), pp.695–709.
- Davis, H.C. et al., 2010. Bootstrapping a Culture of Sharing to Facilitate Open Educational Resources. *IEEE Transactions on Learning Technologies*, 3(2), pp.96–109.
- Deimann, M. & Friesen, N., 2013. Introduction. Exploring the Educational Potential of Open Educational Resources. *E-Learning and Digital Media*, 10(2), p.112.
- Denzin, N.K. & Lincoln, Y.S., 2011. The Discipline and Practice of Qualitative Research. In N. K. Denzin & Y. S. Lincoln, eds. *The SAGE handbook of qualitative research*. Thousand Oaks, Calif. ; London: Sage Publications, pp. 1–19.
- DeSanctis, G. & Poole, M.S., 1994. Capturing the Complexity in Advanced Technology Use: Adaptive Structuration Theory. *Organization Science*, 5(2), pp.121–147.
- Diamond, D., 2003. MIT Everywhere. *WIRED*. Available at: http://archive.wired.com/wired/archive/11.09/mit_pr.html [Accessed June 2, 2014].
- Diesing, P., 1972. *Patterns of Discovery in the Social Sciences*, London: Routledge & Kegan Paul.
- Digital Methods Initiative, 2012. *Googlescraper (Lippmannian Device)*, University of Amsterdam & Govcom Foundation. Available at: <https://wiki.digitalmethods.net/Dmi/ToolGoogleScraper> [Accessed February 7, 2013].
- DiMaggio, P. & Powell, W., 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*, pp.147–160.
- Downes, S., 2007. Models for Sustainable Open Educational Resources. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3.

- Dresing, T., Pehl, T. & Schmieder, C., 2012. *Manual (on) Transcription. Transcription Conventions, Software Guides and Practical Hints for Qualitative Researchers*, Marburg: Self-published. Available at: <http://www.audiotranskription.de/english/transcription-practicalguide.htm>.
- Dutton, W., 2010. Reconfiguring Access in Research: Information, Expertise, and Experience. In W. Dutton & P. W. Jeffreys, eds. *World wide research. Reshaping the Sciences and Humanities*. Cambridge (Mass.) ; London: MIT Press, pp. 21–44.
- Dutton, W., 2005. The Internet and Social Transformation: Reconfiguring Access. In W. Dutton et al., eds. *Transforming Enterprise: Economic and Social Implications of Information Technology*. Cambridge MA: MIT Press, pp. 375–394.
- Dutton, W. ed., 2013. *The Oxford handbook of Internet studies*, Oxford: Oxford University Press.
- Dutton, W., Hope Cheong, P. & Park, A., 2004. An Ecology of Constraints on e-Learning in Higher Education: The Case of a Virtual Learning Environment. *Prometheus*, 22(2), pp.131–149.
- Dutton, W. & Loader, B., 2002. *Digital academe: the new media and institutions of higher education and learning*, London ; New York: Routledge.
- Easley, D., 2010. *Networks, crowds, and markets: reasoning about a highly connected world*, New York: Cambridge University Press.
- Ehlers, U.-D., 2011. Extending the Territory: From Open Educational Resources to Open Educational Practices. *Journal of Open, Flexible and Distance Learning*, 15(2), pp.1–10.
- Ellingson, L.L., 2009. *Engaging crystallization in qualitative research : an introduction*, Thousand Oaks ; London: Sage.
- Elsevier B.V., 2011. *Journal M3trics - Research Analytics Redefined: Frequently Asked Questions*. Available at: <http://www.journalmetrics.com/FAQs.pdf>.
- Elsevier B.V., 2014. *Scopus*. Available at: <http://www.elsevier.com/online-tools/scopus> [Accessed March 12, 2014].
- Ess, C. & AOIR Ethics Working Committee, 2002. *Ethical decision-making and Internet research 2.0: Recommendations from the AoIR ethics working committee*. Available at: www.aoir.org/reports/ethics.pdf.
- Ess, C.M. & Dutton, W., 2013. Internet Studies: Perspectives on a rapidly developing field. *New Media & Society*, 15(5), pp.633–643.

- European Commission, 2014. European MOOCs Scoreboard. *Open Education Europa*. Available at: http://www.openeducationeuropa.eu/en/european_scoreboard_moocs [Accessed April 29, 2014].
- Eynon, R., 2008. The use of the world wide web in learning and teaching in higher education: reality and rhetoric. *Innovations in Education and Teaching International*, 45, pp.15–23.
- Eynon, R., Fry, J. & Schroeder, R., 2008. The Ethics of the Internet. In N. Fielding, R. M. Lee, & G. Blank, eds. *The SAGE Handbook of Online Research Methods*. Los Angeles: SAGE, pp. 23–41.
- Falconer, I., Littlejohn, A., et al., 2013. Motives and tensions in the release of Open Educational Resources: the JISC UKOER programme (draft paper). <https://oersynth.pbworks.com/w/page/63710786/Motives%20and%20tensions%20in%20the%20release%20of%20Open%20Educational%20Resources>.
- Falconer, I., McGill, L., et al., 2013. *Overview and Analysis of Practices with Open Educational Resources in Adult Education in Europe*, European Commission JRC, Institute for Prospective Technological Studies.
- Feldman, M.S. & Orlikowski, W.J., 2011. Theorizing Practice and Practicing Theory. *Organization Science*, 22(5), pp.1240–1253.
- Fielding, N., Lee, R.M. & Blank, G. eds., 2008. *The SAGE Handbook of Online Research Methods*, Los Angeles: SAGE.
- Flick, U., 2006. Triangulation. In V. Jupp, ed. *The Sage dictionary of social research methods*. London: Sage, pp. 305–6.
- Ford, N., 2008. Educational informatics. *Annual Review of Information Science and Technology*, 42(1), pp.497–544.
- Frías-Navarro, D. et al., 2013. Bridges and barriers in the elaboration of OCW materials. In *Proceedings of OER13: Creating a Virtuous Circle*. Nottingham, England. Available at: <https://www.medev.ac.uk/oer13/120/view/> [Accessed March 22, 2014].
- Frías-Navarro, M.D. et al., 2010. *Impacto del Open Course Ware (OCW) en los docentes universitarios*, Spain: Universidad de Valencia. Ministerio de Educación.
- Friesen, N., 2008. Critical Theory: Ideology Critique and the Myths of E-Learning. *Ubiquity*, 2008(June).

- Friesen, N., 2009a. Open educational resources: New possibilities for change and sustainability. *The International Review of Research in Open and Distance Learning*, 10(5), p.Article-10.
- Friesen, N., 2009b. Re-thinking e-learning research : foundations, methods, and practices., New York: Peter Lang.
- Fuchs, C., 2008. Internet and society : social theory in the information age, New York ; London: Routledge.
- Gallardo Paúls, B., 2008. Teaching and Open Access: the Open Course Ware of the Universitat de València. *@tic. revista d'innovació educativa*, 0(1), pp.16-25.
- Geertz, C., 2000a. "From the Native's Point of View": On the Nature of Anthropological Understanding. In *Local knowledge : further essays in interpretive anthropology*. New York: Basic Books, pp. 55-70.
- Geertz, C., 2000b. Thick Description: Toward an Interpretive Theory of Culture. In *The interpretation of cultures: selected essays*. New York: Basic Books, pp. 3-30.
- Gere, C., 2008. *Digital Culture Expanded* 2nd ed., London: Reaktion Books.
- Geser, G., Salzburg Research & EduMedia Group eds., 2007. *Open educational practices and resources: OLCOS Roadmap 2012*, Salzburg: Open Learning Content Observatory Services - OLCOS.
- Gibbons, M. et al., 2002. The new production of knowledge : the dynamics of science and research in contemporary societies, London: Sage.
- Giddens, A., 1989. A reply to my critics. In D. Held & J. B. Thompson, eds. *Social theory of modern societies: Anthony Giddens and his critics*. Cambridge: Cambridge University Press, pp. 249-301.
- Giddens, A., 1979. Central problems in social theory : action, structure and contradiction in social analysis, Basingstoke: Macmillan.
- Giddens, A., 1984. *The Constitution of Society: Outline of the Theory of Structuration*, Berkeley and Los Angeles: University of California Press.
- Gillham, B., 2000. *Case study research methods*, London: Continuum.
- Glennie, J., Harley, K., Butcher, N., et al. eds., 2012. *Open Educational Resources and Change in Higher Education: Reflections from Practice*, Commonwealth of Learning & UNESCO.

- Glennie, J., Harley, K. & Butcher, N., 2012. Discourses in the Development of OER Practice and Policy. In J. Glennie et al., eds. *Open Educational Resources and Change in Higher Education: Reflections from Practice*. Commonwealth of Learning & UNESCO, pp. 1–12.
- Goldberg, C., 2001. Auditing Classes at M.I.T., on the Web and Free. *The New York Times*.
- Goldman, L., 1995. *Dons and workers : Oxford and adult education since 1850*, Oxford: Clarendon Press.
- González López, M.J., 2006. Towards Decentralized and Goal-Oriented Models of Institutional Resource Allocation: The Spanish Case. *Higher Education*, 51(4), pp.589–617.
- González-Pereira, B., Guerrero-Bote, V.P. & Moya-Anegón, F., 2010. A new approach to the metric of journals' scientific prestige: The SJR indicator. *Journal of Informetrics*, 4(3), pp.379–391.
- Gourley, B. & Lane, A., 2009. Re-invigorating openness at The Open University: the role of Open Educational Resources. *Open Learning*, 24(1), pp.57–65.
- Government of Spain, 2013a. *Datos Básicos del Sistema Universitario Español. Curso 2013/14*, Madrid, Spain: Ministerio de Educación, Cultura y Deporte. Secretaría General de Universidades.
- Government of Spain, 2011a. Ley 14/2011, de 1 de junio, de la Ciencia, la Tecnología y la Innovación. *BOE (Boletín Oficial del Estado español)*, (131), pp.54387 – 54455.
- Government of Spain, 2007. Ley Orgánica 4/2007, de 12 de abril, por la que se modifica la Ley Orgánica 6/2001, de 21 de diciembre, de Universidades,
- Government of Spain, 2001. Ley Orgánica 6/2001, de 21 de diciembre, de Universidades,
- Government of Spain, 2013b. Ley Orgánica 8/2013, de 9 de diciembre, para la mejora de la calidad educativa,
- Government of Spain, 2009. Real Decreto 2063/2008, de 12 de diciembre, por el que se desarrolla la Ley 10/2007, de 22 de junio, de la Lectura, del Libro y de las Bibliotecas en lo relativo al ISBN. *Boletín Oficial del Estado (BOE)*, (10), pp.3589–3593.
- Government of Spain, 2011b. Real Decreto 99/2011, de 28 de enero, por el que se regulan las enseñanzas oficiales de doctorado. *BOE (Boletín Oficial del Estado español)*, (35), pp.13909 – 13926.

- Government of Spain, 2012. Real Decreto-ley 14/2012, de 20 de abril, de medidas urgentes de racionalización del gasto público en el ámbito educativo. *Boletín Oficial del Estado (BOE)*, pp.30977–30984.
- Guri-Rosenblit, S., 2005. Eight Paradoxes in the Implementation Process of E-learning in Higher Education. *Higher Education Policy*, 18(1), pp.5–29.
- Guri-Rosenblit, S., 2009. Digital technologies in higher education : sweeping expectations and actual effects, New York: Nova Science Publishers.
- Haddon, L., 2004. Information and Communication Technologies in Everyday Life: A Concise Introduction and Research Guide, Oxford: Berg.
- Haddon, L., 2006. The Contribution of Domestication Research to In-Home Computing and Media Consumption. *The Information Society*, 22(4), pp.195–203.
- Haggard, S. et al., 2013. The Maturing of the MOOC: Literature Review of Massive Open Online Courses and other Forms of Online Distance Learning, UK's Department for Business, Innovation and Skills.
- Hargreaves, I., 2011. Digital Opportunity: A Review of Intellectual Property and Growth. An Independent Report by Professor Ian Hargreaves,
- Harris, M., 2001. *Cultural Materialism: The Struggle for a Science of Culture* Updated ed., Walnut Creek: AltaMira Press.
- Hatakka, M., 2009. Build it and They Will Come? – Inhibiting Factors for Reuse of Open Content in Developing Countries. *The Electronic Journal of Information Systems in Developing Countries*, 37.
- Haythornthwaite, C., 2006. Social Informatics of Elearning. In Information, Communication & Society (ICS) 10th Anniversary International Symposium. Available at: <http://hdl.handle.net/2142/8959>.
- Haythornthwaite, C. & Andrews, R., 2007. Introduction to e-learning research. In C. Haythornthwaite & R. Andrews, eds. *Handbook of E-Learning Research*. London: SAGE, pp. 1–52.
- Helsper, E.J. & Eynon, R., 2009. Digital natives: where is the evidence? *British Educational Research Journal*.
- Hemingway, A. et al., 2011. An emerging model for publishing and using open educational resources in public health. *Perspectives in Public Health*, 131(1), pp.38–43.
- Hepburn, A., 2006. Constructionism. In V. Jupp, ed. *The Sage dictionary of social research methods*. London: Sage, pp. 38–40.

- Hewlett Foundation, 2011. White Paper: Open Educational Resources - Mainstream Adoption and Educational Effectiveness. Draft for Public Comment.
- Hewlett Foundation, 2013. White Paper: Open Educational Resources. Breaking the Lockbox on Education.
- Hewson, C. et al., 2003. Internet Research Methods: A Practical Guide for the Social and Behavioural Sciences, London: Sage Publications.
- Higher Education Academy & JISC, Open Educational Resources infoKit. Available at: <https://openeducationalresources.pbworks.com/w/page/24836480/Home> [Accessed October 8, 2011].
- Highton, M., Fresen, J.W. & Wild, J., 2011. Making academic OER easy: Reflections on technology and openness at Oxford University. *Journal of Open, Flexible and Distance Learning*, 15(2), pp.28–40.
- Hilton III, J. et al., 2010. The Four R's of Openness and ALMS Analysis.
- Hilton III, J., Lutz, N. & Wiley, D., 2012. Examining the reuse of open textbooks. *The International Review of Research in Open and Distance Learning*, 13(2), pp.45–58.
- Hilton III, J. & Wiley, D., 2010. Free: Why Authors are Giving Books Away on the Internet. *TechTrends*, 54(2), pp.43–49.
- Hilton III, J. & Laman, C., 2012. One college's use of an open psychology textbook. *Open Learning*, 27(3), pp.265–272.
- Hoosen, S. & Neil Butcher & Associates eds., 2012. *Survey on Governments' Open Educational Resources (OER) Policies*, Commonwealth of Learning & UNESCO.
- Horton, K., Davenport, E. & Wood-Harper, T., 2005. Exploring sociotechnical interaction with Rob Kling: five “big” ideas. *Information Technology & People*, 18(1), pp.50–67.
- Huang, W.-H.D., Lin, M.-F.G. & Shen, W., 2012. Understanding Chinese-speaking open courseware users: A case study on user engagement in an open courseware portal in Taiwan (Opensource Opencourse Prototype System). *Open Learning*, 27(2), pp.169–182.
- Huijser, H.J., Bedford, T. & Bull, D., 2008. OpenCourseWare, Global Access and the Right to Education: Real access or marketing ploy? *The International Review of Research in Open and Distance Learning*, 9(1).
- Hunsinger, J., Allen, M. & Klastrup, L. eds., 2010. *International Handbook of Internet Research*, Dordrecht: Springer Science Business Media B.V.

- Hyl  n, J., 2007. *Giving knowledge for free : the emergence of open educational resources*, Paris: OECD Centre for Educational Research and Innovation. Organisation for Economic Co-operation and Development.
- Ibarra Colado, E., 2012. Privatizaci  n y comercializaci  n de la universidad. *Perfiles Educativos*, XXXIV.
- Iiyoshi, T. & Kumar, M.S.V. eds., 2008. *Opening up Education: The Collective Advancement of Education Through Open Technology, Open Content, and Open Knowledge*, Cambridge, MA: MIT Press.
- IrobotSoft.com, 2011. IRobot System User's Manual. Available at: <http://www.irobotsoft.com/help/>.
- Ishii, K. & Lutterbeck, B., 2001. Unexploited Resources of Online Education for Democracy - Why the Future Should Belong to OpenCourseWare. *First Monday*, 6(11).
- Ives, C. & Pringle, M.M., 2013. Moving to open educational resources at Athabasca University: A case study. *International Review of Research in Open and Distance Learning*, 14(2), pp.1–13.
- Jarvis, J., 2008. *What would Google do?*, Pymble NSW ;;New York NY: HarperCollins e-books.
- Johansen, J. & Wiley, D., 2011. A sustainable model for OpenCourseWare development. *Etr&d-Educational Technology Research and Development*, 59(3), pp.369–382.
- Jones, C. & Shao, B., 2011. The net generation and digital natives: implications for higher education.
- Jongbloed, B., Enders, J. & Salerno, C., 2007. Higher Education and its Communities: Interconnections and Interdependencies. In J. Brennan et al., eds. *Higher Education Looking Forward: Relations between Higher Education and Society*. Strasbourg: European Science Fundation, pp. 39–58. Available at: www.esf.org/helf.
- Kanwar, A., Kodhandaraman, B. & Umar, A., 2010. Toward Sustainable Open Education Resources: A Perspective From the Global South. *American Journal of Distance Education*, 24(2), pp.65–80.
- Kirkpatrick, K.L., 2006. OpenCourseWare: An "MIT Thing"?
- Kirkwood, A. & Price, L., 2013. Examining some assumptions and limitations of research on the effects of emerging technologies for teaching and learning in higher education. *British Journal of Educational Technology*, 44(4), pp.536–543.

- Kirkwood, A. & Price, L., 2014. Technology-enhanced learning and teaching in higher education: what is “enhanced” and how do we know? A critical literature review. *Learning, Media and Technology*, 39(1), pp.6–36.
- Kling, R., 2000a. Learning About Information Technologies and Social Change: The Contribution of Social Informatics. *The Information Society*, 16(3), pp.217–232.
- Kling, R., 2000b. Social Informatics: A New Perspective on Social Research about Information and Communication Technologies. *Prometheus*, 18(3), pp.245–264.
- Kling, R., 2007. What Is Social Informatics and Why Does It Matter? *The Information Society*, 23(4), pp.205–220.
- Kling, R. & Courtright, C., 2003. Group Behavior and Learning in Electronic Forums: A Sociotechnical Approach. *The Information Society*, 19(3), pp.221–235.
- Kling, R. & Hara, N., 2004. Informatics and Distributed Learning. In A. DiStefano, K. E. Rudestam, & R. J. (Robert J. Silverman, eds. *Encyclopedia of distributed learning*. Thousand Oaks, CA ; London: Sage Publications, pp. 225–227.
- Kling, R. & Hara, N., 2002. Students’ difficulties in a Web-based distance education course: an ethnographic study. In *Digital academe: the new media and institutions of higher education and learning*. London ; New York: Routledge, pp. 62–83.
- Kling, R., McKim, G. & King, A., 2003. A bit more to it: Scholarly Communication Forums as Socio-Technical Interaction Networks. *Journal of the American Society for Information Science and Technology*, 54(1), pp.47–67.
- Kling, R., Rosenbaum, H. & Sawyer, S., 2005. Understanding and Communicating Social Informatics: A Framework for Studying and Teaching the Human Contexts of Information and Communication Technologies, Medford, N.J: Information Today, Inc.
- Knox, J., 2013. Five critiques of the open educational resources movement. *Teaching in Higher Education*, 18(8), pp.821–832.
- Lamb, R. & Kling, R., 2003. Reconceptualizing Users as Social Actors in Information Systems Research. *MIS Quarterly*, 27(2), pp.197–236.
- Lamb, R. & Sawyer, S., 2005. On extending social informatics from a rich legacy of networks and conceptual resources. *Information Technology and People*, 18(1), pp.9–20.
- Lane, A., 2012. A review of the role of national policy and institutional mission in European distance teaching universities with respect to widening participation in higher

- education study through open educational resources. *Distance Education*, 33(2), pp.135–150.
- Lane, A., 2009. The Impact of Openness on Bridging Educational Digital Divides. *International Review of Research in Open and Distance Learning*, 10(5).
- Lane, A., 2008. Who Puts the Education into Open Educational Content? In R. N. Katz, ed. *The Tower and the Cloud: Higher Education in the Age of Cloud Computing*. EDUCAUSE, pp. 158–168.
- De Langen, F., 2011. There is no business model for open educational resources: a business model approach. *Open Learning: The Journal of Open, Distance and e-Learning*, 26(3), pp.209–222.
- Laredo, P., 2007. Revisiting the Third Mission of Universities: Toward a Renewed Categorization of University Activities? *Higher Education Policy*, 20, pp.441–456.
- Latour, B., 2005. Reassembling the social: an introduction to actor-network-theory, Oxford ; New York: Oxford University Press.
- Laurent, J., Perriñez Forte, I. & de Gabriel, E.W.P., 2010. Andalusia, Spain: Self-evaluation report. OECD Reviews of Higher Education in Regional and City Development., Regional Government of Andalusia.
- Lee, M.Y. et al., 2008. Expanding the reach of health sciences education and empowering others: The OpenCourseWare initiative at Tufts University. *Medical Teacher*, 30(2), pp.159–163.
- Lerman, S.R. & Miyagawa, S., 2002. OpenCourseWare: A Case Study in Institutional Decision Making. *Academe*, 88(5), pp.23–27.
- Lerman, S.R., Miyagawa, S. & Margulies, A.H., 2008. OpenCourseWare: Building a Culture of Sharing. In T. Iiyoshi & M. S. V. Kumar, eds. *Opening up Education: The Collective Advancement of Education Through Open Technology, Open Content, and Open Knowledge*. Cambridge, MA: MIT Press, pp. 213–227.
- Lessig, L., 2004. Free Culture: How Big Media Uses Technology and the Law to Lock down Culture and Control Creativity, New York, NY: Penguin.
- Lessig, L., 2008. Remix: making art and commerce thrive in the hybrid economy, New York :
- Levy, P. et al., 2003. Educational Informatics: An Emerging Research Agenda. *Journal of Information Science*, 29(4), pp.298–310.
- Lincoln, Y.S. & Guba, E.G., 1985. *Naturalistic Inquiry*, Newbury Park: Sage.

- Llorens, F. et al., 2010. The University of Alicante's institutional strategy to promote the open dissemination of knowledge. *Online Information Review*, 34(4), pp.565–582.
- Lloyd, M., 2011. A Spanish Bank Becomes a Billion-Dollar Benefactor for Latin American Campuses. , pp.23–24.
- Luker, K., 2008. Salsa dancing into the social sciences : research in an age of info-glut, Cambridge, Mass. ; London: Harvard University Press.
- MacKenzie, D.A. & Wajcman, J., 1999. *The social shaping of technology* 2nd ed., Buckingham: Open University Press.
- Mansell, L. et al., 2010. OpenSpires: Open Content at Oxford University. Final Report, London: JISC.
- Manzano, V., 2012. *La universidad comprometida*, Bilbao [etc.]: Universidad del País Vasco = Euskal Herriko Unibertsitatea, Hegoa.
- Mao, I., 2008. Sharism: A Mind Revolution. In *FREESOULS: Captured and Released by Joi Ito*.
- Markham, A. & Buchanan, E., 2012. Ethical decision-making and Internet research 2.0: Recommendations from the AoIR ethics working committee. Available at: www.aoir.org/reports/ethics2.pdf.
- Martínez Fernández, S., 2009. Informe sobre la posibilidad del reconocimiento de las publicaciones de las asignaturas OCW a través de los identificadores internacionales: ISBN, ISSN y DOI. Universidad Politécnica de Madrid - Gabinete de Asesoría Jurídica.
- Massachusetts Institute of Technology, 2006. *MIT OpenCourseWare 2005 Program Evaluation Findings*, Available at: http://ocw.mit.edu/ans7870/global/05_Prog_Eval_Report_Final.pdf.
- Masterman, L. & Wild, J., 2011. *OER Impact Study Research Report*, JISC Open Educational Resources Programme: Phase 2. University of Oxford.
- Materu, P.N., 2004. *Open Source Courseware: a baseline study*, Washington, DC: The World Bank.
- McAndrew, P. & Cropper, K., 2011. *Open Educational Resources and Intellectual Property Rights*, Moscow, Russia: UNESCO Institute for Information Technologies in Education.
- McGill, L., Falconer, I., Littlejohn, A., et al., 2013. JISC/HE Academy OER Programme: Phase 3 Synthesis and Evaluation Report, JISC.

- McGill, L., Falconer, I., Dempster, J., et al., 2013. Journeys to Open Educational Practice: Motivations. UKOER/SCORE Review Final Report. A cumulative evaluation and synthesis of the entire HEFCE funded intervention in OER, JISC.
- McKechnie, L.E.F., 2008. Naturalistic observation. In L. M. Given, ed. *The Sage encyclopedia of qualitative research methods*. Thousand Oaks, Calif.: Sage Publications, pp. 550–551.
- Meyer, E.T., 2006. Socio-Technical Interaction Networks: A Discussion of the Strengths, Weaknesses and Future of Kling's STIN Model. In J. Berleur, M. I. Nurminen, & J. Impagliazzo, eds. *Social Informatics: An Information Society for all? In Remembrance of Rob Kling*. Boston, MA: Springer US.
- Meyer, E.T., 2007. *Socio-Technical Perspectives on Digital Photography: Scientific Digital Photography Use by Marine Mammal Researchers*. Bloomington, Indiana, USA: Indiana University. Available at: <http://people.oii.ox.ac.uk/meyer/research-projects/digital-photography-and-scientific-practice/> [Accessed June 16, 2010].
- Meyer, E.T., 2014. Socio-Technical Sensitizing Concepts: the Value of Social Informatics for Research and Teaching. In *Social Informatics: Past, Present and Future*. Newcastle upon Tyne, UK: Cambridge Scholars Publishing.
- Michavila, F. ed., 2013. *La Universidad Española en cifras 2012*, Madrid: Conferencia de Rectores de las Universidades Españolas (CRUE).
- Miles, M.B. & Huberman, A.M., 1994. *Qualitative Data Analysis: An Expanded Sourcebook* 2nd ed., Thousand Oaks, Calif: Sage.
- Miras-Portugal, M.T. & et. al, 2013. Propuestas para la reforma y mejora de la calidad y eficiencia del sistema universitario español.
- MIT, 2013. Mission. *MIT Facts 2013*. Available at: <http://web.mit.edu/facts/mission.html> [Accessed April 13, 2013].
- Moles i Plaza, R.J., 2006. ¿Universidad S.A.?: Público y Privado en la Educación Superior, Barcelona: Ariel.
- Murphy, A., 2013. Open educational practices in higher education: institutional adoption and challenges. *Distance Education*, 34(2), pp.201–217.
- Nardi, B.A. & O'Day, V., 1999. *Information ecologies : using technology with heart*, Cambridge, Mass. ; London: MIT Press.

- Ngimwa, P. & Wilson, T., 2012. An empirical investigation of the emergent issues around OER adoption in Sub-Saharan Africa. *Learning, Media and Technology*, 37(4), pp.398–413.
- Ngugi, C.N., 2011. OER in Africa's higher education institutions. *Distance Education*, 32(2), pp.277–287.
- Norum, K.E., 2008. Natural setting. In L. M. Given, ed. *The Sage encyclopedia of qualitative research methods*. Thousand Oaks, Calif.: Sage Publications, pp. 551–552.
- Norvig, P., 2012. Helping the World to Teach. *Google's Research Blog*. Available at: <http://googleresearch.blogspot.co.uk/2012/09/helping-world-to-teach.html> [Accessed March 25, 2013].
- O'Connor, H. et al., 2008. Internet-based Interviewing. In N. Fielding, R. M. Lee, & G. Blank, eds. *The SAGE Handbook of Online Research Methods*. Los Angeles: SAGE, pp. 271–289.
- Oblinger, D.G. & Lombardi, M.M., 2008. Common Knowledge: Openness in Higher Education. In T. Iiyoshi & M. S. V. Kumar, eds. *Opening up Education: The Collective Advancement of Education Through Open Technology, Open Content, and Open Knowledge*. Cambridge, MA: MIT Press, pp. 389–400.
- OCW Consortium, 2011. OCW Consortium announces winners of site awards for OpenCourseWare excellence. *OpenCourseWare Consortium Website*. Available at: <http://www.ocwconsortium.org/en/community/blog/2011/04/26/ocw-consortium-announces-winners-of-site-awards-for-opencourseware-excellence/> [Accessed July 23, 2012].
- OECD, 2011. *Education at a glance 2011 : highlights*, Paris: Organisation for Economic Co-operation and Development.
- Olakulehin, F.K. & Singh, G., 2013. Widening access through openness in higher education in the developing world: A Bourdieusian field analysis of experiences from the National Open University of Nigeria. *Open Praxis*, 5(1), pp.31–40.
- Olcott, D., 2012. OER perspectives: emerging issues for universities. *Distance Education*, 33(2), pp.283–290.
- D' Oliveira, C. et al., 2010. MIT OpenCourseWare: Unlocking Knowledge, Empowering Minds. *Science*, 329(5991), pp.525–526.
- Oliver, M., 2013. Learning technology: Theorising the tools we study. *British Journal of Educational Technology*, 44(1), pp.31–43.

- Oliver, M., 2011. Technological determinism in educational technology research: some alternative ways of thinking about the relationship between learning and technology. *Journal of Computer Assisted Learning*, 27(5), pp.373–384.
- Olsen, F., 2002. MIT's open window: Putting course materials online, the university faces high expectations. *The Chronicle of Higher Education*, 6.
- Onwuegbuzie, A.J. & Leech, N.L., 2005. On Becoming a Pragmatic Researcher: The Importance of Combining Quantitative and Qualitative Research Methodologies. *International Journal of Social Research Methodology*, 8(5), pp.375–387.
- Open Society Foundations & Shuttleworth Foundation eds., 2008. The Cape Town Open Education Declaration. Available at: <http://www.capetowndeclaration.org/read-the-declaration> [Accessed October 10, 2011].
- Orlikowski, W.J. et al., 1995. Shaping Electronic Communication: The Metastructuring of Technology in the Context of Use. *Organization Science*, 6(4), pp.423–444.
- Orlikowski, W.J., 1992. The Duality of Technology: Rethinking the Concept of Technology in Organizations. *Organization Science*, 3(3), pp.398–427.
- Orlikowski, W.J., 2000. Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations. *Organization Science*, 11(4), pp.404–428.
- Orlikowski, W.J. & Scott, S.V., 2008. Sociomateriality: Challenging the Separation of Technology, Work and Organization. *The Academy of Management Annals*, 2(1), pp.433–474.
- Pedreño, A., 2006. Open Courseware (OCW) Consortium in beta. Available at: <http://opiniones-personales.blogspot.com/2006/06/open-courseware-ocw-consortium-in-beta.html> [Accessed January 25, 2012].
- Peng, T.-Q. et al., 2013. Mapping the landscape of Internet Studies: Text mining of social science journal articles 2000–2009. *New Media & Society*, 15(5), pp.644–664.
- Pernías, P. & Marco, M., 2007. Motivación y valor del proyecto OpenCourseWare: la universidad del siglo XXI. *RUSC. Revista de Universidad y Sociedad del Conocimiento*, 4(1).
- Peter, S. & Deimann, M., 2013. On the role of openness in education: A historical reconstruction. *Open Praxis*, 5(1), pp.7–14.
- Peters, M.A., 2008. The History and Emergent Paradigm of Open Education. In M. A. Peters & R. G. Britez, eds. *Open education and education for openness*. Sense Publishers, pp. 3–15.

- Peters, M.A. & Roberts, P., 2012. The virtues of openness : education, science, and scholarship in the digital age, Boulder, Colo.: Paradigm Publishers.
- Postill, J., 2010. Introduction: Theorising Media and Practice. In B. Bräuchler & J. Postill, eds. *Theorising media and practice*. New York: Berghahn Books.
- Prensky, M., 2001. Digital natives, digital immigrants, part 2. *On the Horizon*, 9(6), pp.1–6.
- Read, M., 2008. Cultural and Organizational Drivers of Open Educational Content. In R. N. Katz, ed. *The Tower and the Cloud: Higher Education in the Age of Cloud Computing*. EDUCAUSE, pp. 140–149.
- Readings, B., 1999. *The university in ruins* 4th ed., Cambridge, Mass ; London: Harvard University Press.
- Reckwitz, A., 2002. Toward a Theory of Social Practices: A Development in Culturalist Theorizing. *European Journal of Social Theory*, 5(2), pp.243–263.
- Reed, P., 2012. Awareness, attitudes and participation of teaching staff towards the open content movement in one university. *Research in Learning Technology*, 20(0).
- Regional Government, 2013. Report on universities.
- Rhoads, R.A., Berdan,, J. & Toven-Lindsey, B., 2013. The Open Courseware Movement in Higher Education: Unmasking Power and Raising Questions about the Movement's Democratic Potential. *Educational Theory*, 63(1), pp.87–110.
- Richards, L., 2009. Handling qualitative data : a practical guide 2nd ed., London: SAGE.
- Richter, T. & McPherson, M., 2012. Open educational resources: education for the world? *Distance Education*, 33(2), pp.201–219.
- Robins, K. & Webster, F., 1989. *The technical fix : education, computers and industry*, Basingstoke: Macmillan.
- Robins, K. & Webster, F., 2002. *The virtual university? : knowledges, markets, and management*, Oxford: Oxford University Press.
- Rogers, R., 2009. *The End of the Virtual: Digital Methods*, Amsterdam: Amsterdam University Press.
- Roig Telo, A., 2013. Participatory Film Production as Media Practice. *International Journal of Communication*, 7(0), p.21.
- Rolfe, V., 2012. Open educational resources: staff attitudes and awareness. *Research in Learning Technology*, 20(0).

- Rosenbaum, H., 2009. Social Informatics. In *Encyclopedia of Library and Information Sciences, Third Edition*. Taylor & Francis, pp. 4814–4819.
- Santander UK, 2013. Santander launches new Student Smart Card. Available at: http://www.santander.com/cs/gs/Satellite/CFWCSancomQP01/en_GB/Corporate/Press-Room/Santander-News/Santander-launches-new-Student-Smart-Card.html [Accessed March 28, 2014].
- Santander UK, Santander Universities - Programme Information. Available at: https://www.santander.co.uk/cs/gs/Satellite?c=Page&canal=CABBEYCOM&cid=1210609061003&empr=Abbeycom&leng=en_GB&pagename=Abbeycom%2FPage%2FWC_ACOM_TemplateA2 [Accessed March 28, 2014].
- Santiago, P. et al., 2009. *OECD reviews of tertiary education: Spain*, Paris: OECD Publishing.
- Santos, A.I. dos, 2011. Open Educational Resources in Brazil: State-of-the-Art, Challenges and Prospects for Development and Innovation, UNESCO Institute for Information Technologies in Education.
- Santos-Hermosa, G., Ferran, N. & Abadal, E., 2012. Recursos educativos abiertos: repositorios y uso. *El profesional de la información*, 21(2), pp.136–145.
- Sanz-Menéndez, L., Cruz-Castro, L. & Alva, K., 2013. Time to Tenure in Spanish Universities: An Event History Analysis. *PLoS ONE*, 8(10), p.e77028.
- Sawyer, S., 2005. Social informatics: Overview, principles and opportunities. *Bulletin of the American Society for Information Science and Technology*, 31(5), pp.9–12.
- Sawyer, S. & Eschenfelder, K.R., 2005. Social informatics: Perspectives, examples, and trends. *Annual Review of Information Science and Technology*, 36(1), pp.427–465.
- Sawyer, S. & Rosenbaum, H., 2000. Social Informatics in the Information Sciences: Current Activities and Emerging Directions. *Informing science*, 3(2), pp.49–56.
- Sawyer, S. & Tapia, A., 2007. From Findings to Theories: Institutionalizing Social Informatics. *The Information Society: An International Journal*, 23(4), p.263.
- Sawyer, S. & Tyworth, M., 2006. Social Informatics: Principles, Theory, and Practice. In J. Berleur, M. I. Nurminen, & J. Impagliazzo, eds. *Social Informatics: An Information Society for all? In Remembrance of Rob Kling*. Boston, MA: Springer US.
- Schatzki, T.R., 2001. Practice theory. In T. R. Schatzki, K. Knorr-Cetina, & E. von Savigny, eds. *The Practice Turn in Contemporary Theory*. New York: Routledge, pp. 10–23.
- Schatzki, T.R., Knorr-Cetina, K. & Savigny, E. von eds., 2001. *The Practice Turn in Contemporary Theory*, New York: Routledge.

- SCImago, 2007a. SJR - Help. Available at: <http://www.scimagojr.com/help.php> [Accessed September 26, 2012].
- SCImago, 2007b. SJR - SCImago Journal & Country Rank. Available at: <http://www.scimagojr.com/> [Accessed September 17, 2012].
- Sclater, N., 2011. Open Educational Resources: Motivations, Logistics and Sustainability. In N. Ferrer & J. Alonso, eds. *Content Management for E-Learning*. Springer, pp. 179–193.
- Sclater, N., 2010. The Organizational Impact of Open Educational Resources. In U.-D. Ehlers, ed. *Changing cultures in higher education: moving ahead to future learning*. Heidelberg ;;New York: Springer, pp. 485–497.
- Seidman, I., 1998. Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences 2nd ed., New York: Teachers College Press.
- Selwyn, N., 2013. Distrusting Educational Technology: The Questions We Should Be Asking, But Are Not: Critical Questions for Changing Times, Routledge.
- Selwyn, N., 2010. Looking beyond learning: notes towards the critical study of educational technology. *Journal of Computer Assisted Learning*, 26(1), pp.65–73.
- Selwyn, N., 2012. Ten suggestions for improving academic research in education and technology. *Learning, Media and Technology*, 37(3), pp.213–219.
- Selwyn, N., 2009. The digital native: myth and reality. *Aslib Proceedings*, 61(4), pp.364–379.
- Selwyn, N., 2007. The use of computer technology in university teaching and learning: a critical perspective. *Journal of Computer Assisted Learning*, 23(2), pp.83–94.
- Shaffert, S., 2010. Strategic Integration of Open Educational Resources in Higher Education. In U.-D. Ehlers, ed. *Changing cultures in higher education : moving ahead to future learning*. Heidelberg ;;New York: Springer, pp. 119–131.
- Silverstone, R. & Haddon, L., 1996. Design and the domestication of ICTs: technical change and everyday life. *Communication by design. The politics of information and communication technologies*, pp.44–74.
- Smith, M.S., 2013. *Ruminations on Research on Open Educational Resources*, William and Flora Hewlett Foundation.
- Smith, M.S. & Casserly, C.M., 2006. The promise of open educational resources. *Change: The Magazine of Higher Learning*, 38(5), pp.8–17.

- Somekh, B., 2008. Action Research. In L. M. Given, ed. *The Sage encyclopedia of qualitative research methods*. Thousand Oaks, Calif.: Sage Publications, pp. 4–7.
- Spanish Ministry of Education, 2011. Balance de 3 años del Programa Campus de Excelencia Internacional. Estrategia Universidad 2015: Memoria 2008 – 2011, Secretaría General de Universidades.
- Spanish Ministry of Education, 2010. ESTRATEGIA UNIVERSIDAD 2015: The contribution of universities to Spanish socio-economic progress, Secretaría General de Universidades.
- Stacey, P., 2013. Government support for open educational resources: Policy, funding, and strategies. *International Review of Research in Open and Distance Learning*, 14(2), pp.67–80.
- Stake, R.E., 1995. *The Art of Case Study Research*, Thousand Oaks, Calif: Sage.
- Strauss, A. & Corbin, J., 1991. *Basics of qualitative research : grounded theory procedures and techniques* 3. printing., Newbury Park Calif. [u.a.]: Sage.
- Stuart, J., 1871. Letter on University Extension Addressed to the Resident Members of the University of Cambridge.
- Tan, E. & Pearce, N., 2011. Open education videos in the classroom: Exploring the opportunities and barriers to the use of YouTube in teaching introductory sociology. *ALT-J: Research in Learning Technology*, 19(SUPPL.1), pp.125–133.
- Teichler, U. & Bürger, S., 2008. Student Enrolments and Graduation Trends in the OECD Area: What Can we Learn from International Statistics? In OECD, ed. *Higher Education to 2030 (Vol. 1): Demography*. Centre for Educational Research and Innovation, Organisation for Economic Co-operation and Development, pp. 151–172.
- The OCW Consortium, OpenCourseWare Consortium Institution Memorandum of Cooperation. Available at:
http://ocw.universia.net/es/descargas/MOC_Institution_090406_OCWC.PDF.
- Thelwall, M., 2009. Introduction to Webometrics: Quantitative Web Research for the Social Sciences, Morgan & Claypool.
- Tovar, E., López, J., et al., 2013. Aplicación de tecnologías web emergentes para el estudio del impacto de repositorios OpenCourseWare españoles y latinoamericanos en le Educación Superior, Universidad Politécnica de Madrid & Spain's Government.

- Tovar, E., Lopez-Vargas, J.A., et al., 2013. Impact of open educational resources in higher education institutions in Spain and Latin Americas through social network analysis. In *ASEE Annual Conference and Exposition, Conference Proceedings*.
- Tracy, S.J., 2010. Qualitative Quality: Eight “Big-Tent” Criteria for Excellent Qualitative Research. *Qualitative Inquiry*, 16(10), pp.837–851.
- Trow, M., 2000. From Mass Higher Education to Universal Access: The American Advantage. *Minerva*, 37(4), pp.303–328.
- Trow, M., 1973. *Problems in the Transition from Elite to Mass Higher Education*, Berkeley, California: Carnegie Commission on Higher Education.
- Tullis Owen, J.A., 2008. Naturalistic enquiry. In L. M. Given, ed. *The Sage encyclopedia of qualitative research methods*. Thousand Oaks, Calif.: Sage Publications, pp. 547–550.
- Tuunainen, J., 2005. Hybrid Practices? Contributions to the Debate on the Mutation of Science and University. *Higher Education*, 50(2), pp.275–298.
- Uceda Antolín, J. & Píriz Durán, S. eds., 2012. *UNIVERSITIC 2012: Descripción, Gestión y Gobierno de las TI en el Sistema Universitario Español*, Madrid, Spain: Conferencia de Rectores de las Universidades Españolas.
- UNED, 2013. La UNED, pionera en certificaciones para los cursos COMA. Available at: http://portal.uned.es/portal/page?_pageid=93,25994975&_dad=portal&_schema=PORTAL [Accessed March 24, 2013].
- UNED COMA, 2013a. Metodología. Available at: <https://unedcoma.es/methodology/> [Accessed March 25, 2013].
- UNED COMA, 2013b. Preguntas Frecuentes. Available at: <https://unedcoma.es/faq/> [Accessed March 25, 2013].
- UNESCO, 2002. *Forum on the Impact of Open Courseware for Higher Education in Developing Countries - Final report*, Paris. Available at: <http://unesdoc.unesco.org/images/0012/001285/128515e.pdf> [Accessed October 31, 2011].
- UNESCO, 2009. Global Education Digest. 2009 Comparing Education Statistics Across the World, Montreal: UNESCO Institute for Statistics.
- UNESCO, 2012. Paris OER Declaration. Available at: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/Paris%20OER%20Declaration_01.pdf [Accessed August 25, 2012].

UNESCO, Agence universitaire de la Francophonie (AUF) & International Organization of la Francophonie (OIF), 2009. Déclaration de Dakar sur les Ressources Éducatives Libres.

UNESCO & COL, 2011. Guidelines for Open Educational Resources (OER) in Higher Education. Available at: <http://unesdoc.unesco.org/images/0021/002136/213605E.pdf> [Accessed November 4, 2011].

UNI-B, 2006. *Strategic Plan*,

UNI-G, 2007. New Teaching Methodologies Plan,

Universia, n.d.1. Algunas razones incorporación para decidir la incorporación al OCW. *Universia OCW Consortium*. Available at: <http://ocw.universia.net/es/razones-incorporacion-ocw.php> [Accessed June 10, 2012].

Universia, n.d.3. Las oficinas OCW. Available at: <http://ocw.universia.net/es/oficinas-ocw.php> [Accessed March 23, 2013].

Universia, 2007. Los primeros pasos. *Universia España: Noticias*. Available at: <http://noticias.universia.es/vida-universitaria/reportaje/2007/08/20/650951/4/opencourseware-universia-apuesta-conocimiento-abierto/los-primeros-pasos.html> [Accessed March 29, 2013].

Universia, 2012. OCW Universia: Estado de situación del proyecto (Abril 2012).

Universia España, 2011. Entrega de la IV Edición de los Premios Ministerio de Educación-Universia a la iniciativa OCW. Available at: <http://noticias.universia.es/en-portada/noticia/2011/05/18/826868/entrega-iv-edicion-premios-ministerio-educacion-universia-iniciativa-ocw.html> [Accessed March 23, 2014].

Universia España, 2012. La Universidad de Cantabria ganadora de la V Edición del Premio MECD - Universia a la iniciativa OCW. Available at: <http://noticias.universia.es/en-portada/noticia/2012/05/10/928388/universidad-cantabria-ganadora-v-edicion-premio-mecd-universia-iniciativa-ocw.html> [Accessed March 23, 2014].

Universia España, 2013. La Universidad Politécnica de Cartagena y la Universidad de Islas Baleares ganadores Ex aequo de la VI Edición del Premio MECD - Universia a la iniciativa OCW. Available at: <http://noticias.universia.es/en-portada/noticia/2013/05/08/1021838/universidad-politecnica-cartagena-universidad-islas-baleares-ganadores-ex-aequo-vi-edicion-premio-mecd-universia-iniciativa-ocw.html> [Accessed March 23, 2014].

Universia Holding, 2013. Memoria Universia 2012.

Universia Holding, 2011. Who we are. Available at:

<http://www.universia.net/nosotros/en/who-we-are/> [Accessed March 21, 2013].

Universia & Spain's Ministry of Education, Culture and Sport, 2013. Bases de la convocatoria 2013: VII Edición de los premios MECD-Universia a la iniciativa OCW. Available at: Bases de la convocatoria 2012 Vi edición de los premios mecd-universia a la iniciativa ocw.

University of London, 2008. Our History - The First Global University. *University of London External System - 150th Anniversary*. Available at: <http://www.londoninternational.ac.uk/150/history/index.shtml> [Accessed March 9, 2014].

University of Oxford, Policy statement on the Ethical Conduct of Research Involving Human Participants and Personal Data. Available at: <http://www.admin.ox.ac.uk/curec/policystatement/> [Accessed March 29, 2012].

Välimaa, J. & Hoffman, D., 2007. Higher Education and Knowledge Society Discourse. In J. Brennan et al., eds. *Higher Education Looking Forward: Relations between Higher Education and Society*. Strasbourg: European Science Foundation, pp. 7–23. Available at: www.esf.org/helf.

Vázquez, J.A., 2013. La financiación universitaria. In F. Michavila, ed. *La Universidad Española en cifras 2012*. Madrid: Conferencia de Rectores de las Universidades Españolas (CRUE), pp. 194–207.

Vehovar, V., 2006. Social Informatics: An Emerging Discipline? In J. Berleur, M. I. Nurminen, & J. Impagliazzo, eds. *Social Informatics: An Information Society for all? In Remembrance of Rob Kling*. Boston, MA: Springer US, pp. 73–85.

Vest, C., 2004. Why MIT decided to give away all its course materials via the Internet. *The Chronicle of Higher Education*, 30, p.20.

Vest, C.M., 2006. Open Content and the Emerging Global Meta-University. *Educause Review*, pp.18–30.

Viale, R. & Etzkowitz, H., 2010. *The capitalization of knowledge : a triple helix of university-industry-government*, Cheltenham Glos UK ;;Northampton MA: Edward Elgar.

Villar-Onrubia, D., 2012a. Assessing Awareness on Open Education by Means of Online Research Tools (Working paper). Available at: <http://papers.ssrn.com/abstract=2085585> [Accessed February 20, 2013].

- Villar-Onrubia, D., 2012b. Interview with Pedro Aranzadi. In C. Cobo, C. Costa, & A. Inamorato dos Santos, eds. *Compendium of European and Latin American case studies and interviews on open educational resources and practices*. Niteroi, Brazil: OportUnidad Project, Universidad Federal Fluminense, pp. 140–41. Available at: <http://www.oportunidadproject.eu/resources/compendium.html>.
- Villar-Onrubia, D., 2013. Mapping attention to OER across Spain's HE sector: a web impact assessment. In *Proceedings of OER13: Creating a Virtuous Circle*. Nottingham, England. Available at: www.oer13.org.
- Villar-Onrubia, D., 2014. The value of Web mentions as data: mapping attention to the notion of OER in the HE arena. In M. Sánchez & E. Romero Frías, eds. *Ciencias Sociales y Humanidades Digitales Técnicas, herramientas y experiencias de e-Research e investigación en colaboración*. CAC, Cuadernos Artesanos de Comunicación, 61. Available at: <http://www.cuadernosartesanos.org/2014/cac61.pdf>.
- Vlădoiu, M., 2011. State-of-the-art in open courseware initiatives worldwide. *Informatics in Education*, 10(2), pp.271–294.
- Walker, S. & Creanor, L., 2009. The STIN in the tale: a socio-technical interaction perspective on networked learning. *Educational Technology and Society*, 12(4), pp.305–316.
- Walsh, T. & Ithaka S + R, 2011. *Unlocking the gates : how and why leading universities are opening up access to their courses*, Princeton, NJ; Oxford: Princeton University Press.
- Walsham, G., 1995. Interpretive case studies in IS research: nature and method. *European Journal of Information Systems*, 4, pp.74–81.
- Webster, F., 2006. *Theories of the information society* 3rd ed., London ; New York: Routledge.
- Wheeler, S., 2010. Open Content, Open Learning 2.0: Using Wikis and Blogs in Higher Education. In U.-D. Ehlers, ed. *Changing cultures in higher education : moving ahead to future learning*. Heidelberg ;;New York: Springer, pp. 103–114.
- White, D. & Manton, M., 2011. *Open Educational Resources: The value of reuse in higher education*, JISC-funded OER Impact Study, University of Oxford.
- Wiley, D., 2007. *On the sustainability of open educational resource initiatives in higher education*, OECD - Directorate for Science, Technology and Industry, Committee for Information, Computer and Communications Policy.

- Wiley, D. & Gurrell, S., 2009. A decade of development.... *Open Learning: The Journal of Open and Distance Learning*, 24, pp.11–21.
- Willems, J. & Bossu, C., 2012. Equity considerations for open educational resources in the globalization of education. *Distance Education*, 33(2), pp.185–199.
- Williams, J., 2009. The Pedagogy of debt. In Edu-factory Collective, ed. Toward a Global Autonomous University. *Gognitive Labor, The Production of Knowledge, and Exodus from the Education Factory*. Autonomedia, pp. 89–96.
- Williams, R. & Edge, D., 1996. The social shaping of technology. *Research Policy*, 25(6), pp.865–899.
- Willinsky, J., 2006. *The access principle: the case for open access to research and scholarship*, Cambridge, Mass: MIT Press.
- Yin, R.K., 2003. *Case Study Research: Design and Methods* 3rd ed., Thousand Oaks, Calif: Sage.
- Yuan, L. & Powell, S., 2013. MOOCs and Open Education: Implications for Higher Education, JISC CETIS.

11 Appendix A: Consent form

12 Appendix B: Interview guide 1 (OER experts)

- Could you please start talking a little bit about your background and professional career?
- How did you first get interested in open educational initiatives?
- Thinking of the higher education sector at a global scale, to what extent have such practices had an impact on the activity of universities so far?
- To what extent would you say that the production of open educational resources at universities is now consolidated? What about the consumption and re-used of them?
- In your opinion, what are the most relevant milestones in the history of the open educational resources movement?
- What are the most influential HE institutions and organisations working in this area, both worldwide and in Spain?
- Who are the main beneficiaries of the resources produced in the context of open educational initiatives?
- Are there any sectors that might see those initiatives as a threat? If so, why is that?
- What do you think are the main motivations for universities to promote the production of open educational resources by faculty members? And what about the main factors preventing universities from encouraging such practices?
- As for academics, what are the main motivations for them to engage in the production of open educational resources?
- What do you think are the key factors to successful and sustainable open educational initiatives in the long run?
- Overall, what would you say are the main opportunities and challenges faced by the open educational movement at this moment?
- Could you please talk about the open educational initiatives you have been personally involved in?
- Are there other aspects of open educational initiatives in general or the projects you have been involved in that you think I've missed and should know about?
- Follow-up: Who else would be valuable to talk to for additional perspectives?

13 Appendix C: Interview guide 2 (university leaders and managerial staff)

- Could you please start talking a little bit about your background and professional career?
- In your opinion, what is the main role of universities in the contemporary world, their *raison d'être*?
- To what extent do you think the creation of open educational content is or should be a priority for universities these days?
 - Who are the main beneficiaries of such practice?
 - Are there any losers? Do you think there might be some people or sectors, both within and outside universities, that can perceive such practice as a menace?
- How did the idea of developing an OCW initiative emerge at your university?
 - What are the main motivations and goals for your university in this regard?
- As for faculty members, what do you think are their main motivations to get involved as authors?
- What are the resources allocated to the OCW initiative at your university?
- How was the decision-making process on technological choices?
- Are there any mechanisms in place to ensure the quality of content before being published on the OCW site?
- What about the monitoring of impact or use of OCW content?
- What do you think are the main factors to the development of thriving and sustainable open educational initiatives in the long run??
- Are there other aspects of open educational initiatives in general or the projects you have been involved in that you think I've missed and should know about?
- Follow-up: Who else would be valuable to talk to for additional perspectives?

14 Appendix D: Interview guide 3 (authors)

- Could you please start talking a little bit about your academic background and professional career?
- What is the balance between teaching and research in your role as faculty member?
- What is the role of the creation of educational resources in your work as an lecturer?
- What kinds of educational resources do you use in your teaching?
- To what extent it is usual among your colleagues to spend time in the development of educational resources?
- To what extent is co-teaching a common practice in your department?
- What about the co-authorship of educational resources?
- How did you end up making your educational resources available on the public Web/OCW site/OER repository?
- What was your main motivation?
- Have you ever used any external services (i.e. not provided by your university) with the aim of sharing educational resources on the Web?
- To what extent do you think academics should be required to release educational resources on the open Web?
- What are the main benefits of such behaviour? What about the main drawbacks?
- Were you planning to release the materials on the Web when you created the materials?
 - Was it necessary to adapt the materials to the OCW platform? How much effort did the process of adaptation require? Did you need any support from your university?
- To what extent and in what ways does the creation of educational resources contribute to the career development of academics? And what about there release of such resources on the public web / as OER?
- Is there any mechanism at your university aimed at fostering the creation of online educational materials? And OER?
- To what extent are universities as autonomous organisations able to foster such practices?
- Have you ever attended any course or workshop on OER? How did you learn of Creative Commons?
- How did you learn about the OCW initiative? How did you end up contributing to it?
- Have you ever re-used in your teaching OCW/OER materials developed at other university?
- Do you know anything about those who use your OER? To what extent are these materials of use to people who are not university students?
 - Have you ever been approached by someone outside your university in relation to your OER? Why?
- What are the motivations of your university for launching an OER initiative?
- To what extent do you think it is a core element in its strategic orientation?
- Is there any flaw inherent to the OCW model of OER provision?
- Other comments