Higher Education in the Digital Age
MOVING ACADEMIA ONLINE

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Introduction
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THE MOVE ONLINE

In March 2012 the Encyclopædia Britannica, the oldest English language encyclopaedia, announced it would no longer print new editions. After almost two and a half centuries, printed volumes would no longer fill the bookshelf of a household or library. Instead the encyclopaedia had decided to focus exclusively on its online version ‘Encyclopædia Britannica Online’ (Encyclopædia Britannica, 2018) which it had been developing for some years.

Not only has the oldest English-language encyclopaedia moved fully online but other online reference works have been contesting its unquestioned role ever since. The Internet encyclopaedia Wikipedia, the “free encyclopedia that anyone can edit” (Wikipedia, 2017a), has rapidly become the new go-to source for information with hundreds of millions of unique visitors a month, and search engines like Google, with its knowledge graphs, are used by users worldwide to quickly access information, from “who Hannah Arendt was” to “what the European Union is”.

The world around us has been moving online in many other areas as well. Digital music streaming and downloading of music enjoy growing popularity – while CD sales are declining (Vincent, 2015); newspapers and companies are exploring all kinds of social media to connect with readers and consumers;¹ more than 160 million people living in the EU had an account on the social networking platform Facebook in 2017 (trend increasing) so as to stay in touch with friends and like-minded people (Statista, 2018); bookstores’ business is challenged by the online selling of electronic books.

Whether leisure activities or work; whether news and information or communication with friends; whether contributions to public debates or the purchase of goods – the way we organize our lives today is done (and increasingly so over the past years) online: our social, economic and civil activities today have a non-negligible online component.

Old Hats?

The question is, how is this trend of ‘going online’ that has so substantially disrupted other sectors (Christensen, 1997) re-shaping the higher education sector, and may the trend even pose a threat to higher education institutions?

Certainly, a lot has already happened over the past years in the higher education sector: from offering massive open online courses (MOOCs – Kim, 2015) to digitizing libraries (Calhoun, 2014); from

developing open educational resources (Wikipedia, 2017b) to online assessment and exams. Increasing numbers of academics use social media tools for their scholarly practices (Veletsianos, 2016; Carrigan, 2016; Mollett et al., 2017; Weller, 2011).

However, although some years have passed since The New York Times called 2012 the year of the MOOC (Pappano, 2012) and despite recent developments in the higher education sector, we argue that traditional higher education institutions are still far from grasping the full potential that online offers to the academy. Although a lot has already happened and a clear trend has emerged over these past years, open and online practices are not ubiquitous. Too many academics still consider online tools at best a well-meant toy, online initiatives by individual academics remain a rare plant in many university campuses. Often experiences of moving bits and pieces online remain disconnected and not well understood. And even if the use of online tools is regarded as important, for those looking favourably at what online practices offer to academia, the question remains as to how a large-scale ‘move online’ of higher education institutions can be achieved in practice.

The following chapters contribute to the debate about what ‘moving online’ offers in an academic context. So as to share insights in the many ways a move online is understood and organized, the book will look at experiences from a variety of academic contexts and institutions. In particular, the book aims to advance the discussion on moving higher education online by adopting a comprehensive and practical perspective:

● First, so far, we have mostly referred to online with regard to online education (e.g. online and blended courses, technology for teaching and learning, massive open online courses). While a focus on (online) education is important (see Chapters 1–6), in this book we propose to broaden the perspective to other academic practices (research and knowledge exchange) and how these have been moved online. The book argues indeed that only the deep integration of all academic practices will allow universities to fully grasp the potential of moving the academy online and thus staying at the forefront of knowledge creation and sharing in the future (see also Figure 0.1).

● Second, there is limited documented experience on how higher education can be moved online in practice, which addresses the full range of actions needed from the vision and strategy to the support of teachers, researchers, administrators and students. Discussing examples from different academic contexts will illustrate the many different opportunities an ‘online-ization’ offers to higher education institutions and ways to put it into practice.

The book will further discuss those factors that are assumed to have facilitated a move online in different institutions as to offer guidance to those interested in institutional change (from above or bottom-up). The book thus aims to nurture the debate about what the rationale for higher education institutions could be to incorporate a comprehensive digital agenda into their core strategy comprising all their academic activities, and second, how such a move online can be achieved.

NEW ACTORS IN THE KNOWLEDGE SECTOR?

While many areas of our life have moved online, we assume this move to have its most cutting effect on how knowledge societies are (and will be) organized. Briefly, this is about what the accepted practices of knowledge creation and sharing will be, and who are the legitimate actors in this field.

The cases of the Encyclopædia Britannica and its free online competitor Wikipedia are illustrative for some of the dynamics triggered by the onlineization of the knowledge societies: The simultaneous online provision of knowledge by a traditional and well-recognized actor on the one hand, and by a
new entrant that fundamentally challenges the way in which knowledge is created and made available, on the other.

- The Encyclopædia Britannica provides access to online articles for a fee. These articles are written and checked by world-leading (academic) experts, thus using traditional channels and practices of knowledge provision and quality control.

- In contrast, Wikipedia offers free access to its articles, created by a crowd of contributors from around the world in a form of open collaboration, without any (accredited) proof of their expertise in the field. This crowdsourcing of knowledge, for which Wikipedia is probably the most prominent example, has proven to be a powerful tool in the online world (Wikipedia, 2017c). Wikipedia is also opening-up the black box process through which the content of articles is checked in that articles can be traced back to previous versions and discussions on contentious information are accessible next to each article.

These cases illustrate the divergent practices of two prominent knowledge actors to create and share knowledge online.

Certainly, the practice of Wikipedia to create and share knowledge has not been without criticism. The article ‘Criticism of Wikipedia’ (on the very same Wikipedia site) summarizes the main critique of Wikipedia, for example the reliability of the evidence given and the quality of its content, or its editorial practices (Wikipedia, 2017d).² Indeed, teaching staff in higher education institutions generally seem to be critical of the fact that there is no identifiable expert guaranteeing the veracity of the information, but rather an anonymous crowd to create articles (Bayliss, 2013).

Yet, the ongoing, and inconclusive discussion and evidence gathering to compare the quality (and legitimacy) of the two knowledge providers hints – if nothing else – at the possibility that we cannot take everything for granted. While the Encyclopædia Britannica has been long an uncontested source for reliable knowledge, its form of knowledge production and model of knowledge sharing is not the sole one used today. Despite the critique of Wikipedia and the cautious use of Wikipedia by faculty³ the source seems to be widely used by students as an academic source of information (see e.g. Chen, 2010).

Whatever the attitudes of different users to this disruptive entrant might be today, there are three possible scenarios one can imagine for the two knowledge actors’ role in the future:

- The first possible scenario is that knowledge created through open collaboration and without acknowledged or accredited expertise in the field will never gain the same acceptance as traditional knowledge actors. The weaknesses of new entrants – or more precisely, the role of individual (accredited) experts and the rigorous methods used in higher education to create knowledge, will guarantee traditional players such as the Encyclopædia Britannica a privileged role in knowledge society as gatekeepers and safeguards of quality knowledge.

- Another possible scenario is that traditional actors will be marginalized as the need to constantly update and re-define knowledge is getting more and more important. This knowledge can be provided

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² See also Greenstein and Zhu (2014).
³ Depending on the perception of colleagues’ opinion of Wikipedia and its perceived quality as a repository of knowledge Wikipedia is used as source in higher education teaching (Meseguer-Artola et al., 2016). This suggests that as with many online practices (e.g. using Twitter as an academic), Wikipedia has not (yet) gained (mainstream) legitimacy within higher education, due to skepticism about the reliability and quality of content, but also as faculty fear a loss of reputation among colleagues.
at an acceptable quality in a quicker and cheaper format without a major issue of quality of content only through collaborative creation of knowledge. Knowledge that is created in open and collaborative processes, despite its weakness of being more vulnerable to misinformation (that might enter the knowledge production process and cannot be deciphered at the same pace) and article vandalism, will be the dominant socially accepted form and actors providing this knowledge creation and sharing will be the legitimate dominant actor in knowledge societies.

Finally, it is possible that both types of knowledge actors co-exist simultaneously. They might serve different needs, at different times, of different fluid audiences, but might as well simply co-exist as two providers of knowledge where users, depending on situational circumstances, chose one form over the other. The co-existence of the two spheres would however ultimately imply that the typical methods of knowledge creation and sharing in each domain (that is one inside and one outside higher education) do not impact and influence each other in any relevant way.

It is an open question whether the model of creating and sharing knowledge for which Encyclopædia Britannica stands will be fully replaced one day by knowledge that is openly created by a crowd around the world. New entrants have already entered the market offering learners the opportunity to gain competences, knowledge and skills in a flexible format. Our guess is that recognized (and accredited) experts of knowledge and established processes of quality control of knowledge creation and provision – for both of which higher education institutions currently act as gatekeepers and safeguards – will continue to play a role. In contrast to other sectors and industries that have seen major players disappear during waves of digital disruption (Christensen and Eyring, 2011), higher education institutions enjoy particular attention by policy-makers as national safeguards of the quality of their country’s advanced education, their research and their scientific heritage.

Yet, we assume for higher education institutions to fulfil their role as a leading player in the knowledge society and to stay at the forefront of (reliable and accredited) knowledge creation and sharing, they will also have to seize the opportunities offered by moving (also) online. They cannot afford to remain only with past practices if they wish to offer the best possible learning for all, trigger or contribute to critical public debates, and provide access to high-quality thinking and knowledge.

THE CORE BUSINESS OF HIGHER EDUCATION INSTITUTIONS

While there is no clear evidence (yet) as to whether other emerging disruptive actors will seriously challenge the present dominant role of universities, the opportunities online offers for creating and sharing knowledge substantially question current majority academic practices. Examples of this are the ‘open peer review’ that tries to overcome weaknesses or drawbacks of the current peer review practices; lecture capture techniques or public video recordings of excellent teachers that challenge bad teaching in a seminar, or open research designs that allow researchers to engage with a variety of stakeholders or citizens.

In addition to these emerging new academic practices, new practices of knowledge sharing and creation from outside the academy might spill over into the academy as well. The experience and willingness of any part of society to get involved in knowledge creation and sharing might even blur the boundaries between different practices within and outside higher education institutions to create and share knowledge, pushing the academy to question its own model of knowledge creation and sharing.
A discussion of the relevance of online tools, platforms and activities for higher education should not take place in a void: online is not a goal or benefit in itself but should be discussed within the wider frame of what higher education is doing now, or could be doing for the better. How can online tools, platforms and activities enhance academic practices, and thus manifest their role in today’s knowledge societies? What do higher education institutions typically do? There are three set of activities most higher education institutions are engaged in:

- **Education**: First, the (higher) education of its students – a kind of transformative journey where students get acquainted with higher level thinking and competences for their careers and for certain professions, and for citizenship in a changing world;
- **Research**: Second, the creation of new or revised knowledge through research;
- **Knowledge exchange**: Thirdly, activities beyond the university, through research communication and engagement, as for example, engagement with industry and society in general, to transfer and exchange knowledge, or contributing to policy debates.

These three areas of activities⁴ (see also Figure 0.1) may inspire, interact and overlap with each other as terms such as research-based teaching (see a further elaboration of this approach by Fung, 2017), engaged research (Holliman and Warren, 2017), or real-life examples indicate. Online practices, as we will discuss in this book, allow for a deep integration and thus constant innovation of these three areas of academic practices. The many links that can be created through online practices also allow higher education to better respond to challenges they are confronted with today and to clearly define their role in today’s knowledge societies.

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⁴ We should note here however, that new higher education entrants often follow different modes of operation, for example, private and for-profit providers such as the University of Phoenix in the USA and BPP (part of the Apollo Group) in the UK. Most of what we shall discuss in this book is concerned with state-funded, traditional higher education institutions.
CHALLENGES FOR (TRADITIONAL) HIGHER EDUCATION INSTITUTIONS

Higher education institutions today are exposed to new and different challenges compared to a few decades ago that concern all three set of activities: be it the increased student numbers in situations of tight state budgets (Barr and Turner, 2013); be it a bigger and more diverse student body; research designs that have to engage with society and policy-makers; the role higher education institutions are expected to take up for lifelong learning; international collaboration and competition with other universities; income generation in addition to state funding; right up to the question over funding models that relate the financing of academic institutions to the quality of their research; or, lately, to their teaching performance.

Probably, most consequential has been the shift, in Western economies, over the past decades from tertiary education for an elite to a post-compulsory education system that today can be considered massive. While higher education in post-war Europe only benefitted a small proportion of all citizens – less than 20 per cent of all 55–74-year-old people had attained tertiary education – the declared objective of the Europe 2020 strategy sets as a headline target that by 2020 “the proportion of 30–34 year-olds with tertiary educational attainment should be at least 40%” (Eurostat, 2017a, 2017b). In 2015, 38.7 per cent of the population in EU countries aged 30–34 had completed tertiary education, a number that has been already exceeded in many EU countries (Eurostat, 2017b). In the USA, Australia and Canada similar higher numbers participate in tertiary education in 2-year or 4-year

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5 See also European Commission (2017c) and Eurostat (2017c).
colleges (OECD, 2017). In a situation of unchanged or declining government financial resources worldwide, universities have been struggling over the past decades to offer education to an ever-growing student body, and have had to work to find economies of scale or additional new funding streams, or have had to reduce services (EUA, 2011; Geiger, 2015).

Further, the image of the ‘typical student’ is getting more colourful and complex. The common-held view that students in North America and Europe are young adults taking first cycle (Bachelor) full-time degree courses over three to five years is questioned by data on today’s learners accessing higher education institutions (Eurostat, 2017c; National Center for Education Statistics, 2015; Universities UK, 2015). Also, there is an interest by policy-makers in allowing learners from any age and any background to get access to higher education throughout life (lifelong learning). This has implications for the educational offers, as these learners typically have to combine other duties (work, family, care, etc.) with their learning activities, meaning that they cannot attend classes full-time on campus or even be able to attend scheduled classes on campus at all.

In addition, policy frameworks guide research. The quality and output of research institutions is monitored in order to allocate funding, and often the funding of research projects will be evaluated against a detailed dissemination or communication strategy and the evidence of research impact. The funding depends on the effort of researchers and their project managers to feed their results into expert panels, decision-making processes and the wider society (OECD, 2014; HEFCE, 2017; ARC, 2017). Importantly, the European Commission is pushing an agenda that rewards researchers for open science practices, including the link of funding to these open practices (European Union, 2017).

While providing the right state financial incentives to reward research excellence has been in place, or in the mind of policy-makers, for many years, recently, higher education policy in Europe is also giving the quality of teaching and the acquisition of specific competences more attention. In England in 2017 a new teaching excellence framework was introduced that makes a university’s option to raise tuition fees for undergraduate teaching dependent on their teaching quality (Wikipedia, 2017e).

Thus, universities today have to educate a larger student body and much more diverse groups of learners with different needs, expectations and backgrounds. There is today a more pronounced expectation that universities – in addition to a more holistic Humboldtian model of higher education – have to equip students and lifelong learners with key competences and skills “fostering the employability of graduates throughout their working lives” (EHEA, 2015). Finally, there are today different demands on research and a broader awareness within and outside academia that higher education institutions – as public institutions substantially financed by tax payers money – should contribute to European societies’ most pressing problems though engaging with different actors, and the communication of research findings – encompassed by the term ‘accountable academic’.

Throughout this book we argue that going online, in responding to some of these challenges and expectations, offers exciting and far-from-fully grasped opportunities to academics and academic institutions that are already being adopted by some teaching and research institutions. Importantly,

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6 See the European Commission’s policy in the field of adult learning (European Commission, 2017a), see also European Commission (2014).
7 See for example the Yerevan communiqué of the EHEA (2015).
8 See also the critical discussion of the framework by Murphy (2017).
10 See also European Communities (2007, 2003).
in addition to these push factors there are a variety of pull factors moving higher education online. What are the emerging trends we can observe so far in moving higher education online?

Some countries, and indeed some universities within individual countries, have moved well down the road to becoming online as a core part of their business and activities to respond to some of these challenges – or to embrace the opportunities offered by a move online. Some universities, for example, while not abandoning campus-based teaching, have brought technology into the core of this activity. Universities in the USA, UK, Netherlands and Australia have all been very active over the past ten years, with significant support from dedicated national agencies set up by governments or the universities themselves. Open universities being dedicated to teaching students at a distance and from less educationally-advantaged backgrounds or opening higher education to migrants (e.g. Open University in the UK – see Chapter 1 or the university for migrants in Germany: Kiron Open Higher Education founded in 2015) have had an influence on national progress towards less traditional forms of teaching and learning. For an increasing number of universities, teaching at a distance, often to students from other countries, has become a key part of their business and indeed vital for income generation. Other developed countries have been a little slower to embark on this journey (for fuller information see European Union, 2015), but are quickly catching up. Developing countries have also not been slow to grasp the opportunities of online education, often because they are addressing the urgent higher education needs of very large audiences, many of which are in rural locations. India, China and Brazil are three prominent examples (KPMG, 2017; EU SME Centre, 2014; Gottems, 2012).

Research too has adopted technology as a core part of its activity in all subject areas. Initially science and medicine, but now humanities and social sciences (ADHO, 2017; Spiro, 2014), use digital methods to capture (big and open) data, analyze it and promote the conclusions in publication and discussion. Arguably, research has led the way in universities in adoption of technology and this has been primarily due to the international nature of modern research where competition and collaboration are now standard ingredients. The modern digital library was first a digital research library with electronic journals, and gradually developed into a teaching and learning digital library too as e-books were added. The affordances of digital research have enabled greater participation in research by wider society, for example astronomy, textual conversion and analysis, ecology, and social attitudinal research, and in some fields citizen science is now a mainstream component of basic and applied research (Hand, 2010; BRC, 2017).

For a university to become effective in digital education and digital research, it must also change the way it conducts its administration. This will include a digital student record (that underpins the online learning environments and digital permissions to access courses and libraries); online methods for student admission, fee payments and academic tracking; research grant management, financial control and reporting; staff records and equipment inventories; and IT systems to keep everything available 24x7 and at the same time secure from malicious and accidental damage. As universities move towards having students ‘at a distance’, who may never visit the physical campus, and with researchers spread across the world, reliable digital systems become paramount (Educause, 2018).

The following chapters will share some concrete experiences of how academic practices can profit from moving online and how such a move online has been made work in practice. We will discuss examples to illustrate how going online enhances and transforms these academic practices. The ambition is to support a critical and carefully designed move online of higher education institutions,

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11 See for example the non-for-profit-company JISC (2017), as well as SURF (2017), and Educause (2017).
and by this, help in redefining the role of universities within today’s knowledge society, in line with social expectations of a 21st-century higher education institution.

THE FOUR DIMENSIONS OF MOVING KNOWLEDGE SHARING AND CREATION ONLINE

To better capture the various opportunities of what a ‘move online’ might offer to higher education, we propose to distinguish four dimensions of moving online: accessible, open, communicative & collaborative, and timely. Different combinations of each dimension can be found in online academic practices.

Accessible

Though having very different origins and disposing of opposing business models, both the Encyclopædia Britannica and Wikipedia make information and knowledge accessible by putting it online. Whether from a desktop computer at home, a tablet at work, or a smartphone during a city holiday – simply by having information and knowledge online we can access it from anywhere, at any time when needed – given we have an adequate Internet connection, and in the case of commercial goods, a credit card at hand or a PayPal account. Although there are still great inequalities in access to the Internet, even in developed countries, these are decreasing steadily and access to information is arguably now more widely accessible, for both adults and children, than in the days when it was locked up in specialized textbooks.

In the past it was probably a printed encyclopaedia on a parent’s bookshelf or in the school’s library where one would have looked up information for a school essay. Many kids today start Googling for information as soon as they know (more or less) how to write.

Online access to information allows us to check-out the origins of the Ventotene Manifesto from a laptop at home, the definition of open-access publications from a desktop computer at work, and the location and history of a historical building from a smartphone, while looking at its beautiful proto-Renaissance façade.

Moving knowledge and information online thus gives easy access, with no constraints to where this knowledge is physically stored (a historical archive in Florence) or when and to what conditions this information can be accessed (e.g. a student needing a reference letter from a university professor to access documents in an archive during its opening hours). Online access is not limited to information but also includes a series of activities one can handle from anywhere at any time at one’s convenience: from purchasing (and reading) a book, taking an online exam, or getting access to remote instruments or data.

Finally, formerly volatile or short-lived events where knowledge was shared or created can now be stored on the web and thus made durable and accessible. Recording a video lecture, or live streaming (and recording) a conference, and then storing it on user-generated content platforms, offers the opportunity to hold firm the verba volent and store the spoken word, whether during conferences, lectures, or debates or in the form of comments.

Moving online thus gives access to information and knowledge independently of where the information is stored, when it was created, or where and when the learner, policy-maker, student, faculty, expert or interested kid wants to access it, and it offers access to a series of activities which previously were strictly limited by time and place.
Open

Moving online further gives the opportunity to open formerly closed or black boxes. This may simply imply that knowledge is made available for free, as in the case of Wikipedia. Wikipedia offers encyclopaedic knowledge and information for free, which would not be the case when purchasing licensed digital content stored behind a paywall. In the academic world this has been most notably promoted by the open-access movement which aims at making (publicly-funded) research outputs (open-access articles or open-access data) free of any restrictions such as fees or user-rights. Open education also enables individuals to take courses, or even gain qualifications, online free of charge, for example with MOOCs (Kim, 2015) and the Open Education Resource University (OERu, 2017).

Further, and equally important, is the possibility of opening up the way in which knowledge is created or information is composed. Wikipedia is one of the most illustrative examples of opening-up the process through which an article is created and the discussion on contested information and concepts (see also discussion below): one can not only access the article itself, but also access the discussion surrounding the creation of that article. In the academy there has been, for some years, a debate around problems with the traditional peer-review process (The Economist, 2017; Rose and Boshoff, 2017). Proponents of the open-access movement have proposed to open the black box of peer reviews, by making reviews publicly available and some propose also to reveal the identity of the reviewers. This open peer review seeks to respond to some of the substantial downsides of the current peer-review practices (for a summary of the discussion see Veletsianos 2016: 21f).

Another example is the option of opening up the research process, as the research question, preliminary research findings or the data can be shared openly online. Interested audiences can visit information about a research project if it is shared online during its various stages, and the whole process can thus be opened up to anybody interested. Going further, it is now common practice in many fields to enable engagement of citizens with the research process itself though digital mechanisms (i.e. citizen science).

Finally, open also means to open previously restricted containers and boxes: online publications are not restricted by page limits of journals or books.

Putting knowledge creation and sharing online thus allows us to dismantle paywalls, to make knowledge available for free, to open-up the black boxes of academic practices (peer review, research design) and hence change the way knowledge is shared and created. Finally, ‘knowledge containers’ such as books or journals, previously limited by page numbers or word counts, can be opened up, and the content inside these containers can be linked to anything relevant with one click (interactive graphics, connected content and datasets, links).

Communicative and Collaborative

Moving practices to create and share knowledge online also offers all the advantages of social media tools to interact with a variety of people inside and outside the academy. Typically blog posts allow authors to receive (public) comments on their post. Similarly, sharing a research finding on Twitter will allow other users to give feedback or provide further information. Academic conferences make use of Twitter to engage with audiences that are not present in the conference room, or to set-up additional streams of communication in parallel with the panel debate. Social media tools thus allow communication about research findings, conference discussions, but also out-of-the-classroom learning activities to flow in multiple directions.
Further, the possibility for individual faculty to create communities that have similar interests or seek answers to similar questions allows for new communicative networks to emerge. Instead of being bound to the few colleagues working at the same institution, or those you would meet at occasional conferences and stay in touch with via email, online social networks allow one to get in touch with a broad set of experts from around the globe. Not only can you get in touch with experts and start a public conversation to which anybody can contribute, you can also create a network composed of people from a variety of institutions that might not typically meet at a conference and interact with each other.

Finally, putting the debates around topics in the (social media) public domain is not simply making discussions accessible or open for others to participate, it also gives the opportunity to tap into the expertise of this community, that is, crowdsourcing knowledge, for which Wikipedia is a well-known example. This collaboration describes a different model for knowledge creation that relies on multiple experts and other stakeholders, and the continuous construction of knowledge and information.

Putting knowledge creation and sharing online thus allows previously disconnected people to provide their feedback, thoughts and expertise, and potentially to enrich knowledge creation through collaborative work. Different, formerly passive knowledge and information recipients, are becoming co-creators of knowledge, potentially becoming members of communities of experts/learners and taking ownership of the knowledge created.

Timely

Putting knowledge online also offers the opportunity to make knowledge and information accessible instantaneously. As discussed above, accessibility means knowledge and information may be viewed at any time, yet, this does not necessarily imply that information and knowledge are being constantly updated and that the latest thinking on a topic is available. As knowledge and information are constantly changing, and there is a need get access to the latest debates, thinking and evidence in an area, timely access to information can make an important difference. An example is in evidence-based medicine where doctors use current research findings online to guide their decision-making (Masic et al., 2008; CEBM, 2017).

The possibility of collaborative knowledge generation (crowdsourcing) allows many more minds to work on a topic and possibly ensure that knowledge is updated at the same pace as it is needed. This is very different from traditional academic practices where it may take up to several years before a paper is finally published in a peer-reviewed journal. In some study fields, the approaches, methods and knowledge that students learn in their first year is outdated when these same students take their final exams. The possibility of making the discussion of a conference available online while it is happening, or to publish early research findings, allows access to information to be more accurate and timely.

Certainly, there are drawbacks as well, in that unreliable or deliberate misinformation enters the online world at the same pace. The drawbacks of putting knowledge online instantaneously (or at a much quicker pace) can, however, not be solved by refusing to put knowledge online but rather by enhancing the practices (and the actors representing these practices) through which the robustness of the knowledge may be rapidly checked.
Online is certainly not the answer to a variety of problems and tensions we encounter in the academic world. Knowledge that is made openly accessible online might well reproduce existing power relations, or, for example, radicalize opinions as online makes it easier to meet like-minded people and thus reinforce closed discourses of those holding radical views. Also, it might not necessarily be a good idea to replace all activities by an online counterpart: research suggests that many students prefer reading on paper instead of reading online, and there is some evidence that suggests that the visual hooks in a paper version are important for reading differently.\(^{12}\)

Further, face-to-face interaction with instructors seems to be of crucial importance for certain kinds of learning (e.g. practical laboratory or clinical skills) and for some types of learners. Going online does not imply moving everything we are doing online, nor would it be good to do so. As Veletsianos (2016) points out, it will depend on the awareness of the potential tensions of online practices and a critical engagement of scholars with these to capture its major advantages.

In the rest of this book we will therefore look at the potential, but also the tensions and challenges, that will need to be addressed if online is to be used as a strategy to enhance learning, to enrich research or to contribute to a critical public discourse and decision-making. We will start by discussing recent dynamics of online teaching and learning, to then move on to other examples of how higher education has been moved online: online collaboration of faculty, research communication and examples of moving entire projects online comprising a broad set of academic practices as summarized in Figure 0.1.

In Chapter 1 ‘The transformation of distance learning at Open University: the need for a new pedagogy for online learning?’ Liz Marr argues that to fully exploit the potential of online education we will need to develop a dedicated online pedagogy that takes into account its differences to classroom teaching. Online education cannot solve miracles or compensate drawbacks of what is not working well in education without getting down to the root of the trouble. Badly designed courses that are simply put online, or low-quality MOOC lectures have been shown to leave the learner behind. Sharing the experience of the oldest distance education provider in the UK, Marr describes how the move from old distance teaching to 21st-century online teaching and learning calls for a different focus on and engagement with learners and the need to take the diverse context from which the learner gets access to the educational offer into account.

Online learning indeed calls for a different focus on teaching and learning. The current debate on teaching quality opens a window of opportunity to discuss the limits of traditional teaching and learning approaches and develop innovative and transformative teaching and learning practice. Along these lines, the chapters of Peter Bryant (Chapter 2 ‘Making education better: implementing pedagogical change through technology in a modern institution’) and Ismael Peña-López (Chapter 3 ‘Translearning: unfolding educational institutions to scaffold lifelong networked learning’) emphasize the need for an in-depth understanding of new approaches to move beyond traditional forms of teaching and learning in allowing for networked learning, lifelong learning and sovereign learners.

Sharing another practical example Annika Zorn, Sissonen and Chiara Canestrini describe in Chapter 4 ‘How to design a 21st century online course M4629-ZORN_9781788970150_t.indd 16 06/09/2018 09:56 Introduction 17 that makes learning happen for all’ the creation of an online platform that developed its own online learning and teaching approach, avoiding the limits of traditional distance education as well as the main pitfalls of massive online courses such as low completion rates, teacher-centred approaches and low level learning.

\(^{12}\) For a comprehensive overview see Walsh (2016).
Moving education online substantially challenges traditional practices of academic institutions and the academics working there. In Chapter 5 on ‘Leading innovation: digital education in a traditional university’ Jeff Haywood reviews theories of leadership for innovation in higher education, and then considers in more detail how the University of Edinburgh, as a traditional, comprehensive university with a 400-year history, has applied this thinking to place itself at the forefront of digital education. Haywood describes how the university worked to maintain excellence in teaching and learning as it introduced fully online courses, and discusses some of the challenges as well as the opportunities which this move to digital offered to the university.

Online education has not only allowed us to connect learners from across borders, but also allows faculty from different countries and institutions to develop innovative educational projects and to offer new models for knowledge creation and sharing. In Chapter 6 ‘CORE: bringing the economics curriculum online’, Alvin Birdi describes how an international team developed a curriculum in economics, resulting in an openly accessible and flexible educational resource transforming the learning and teaching experience. The chapter starts to move beyond a perspective on online education, providing a glimpse at new forms of collaboration beyond national and institutional borders: the move of putting a curriculum online has allowed faculty, teachers and learners to innovate the way we want to teach and learn and how we want to engage with the wider society.

Online practices contain tensions not only for academic institutions but for the academics as well. Bonnie Stewart explores in Chapter 7 ‘Identity at the core: open and digital scholarly leadership’ how identity and leadership operate differently in digital and media-based spaces than they do in conventional institutional structures. It outlines the prestige economy of open practice in comparison with that of the academic hierarchy, and frames how knowledge exchange and dissemination work in the open. It describes ways in which graduate students and early career researchers can build identities that will enable contribution to and leadership in their fields, in spite of increasing academic precariousness and declining hiring, and ways in which senior leaders can engage with digital tools and media to address the challenges and tensions of digital change.

Adding yet another piece to the picture of moving higher education online, the book then offers a perspective on institutional practices for sharing research results, giving a glance at how research communication is set-up at a higher education institution and a research institution (think tank). Chapter 8 ‘Sharing knowledge at a research university: experiences from London School of Economics’ by Sierra Williams and Chris Gilson describes the research communication strategy and tools adopted at the London School of Economics to engage directly with wider public audiences rather than working through traditional mediators such as the press and advisory committees. The chapter also looks at the experiences of starting and growing a community of blogs in a higher education setting and reflects on the key challenges faced by institutions in effectively sharing academic knowledge today.

In Chapter 9, Giuseppe Porcaro looks at the research communication strategy of a research institution whose success depends heavily on its ability to communicate its research findings to a variety of stakeholders, decision-makers and the wider society. ‘Effective online communication for policy advisors: experience from Bruegel think tank’ looks at challenges and the methodologies to map and segment audiences in a think tank such as Bruegel, where the research output is aimed at influencing public policies. Porcaro describes how the think tank carefully plans the use of different tools, and combines online and offline elements, and how this strategy has to be constantly reviewed to allow for an effective communication.

The final case study discussed in Chapter 10 ‘Moving a higher education school online: Florence School of Regulation’s all-around online-ization’ describes the effort to comprehensively move all academic
practices of a project online. Annika Zorn, Daniela Bernardo and Chiara Canestrini describe how moving three academic practices online (education, research and research communication) allowed the School to become one of the leading academic thinking hubs on energy regulation and policy in the EU. The online-ization allowed for a constant circulation of academically robust and practically relevant knowledge among academics and practitioners working in the field.

Instead of giving a summary of the chapters, the concluding chapter seeks to point to some common features across the different experiences to move higher education online. It also will offer a selection of those factors emerging from the chapters, that are assumed to be most decisive for those willing to lead change in their institutions, or from outside.

In the epilogue Salla Sissonen introduces us to Anna, a 12 year old Finnish girl who will knock at higher education institutions’ doors in less than ten years and her approach to learning, and, in consequence, her likely expectations at a 21st-century higher education institution.
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Chapter 1 - The transformation of distance learning at Open University: the need for a new pedagogy for online learning?

Liz Marr

IS IT POSSIBLE TO START ‘DIFFERENT’ AND STAY DIFFERENT?

The Open University (OU) in the UK has been delivering distance higher education for almost fifty years. Initially conceived as the ‘University of the Air’, the OU first used broadcast technology to reach its remote students but, as digital techniques have developed, has moved much nearer to a fully digital provision. In so doing, it has become a leading innovator in pedagogies for technology-enhanced learning and ground-breaking in its support for distance learning, whilst maintaining its mission of being open to people, places, methods and ideas.

The benefits for learners of moving to online provision are ostensibly multiple. Learning can be engaged with both synchronously and asynchronously, offering flexibility for those who cannot attend a face-to-face session due to work commitments, caring responsibilities or disability. However, delivering a fully online experience is not without challenges and this chapter will explore a range of issues which universities wishing to harness the power of digital technologies must at least be aware of.

‘Putting it all online’ does not necessarily make for a qualitative enhancement of the student experience. Rather the university must: place the learner front and centre of the learning experience; address the range of diverse contexts, situations and needs of all learners; recognize that studying remotely can be an isolating experience; appreciate the need for new ways of engaging learners; explore and engage with new forms of quality assurance and enhancement.

The OU’s original pedagogy of supported open learning had as a central tenet the use of ‘feed-forward’ in which the learning takes place through assessment. The learner uses the materials provided to explore key themes and develop study skills but the feedback on assignments has a specific focus on the learner’s future development. This principle is still central to the OU model but developments in digital technologies have enabled other ways to support learners and their learning. To illustrate some of these points, examples of two specific initiatives – learning analytics and Student Hub Live – will be presented and discussed.

BACKGROUND: THE OPEN UNIVERSITY UK

The OU in the UK is, at the time of writing, approaching its 50th anniversary but its mission – to be open to people, to places, to methods and ideas – and its values remain unchanged from those which informed its naissance in the late 1960s. Huge changes in technology since then have allowed the university to reach out to more people, to be even more independent of place, to use very different
methods and to constantly adopt new ideas. Over its lifespan, it has moved from books and broadcast (television and radio) to online delivery but always supported by a model which provides personalized support and feedback, a sense of belonging and the highest-quality teaching materials.

The origins of the OU, and indeed the international Open University movement, lie in the political context of the post-war boom in the United Kingdom, with the expansion of the welfare state and a growing sense of the criticality of education and the need for broader provision. The ‘University of the Air’ was the brainchild of the then prime minister, Harold Wilson, who saw it as a provider of opportunity to those people disenfranchised by an education system which, particularly within the post-compulsory sector, excluded those without the social, cultural and educational capital deemed essential for success.

Importantly, the founders were keen to ensure that this new form of provision was not ‘offering to students a makeshift project inferior in quality to other universities’ (MacArthur, 1974: 6). Rather the aim was to develop correspondence materials of the highest quality, supplemented with lectures on radio and television. In fact, the latter were much more than just lectures as the media enabled far more innovative and sophisticated approaches to teaching and learning. The success of the initiative can be seen in the sheer volume of people who have since benefitted from the life-changing experience of OU study (OU, 2017a).

**COMPOUNDING PROBLEMS: CHALLENGES FOR THE OPEN UNIVERSITY**

Despite over two million learners achieving their learning goals with the OU over the last 50 years, the key characteristics of the learning experience – it being open, distance and part-time – can have negative consequences. All three factors, individually and in combination, influence the learning experience and have important implications for pedagogy and the use of technology.

Distance education within the higher education sector is that which allows the participation of learners in a learning experience without them being physically present in a built environment, such as a campus or classroom. The terms distance learning and online learning are sometimes used interchangeably but whilst technology can facilitate learning at a distance it is not essential. Keegan (1980) for example analysed four definitions which variously address the presence of the teacher, the learner and the tools which are used to facilitate engagement with the learning itself.

The primary disadvantage of distance learning lies in the isolating nature of the experience. However good the teaching materials, the learner studies alone and only infrequently comes into contact with teachers and other learners. For some this is a preference but for others alienation can very easily set in and motivation fail, resulting in much higher dropout rates compared with those in traditional face-to-face environments. Furthermore, because students are at a distance it can be much harder to re-engage them in their studies.

The ‘open-ness’ of OU study can also be problematic. Being open in the context of open universities is generally taken to mean open access – that is anybody can study, regardless of prior educational qualifications or attainment. This fundamental principle of the OU is seen as sacrosanct but is also a major issue in relation to student success. Higher education courses require a level of prior skills development which is usually developed through post-compulsory study at level 3, both in academic and vocational programmes. For adults returning to learn, sometimes many years after the end of formal schooling, there is a need both to refresh such skills and to support confidence, legitimacy and agency in the learner (Marr et al., 2013).
The rapid and catastrophic fall in part-time student numbers in England between 2012 and 2017 has largely been attributed to the introduction of higher fees and loans in 2012. As Butcher has identified (2015), however, studying part time is not a choice for some students but their only option. Whilst the OU in the UK has experienced some decline, this has not been as great as in the sector as a whole, due to the geographic flexibility which distance learning offers. Nonetheless, many writers have recognized the additional challenges part-time students face, particularly in respect of community and engagement (Marr et al., 2013).

Part-time study at higher education level in the UK is often delivered as in-fill to full-time provision – that is, students study at a lower intensity over a longer period but attend classes with their full-time peers, supplemented in some cases by evening or weekend classes or block provision. With distance providers full-time study is possible but uncommon. Students can take up to seven years to achieve a level 6 (European Qualification Framework – EQF) qualification, although many initially believe that it is possible to do it more quickly. Indeed, a common cause of attrition is the student’s belief that they must register for 120 (UK) credits in an academic year (60 European Credit and Transfer System – ECTS) but then fail to cope with the workload, alongside work and caring responsibilities.

Thomas (2015) has explored the notion of ‘belonging’ for part-time students in face-to-face higher education and has noted their sense of being treated as outsiders, attending evening classes when the library and cafeteria are closed, never feeling part of a cohort or community with their full-time peers and not seeing themselves as ‘real’ students. There has been very little work to date on community and engagement for distance learning students, for whom the part-time-ness of their experience manifests differently. There are no set study times, other than for (optional) tutorials and engagement with their fellow students and tutors is rarely face-to-face.

In its earliest incarnation, the OU in the UK provided distance learning through the provision of printed texts, tape recordings or long playing records, supplemented by television and radio broadcasts, local tutorials and summer schools. Students were allocated a tutor who they could meet regularly, if they wished to, and who provided feedback on their assessed work. At that time the use of broadcast media was a significant development in engaging learners but the fundamental correspondence course which underpinned the model did not necessarily require technical solutions – rather they provided enhancement. The development of information and communication technologies over the years has made possible far more sophisticated techniques for students to engage with their learning, their tutors and their peers and at the time of writing the OU is embarking on a new strategic direction to move from the University of the Air to the University of the Cloud (Weale, 2017). Our challenge is to ensure that innovation in pedagogy keeps pace with innovation in technology.

THE CHANGING ROLE OF TECHNOLOGY AND LEARNING DESIGN

Innovation in technology for teaching and learning is not necessarily the introduction of new tools. More often, the innovation relates to the ways in which technologies might be used or combined. Early OU provision was predicated on a correspondence model – the student received materials, submitted assignments and was given detailed feedback by post. The learning experience was supplemented by regular face-to-face tutorials and a summer school providing a week-long immersion in a study experience. Whilst the tutorial model and the provision of books has persisted, summer schools have decreased and often been replaced by day schools or by online forums where learners and teachers can interact asynchronously. Modules, the building blocks of qualifications, all have online options – some no longer providing printed material – and may offer online tutorials in addition...
to face-to-face. Students have access to a Virtual Learning Environment but there is still a tendency to design for print and then convert this to an online experience.

However, as Sir John Daniel has pointed out, Open Universities may be struggling to know how to dress now that traditional universities have stolen their clothes (Daniel, 2017). Digital technologies are increasingly being mainstreamed in all university provision and there has been considerable growth in dedicated online institutions around the world. At the same time in England at least there has been a dramatic decline in the numbers of part-time learners – 56 per cent between 2010 and 2015 (Horrocks, 2017a) – which has impacted heavily on Open University student numbers. Primarily this is a result of changes to fees and funding which saw the cost of OU study trebling in 2012 and students required to draw down loans to fund their studies. Employer sponsorship has also declined markedly with the realization that employees could self-fund through the loan system. Financial drivers have, consequently, driven thinking about what the University of the Cloud might look like.

The growth of MOOCs was heralded as a major disruptor in the higher education sector but that promise has so far been slow in materializing. The democratizing potential of free, open online learning is necessarily limited by access to technology, adequate network connectivity and prior learning experience, such that the post-graduate market is benefitting more from the opportunities which MOOCs offer. Nevertheless, the influence these developments have had on learning design and approaches to delivery have been far-reaching, particularly at the OU. Involvement in FutureLearn as a wholly-owned commercial subsidiary of the University has provided multiple opportunities to consider how our online learning might develop in the future.

In their Innovating Pedagogies annual reports (see for example, Sharples et al., 2016) the OU has been sharing learning and thinking around pedagogies since 2011, with particular reference to innovation in education. Not all pedagogies are reliant on, or determined by, digital technologies but many are facilitated or enhanced by enabling technologies. The 2016 edition, for instance, includes learning through social media, learning though video games and formative analytics as examples of using existing technologies in new settings. Sharples et al. make the point that: ‘With so many new and emerging pedagogies, the obvious question for teachers and policy makers is “which ones should we adopt?”’ (Sharples et al., 2016: 7). In response to the changing world and economic and policy context in which the OU exists, a dramatic redesign was launched in early 2017. Its intention is to deliver world-leading part-time distance learning and teaching with digital innovation at its heart, where students will have greater choice over start times and study intensity, be able to work flexibly on any device and receive personalized support for their learning. The Vice Chancellor, Peter Horrocks, commented that, ‘We were disruptive and revolutionary in our use of technology in 1969 and as we approach our 50th year we intend to be disruptive and revolutionary again...’ (Horrocks, 2017b).

The concept of personalized open learning is central to this vision in which the student will be able to choose, with guidance, when they start, how fast or slowly they will work their way through a programme, what support they will need and how they will access this. At the same time a shift away from designing for print and towards a fully digital experience is essential to support an ‘any time, any place’ model. That is not to say that print will be unavailable – many students with disabilities and those in secure institutions may still require the option to print. Rather, the emphasis will be on ensuring a high quality, interactive digital experience to enhance learning. After all, there are very few young people now – our future students – who are not avid consumers of digital media in all its forms.

To prepare for its future, the OU is adopting a test and learn approach to pedagogical change to establish what will work best. There are, of course, many examples which can be used to illustrate the range of pedagogical choices available but this chapter focuses on just two examples of the way we
are currently using technology to support learners and to overcome the barriers which distance and part-time students face. The first of these, learning analytics, is not new in the sense that it has always been possible to identify variables which may impact on learning but digital engagement enables a much more detailed and real-time view which facilitates intervention at the point of need. The second example, Student Hub Live (OU, 2017b), concerns the use of existing technologies combined in new ways to enhance the sense of community for the learner and thus foster engagement and persistence.

THE USE OF ANALYTICS IN SUPPORTING LEARNING

According to Sclater et al. (2016), ‘Learning analytics refers to the measurement, collection, analysis and reporting of data about the progress of learners and the context in which the learning takes place.’ Student engagement with their studies has long been measurable in terms of attendance, submission of coursework, performance in assessment and use of the library, for example. With the gradual introduction of Management Information Systems for student registration and records, the potential to link these has enabled profiling which has the capacity to predict success. However, we know that attendance, for example, is not a measure of engagement with learning or success, although it is usually a good indicator. In combination with other indicators, however, the information is likely to be much more helpful.

The use of digital technologies in learning creates potential for much bigger datasets but, as HEC (2016) point out, our digital footprints provide more unstructured data. Data analytics, as they say, is the process where data is collected and analysed in order to identify patterns, make predictions and inform business decisions (HEC, 2016: 11). Within face-to-face HE, fluid data, which marks out the digital footprint, can be acquired from swipe card access to buildings or services. Logging into the institution’s Virtual Learning Environment (VLE) also creates records which show what a learner has looked at, how long they spent listening to or watching a file and what links they click through to.

The benefits of using learning analytics are substantial, particularly when they are used in predictive modelling. The OU has been working towards some predictive modelling which draws in prior educational experience, individual characteristics (such as age, employment status, study intensity) and performance on assessed coursework. Using this information and building on accumulated data the University is able to predict the likelihood of success and determine the appropriate intervention for the individual.

Concerns have been raised about the ethics associated with the use of analytics as a pedagogical tool. For instance, when data shows that learners with specific characteristics are less likely to succeed, institutions may decide not to accept applicants sharing those characteristics, particularly if funding and reputation are tied to completion and achievement rates. Such an approach would, however, be fundamentally at odds with the Open University’s vision. The use of analytics is focussed on what the institution needs to do to better support a student or a cohort, whether that be at pre-entry stage or mid-programme. The following examples illustrate this point.

BOX 1.1 PRE-ENTRY ANALYTICS

Esme is a 34-year-old full-time carer from a BAME background. She wants to study to enhance her employability options when she no longer has caring responsibilities. She left school at 16 with no qualifications but worked in administration for several years before becoming a carer for her disabled parents. Analysis of trend data for those with similar characteristics suggests that Esme might benefit
from some pre-entry preparation for study and she is therefore advised to complete some diagnostic 
tests which help her to understand her literacy and numeracy skills and her digital literacy. The 
outcome of the tests may include guidance to some free courses on OpenLearn or FutureLearn or 
suggest that Esme begins her study with an Access course.

BOX 1.2 ON-COURSE ANALYTICS

James is a 45-year-old mechanic studying Environmental Management. He is part of the way through 
his first module but data has shown that although he started well and got a good mark for his first 
assignment, his VLE use has declined, he is spending only short periods of time looking at course 
materials, his second assignment was submitted late and received a bare pass mark. Support messages 
triggered by these occurrences have not been opened. On the basis of this profile, James is considered 
to be at risk of non-completion. The student support team contacts James to discuss what support 
might be needed and find that he has recently had to take on extra hours at work and is caring for a 
sick relative. As this is a temporary situation but likely to endure for at least the next six months, James 
is advised that he can ‘bank’ his assessment and re-join the course in its next presentation.

Both these examples show that learning analytics can be embedded into pedagogical strategies to 
enhance student experience and support completion and achievement. Data can also be used to 
enhance teaching, for instance if a whole cohort performs badly on an assessment, this might indicate 
a need for better preparation or revision of the assessment instrument.

THE ROLE OF STUDENT HUB LIVE IN CREATING COMMUNITY

A more recent pedagogical innovation focuses on the creative use of digital technologies to create 
community and a sense of engagement. OU students can meet physically in tutorials, at day schools 
or through OU Student Association (OUSA) events and meet virtually through forums which may be 
synchronous or asynchronous. There are both official and unofficial Facebook groups established but 
no equivalent of a face-to-face campus experience. The idea of a sense of belonging as a factor in 
persistence and achievement (Thomas, 2012) has been a driver for the development of Student Hub 
Live (OU, 2017b) – a livestreamed interactive online event where students interact with studio hosts 
through social media. Originally launched as a ‘Freshers’ event to welcome new students to the 
university, Student Hub Live (SHL) uses an informal, ‘breakfast television’ format with a mix of 
informative and fun sessions. Academic staff are invited to conduct debates, run skill sessions and 
answer questions from students.

The format has been expanded to include Faculty or discipline specific events, topical debates and 
study skill boot camps. Students are encouraged to submit their own videos, blogs, selfies, questions 
and responses to activities which are highlighted during live sessions. All the recorded assets are 
available for re-use and many are shared more widely via YouTube. Student reaction is extremely 
positive with over 6000 views of the 2016 induction event on an intake of 8000 new students. Study 
skill boot camps routinely attract thousands of views and the following are indicative of the kind of 
feedback received:

Being an OU student can be a particularly lonely experience. Having events like student hub 
live is so important in enabling students to connect not only with other students but with a 
faculty. The events have given me the impetus and drive to complete one module and start my
second. Without these events I don’t think I would have been able to complete my studies. Before signing onto it I imagined I would only stay a short while and then log off, though it kept me entertained all day whilst reading much of my course material. I think it really was fantastic.

There is potentially also a role for SHL in attracting new students:

I’ve been thinking about starting one of the courses at The Open University. I watched the first Student Hub Live session (Boot Camp One) and I am just amazed. You are doing such a great job informing people and giving all kinds of support and explanations! That makes them certainly feel much more comfortable and safe about their studies. The way you seem to be so organized and lovely to deal with the student’s issues really made me more confident to take my decision on starting at the OU.

SHL is, however, expensive to run in that it requires film crews, equipment and studio set up. The SHL team have therefore experimented with the use of Online Rooms from Adobe Connect to deliver study skill workshops. These are very well attended – up to 500 attendees a session – and well liked by students. Feedback also suggests that this kind of communal event is more attractive than tutorial sessions, which are generally very poorly attended:

What a fantastic way to swap ideas and also find out that tutors love chocolate. I just wanted to say how much I enjoyed last night’s session on Essay Writing. It was quite fun – so much more than the dry on-line tutorials. Nice to hear your voices those who organised, and if you could just be available every evening that would be great!

SHL is now embedded in the business of the University, delivered with Faculties from the Learning and Teaching Innovation portfolio. Its popularity with students and staff and the ease with which it has been implemented shows that it is not necessary to develop new technologies to enhance the student experience but to think about different and creative ways of using existing techniques.

CONCLUSION

There are now many Open Universities around the world, some constrained in their open-ness by local regulation but all with similar missions – to provide opportunities for those who might not be able to access traditional higher education institutions. Developments in technology are encouraging all universities to consider how they can enhance the student experience – learning analytics are becoming increasingly ubiquitous, for example, but for the most part blended delivery (a mix of face-to-face and online) is becoming the norm. Open and distance institutions must still, however, make provision for those who can only study remotely and future generations of learners will be much more digitally literate than current cohorts. Technological innovation is not, however, a panacea. Rather it is the innovative ways in which technology is used in a teaching and learning context, aligned with appropriate pedagogic choices that will enable learners to engage and succeed.

As long ago as 1971, Ivan Illich argued that an educational system should:

[Provide all who want to learn with access to available resources at any time in their lives; empower all who want to share what they know to find those who want to learn it from them; and finally furnish all who want to present an issue to the public with the opportunity to make their challenge known. (Illich, 1971: 75)
As Sharples et al. point out, though, this ‘presents technical, educational, and social challenges to modern providers of online learning’ (Sharples et al., 2015: 1). All online providers face these challenges, open and distance universities more so. The need to put pedagogy at the heart of course design is critical for effective learning, whatever technologies are used.
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Chapter 2 - Making education better: implementing pedagogical change through technology in a modern institution

Peter Bryant

INTRODUCTION

The student and their relationship to the institution and their discipline is the common thread running through the discourses around the future of higher education in the digital age. Variously described as the client, the customer, the learner, the market and the problem, the student is at the very heart of the function of a modern university. More than an enrolled presence in a virtual or physical classroom, the student is one of the demonstrable representations of how institutional knowledge and the society they enrich, intersect. The student in the digital age can be influenced and connected with higher education in many ways, most of which do not involve didactic instruction, formal institutional structures, Socratic questioning and recall driven assessment. The student might experience a three-year undergraduate programme by taking courses and undertaking assessments on campus. Equally, higher education might be engaging with learning fleetingly through the tiniest fragments of knowledge necessary for their own, unique educational purposes. The student might sit in a classroom, meet their colleagues and build a network of faces, voices and names, or they might engage online, in and through social media, maybe never seeing, meeting or hearing their network of fellow students. They might learn by doing, touching and making objects and knowledge or they might learn through the crowd, where knowledge comes from collective intelligence and problem solving.

These experiential variations are at the very heart of the need for pedagogical change at our institutions. Yet their implementation into teaching and learning strategies is often marked by the taking of dichotomous, heartily-defended positions in the ‘fight’ for the pedagogical direction of the institution: Traditional versus techno-centric. Student-led versus research informed. New versus old. Affordances versus Resistances. Technologies versus Pedagogies. Service versus Strategy.

MAKING THE CASE FOR PEDAGOGICAL CHANGE THROUGH TECHNOLOGY

In a complex higher education environment, the necessity for pedagogical change and technological innovation is increasingly impossible to ignore (Davis and Sumara, 2009; Greenhow et al., 2009; Greenhow et al., 2016; Timmis et al., 2016). Students are facing the prospect of finding employment at the end of their studies in industries or job roles that do not yet exist (Lizamore, 2017). Institutions are delivering education for increasingly fragmented markets that demand different outcomes, modes of delivery and flexible approaches to learning (Brown and Carasso, 2013). Governments regulate higher education practices, quality procedures and funding as instruments of policy driven socio-economics (Marginson, 2013).
There is a significant body of literature describing the functions, aspirations and activities of a modern university in the digital age (e.g. Pearce et al., 2011; Siemens and Weller, 2011; Beetham and Sharpe, 2007; Brown, 2001; Selwyn, 2012; Siemens, 2005). Many of these studies cite changes, from critical engagements with curriculum and learning design through to how the practices of teaching and learning are disrupted and transformed by technology and social media practices. These assertions of disruption attributed to technology and the need for education to adapt and change in its face are not a recent phenomenon, with James Finn noting in 1960:

Turning now to education, it becomes apparent under this national and international drive for technological superiority that: (1) those concerned professionally with education have not developed a well-conceived point of view and a position and/or positions concerning technology and education, (2) because of this lack of a point of view and because of certain cultural lag factors naturally associated with education, the acceleration of technological development has tended to by-pass the entire educational enterprise until very recently, (3) professionals in education are not prepared now to deal with the tremendous impact that technology is beginning to have on the instructional process itself as, by the technological process of extension, technology begins to invade education in full force, and (4) the absence of understanding and a point of view among the profession creates a situation where the Neo-Technocrats not only can, but are beginning to move into the field of instruction. (Finn, 1960: 8)

Challenges to the efficacy of implementing strategic pedagogical change through technology have created binary positions and oppositional politics, where technology has been labelled as the enemy of good teaching and the antidote to bad. The activities of online and blended learning have suffered this fate to an even greater degree, with increased global competition, falling completion rates, propriety learning systems (such as the Virtual Learning Environment) dictating how we teach and the disruptive effect of new entrants and start-ups, fracturing the educational offer. Pedagogical change and technology represent critical instruments to support how institutions can navigate and excel in the modern higher education environment. They support both the enhancement of practice and leverage the possibilities of innovation. Working together, they engage the institution with a post-digital society that has been fundamentally transformed by technology.

The collaborative Future Happens project (run by the London School of Economics and Political Science and the University of the Arts, London, http://www.futurehappens.org) addresses the difficulties of pedagogical change and technology, arguing that institutions are facing wicked social problems in an environment of resistance, time poverty, competing priorities between research and teaching and pressures and financial imperatives driven by commercialization and the need for profit. Students, staff, employers and the institutional community engage in higher education with different literacies, different ambitions and different aesthetics and technology, and online and blended learning is the lightning rod through which these differences are played out:

The debates about the potential of technology, the tensions of techno-determinism and the fears of replacement and redundancy have centred the discourse on service rather than pedagogy or research. The problem is that the genie is already out the bottle. There is no going back to chalkboards and overheads and we won’t be shutting off the internet any time soon. Technology and the digital are already integral to what we do but the presence of technology does not automatically equate to a shift in practice. (Bryant and White, 2016)

In the context of these intersecting tensions, what is the institutional case for making education better through pedagogical change? The answer to this question will change from institution to institution.
Common to every university in the modern age is that pedagogical change is not about the efficiency or importance of old and new technology. Locating the discussion within debates about the technology and its potential to transform the educational experience for our students can stop us talking about what is more important. What we need to debate at an institutional level is the difference between old and new learning. This is a problem with conflicting values, social system issues, information from research studies and practice evaluations representing often dichotomous positions and where ‘the ramifications in the whole system are thoroughly confusing’ (Rittel cited in Churchman, 1967: 141).

ADDRESSING PEDAGOGICAL CHANGE AT THE LONDON SCHOOL OF ECONOMICS

At the London School of Economics and Political Science (LSE) in the United Kingdom we have engaged in a three-year strategic programme that was designed in response to a number of critical drivers for enhancing teaching and learning. This programme utilized a design-thinking approach (Meinel and Leifer, 2010) to inform the case for pedagogical change through technology. We started by visualizing the university as a series of overlapping spaces, representing where students, academic staff, professional services teams and society reside and engage in teaching and learning. Central to any pedagogical change programme we proposed to senior management was the necessity of finding commonality within those spaces. This became the centerpiece objective of our 2015‒2020 Technology Enhanced Learning strategy (called Learning, Teaching and Technology Futures) which set out to build an engaged and critical learning and teaching community at the LSE.

The first stage of implementing this strategy was to identify the environmental factors that slowed down or potentially resisted the scaling up and sustainability of pedagogical change through technology. Myths build up within institutions about the efficacy of technological interventions, designed in part, to resist engaging in processes that challenge current practice or require significant rethinking of the ways in which teaching and learning are enacted (Bryant et al., 2014). Instead of engaging in the more traditional consultation processes (listening exercises, working groups, committees etc.), we designed and implemented a civic engagement informed approach. Drawing on the principles of crowd learning, digital citizenship and social media practice, a series of innovative interventions were planned using a variety of different team methodologies, such as hacks, crowdsourcing, conversations, debates, provocations and media-making to involve and give ownership to staff, students and the LSE community in the programme of change. The first of these interventions was the LSE 2020 project, a School-wide multimedia conversation about the role of technology in how students learn, work and live.

ENGAGING STUDENTS IN MAKING EDUCATION BETTER

Pedagogical change needed to be led from the centre of the institution, engaging everyone in the need for change, with students as a critical part of that conversation. LSE 2020 is an innovative programme designed to be the catalyst for these conversations. The intention of LSE 2020 is to provide students the opportunity to engage in conversations and make connections with the institution, with each other and through recording and distributing these conversations on social media with people outside the institution. Filming conversations with nearly two hundred students, LSE 2020 focused on how students at the School use technology and social media for their learning, their career and across the ways they choose to live their lives. What emerged were authentic stories of how they study, how they engage with others in that process and what it means to be a modern student at the LSE. LSE
2020 identified how students engaged in collaborative practices such as Google Docs being used for collective lecture note-taking, professional and personal identity (the use of Facebook for group work and peer learning) and the de-location of study from the physical campus into social media apps like Snapchat and Instagram. The study also identified the critical importance of the systems and platforms we provided to students such as the Virtual Learning Environment and Lecture Recording. The distinction between these technologies and the ones they used to support their own learning could not be marked. In simple terms, students used the institutional systems to support achievement, obtain the grade they needed and to effectively complete the requirements of the course (Liote and Axe, 2016). The technologies and practices they engaged with outside of their formal learning activity (lectures, classes, readings, assessments, etc.) supported metacognition, network development and sociality. These technologies were out of the direct control of the institution and rarely embedded in curriculum and assessment. The most critical insight to come out of LSE 2020 was the realization that knowing how students study and engage in managing their own learning with technology is critical to realizing the strategic ambition of the School. It triggered analytical, pedagogical and change management processes designed to seed and scale innovation-rich interventions in teaching and learning. The rest of this chapter will look at these processes in detail through the lens of three case studies.

**CASE STUDY 1: STUDENTS AS PRODUCERS**

The aim of the Students as Producers (SAP) initiative was to transform the student experience from one that was primarily didactic to one that prepares the learner for the challenges of work and practice and engages them in their own learning, through making. Building on the findings of LSE 2020, we identified that the learning experience for students was a complex and agile process in the post-digital age. Communications, knowledge acquisition and sharing and assessment work were activities that were undertaken to deliver assessment requirements in time for deadlines. More importantly though, in the context of value judgements made by students concerning the time, attention, effort and focus required to pass at the level of achievement they were seeking, these activities often occurred outside the classroom, off campus and virtually. Bringing together the way students were being taught and the ways in which they managed their own learning was critical. Students were acquiring skills in communication, collaboration, problem solving and digital literacy through their learning activities. These skills enhance their capability to learn as students of their discipline through face-to-face teaching and assessment.

The SAP initiative was a series of interlinked projects which were all built on the principle that learning can be enhanced through making. Making is a fundamental learning practice that transgresses many disciplines from science and engineering through to creative arts and social science. Making is both a practical skill and a tactile experience. Making takes knowledge from the two-dimensional (hypothetical and theoretical) to the three-dimensional, adding in experience and a holistic sense. Making realizes vision and planning, incorporates creativity and makes knowledge real. Building a bridge on paper is very different to seeing the bridge as a model (either real or virtual).

The cornerstone project of SAP was a course in the International Relations Department called IR318: Visual International Politics, led by Professor William A. Callahan and Darren Moon. Previously assessed through an unsighted final examination, there was a misalignment between the pedagogical intentions of the course and its mode of assessment. In redesigning the course, the academics involved engaged in a process of pedagogical change, using technology to embed the change into
highly blended methods of delivery and to enable students to learn about visual social sciences through making (in this case, the technologies involved were digital film and the subsequent sharing of creative making practices with the wider community through social media). The redesign of the curriculum led to 50 per cent of the final assessment being undertaken through the making of a ten-minute collaborative documentary film by students about an aspect of visual international politics (Figure 2.1).

Participating in the learning engendered a sense of trust between the teacher and the student. It afforded students the opportunity to acquire and apply trans-disciplinary skills arising from making, sharing and critiquing the work of others. Counter to the relatively closed world of traditional assessment, the use of social media to share the final documentaries with the wider International Relations community meant that students became aware of their voice and identity as emerging social scientists. Their documentaries were shared outside the confines of their classroom and their teacher, opening up access to networks of other scholars, practitioners or the interested public. Knowing that their films were going to be shared also changed how they made them, how the narrative was structured and what visual messages were appropriate. It created a sense of experiential authenticity, replicating in a relatively safe space the learning that comes from the practical and real experience of making.

Another critical component of the success of IR318 was the capacity for students to construct their professional identity through making. This manifested itself in several different ways, from the skills the students were able to bring to prospective employers around knowledge transfer and visual representation, to the showing of their work as professional visual social scientists in the form of a gallery exhibition of their documentaries, which was open to the public. The films were demonstrable and shareable examples of their learning. They could be shared in job applications, with employers or as part of a professional portfolio.

![Image 2.1](image.png)

*Note: This film probes the cultural politics of the post-9/11 era.*

*Source: The film can be watched at [https://vimeo.com/165850479](https://vimeo.com/165850479).*

*Figure 2.1 Scene from an IR318 documentary called Beard Goggles, directed by LSE students Abinaya Dhivya Mohan, Alice Tayla and Eser Sarachoglou*
More widely, the SAP initiative used small grant funding and the support of a team of learning technologists to initiate student-led making projects across the majority of the departments in the School. Extending making from the context of media and storytelling, we supported projects that were co-created student-led research projects in learning analytics, designed approaches to games-based learning, and launched student-led journals of undergraduate research in government and media studies. Students as Producers remains a grassroots initiative, with many of these projects having been seeded from the success of earlier pilot projects.

The critical lesson we learnt from the initiative was that pedagogical change requires the active engagement of the programme/course team, working together to design an approach to blended learning that engages students to be part of the process. The voice of the teacher and the student were far from passive in the process. It was critical that academics owned these projects, participated in evaluating them and shared their experiences with colleagues and the sector. It was also critical that students actively engaged with the projects, fed into (and sometimes led) rigorous evaluations and reviews and were advocates for their experiences with other students. It was also critical in courses like IR318 that assessment was not the only pedagogical process that was enhanced. Embedding students as producers required the integration of different skills and literacies at a delivery level, from media making and collaboration through to critical thinking. These projects used a form of blended learning, that supported knowledge acquisition and application through the consumption and making of media, playing games, simulating practice, creating a public identity, sharing research and engaging in fun, creative and challenging learning activities.

CASE STUDY 2: LEARNING SPACES, BOTH PHYSICAL AND VIRTUAL

The requirements and uses of modern teaching and learning spaces are shaped by changing approaches to pedagogy and by the expectations of learners within the context of their study, social interaction and assessment needs (Brooks, 2011). The physical teaching spaces of the LSE are in the main traditional and struggle to cope with the challenges of active learning, the agile use of multimedia (both from the academics and the students) and the need for spaces to support an almost infinite variety of experiential learning conditions. The learning spaces available to students to study collectively or independently are in short supply, spread across the School in small pockets and sometimes located within departmental offices that are not accessible to every student. The LSE 2020 project identified that students undertake around 90 per cent of the learning outside of the classroom and the face-to-face teaching time allocated to courses. They use both physical spaces located inside the School (the library, cafes and interstitial spaces in corridors, stairwells and outside classrooms) and outside (home, local cafes and bars, other universities close by) to engage in online and blended learning. They also utilize virtual learning spaces, some provided by the institution (the Virtual Learning Environment for example) and others that are owned by themselves (social media, collaborative tools, mobile devices) to facilitate communications, reflexive dialogue, reflection, collaboration, creativity and community (McLoughlin and Lee, 2010). This presents a number of challenges for the School. The lack of collaborative space puts student pressure on courses wanting to move to group-based assessment. Where students use their own devices for learning, issues such as the lack of collaborative space have significant impact on student satisfaction and how students use and ‘live’ on the campus.

The aim of our learning spaces project is to develop an engaged, innovative and modern approach to supporting student learning inside and outside the classroom. Using a connected approach to the collaborative design of learning and teaching rooms, we bring together all the stakeholders in a
proactive reimagining of space as a precursor to the architectural and building planning. These events share teaching and learning practice and allow the participants to describe how space enables and inhibits the kinds of teaching and learning they want to do. It is critical to run the events in situ, so that the location, with its specific light, atmosphere and environment, shapes the design of the space. We usually, where possible, involve expert project managers, architects, furniture consultants and mechanical engineers in order to locate the discussion within the physical capabilities of the space.

One critical aspect of the learning spaces project is to support students engaging in different activities as part of the daily learning journey. Students described their optimum learning spaces as flexible (different ways in which they can use the space and move about in it), user friendly (natural lighting, bright colours, plants and natural decorations), flooded with power and data (ubiquitous, reliable Wi-Fi, media sharing capability, power) and productive (zoned for different types of work, available for use at the right time). A project to design space that just delivered on these student requirements would have produced an environment that was usable and adaptable by students to support their learning, but not necessarily innovative. The singular importance of pedagogical change, however, could not be ignored in this design process. The types of learning and the benefits that arise for the students from working with each other to understand and engage with critical discourses and disciplinary tensions are driven by how the pedagogical approach is set out in the curriculum.

One project that drew on these insights was the Clement House Rotunda project. Taking an underutilized stairwell that had become a dump for old, broken furniture across six floors, we piloted our process for embedding pedagogical change in the design of learning spaces (Figure 2.2). The result was six innovative learning spaces that drew on insights from students about what they wanted from learning spaces as well as integrating in unique ways the modes of study and learning critical to International Relations and more widely to students studying social sciences.

Source: Photograph courtesy of Learning Technology and Innovation, London School of Economics and Political Science, UK.

Figure 2.2A and 2.2B Clement House stairwell at the LSE prior to refurbishment (Top) and Clement House Rotunda learning spaces – café floor (Bottom)
Supporting learning modes such as collaboration, creativity, community, connectivity, and conversation, these spaces used agile and lean technologies, inviting architectural design, warm lighting and bold colours to create spaces that the students felt they owned. Innovative teaching and learning approaches, such as those mentioned in the first case study on media making, were supported through collaboration desks and software that supported making. Finally, one of the learning experiences we wanted to pilot in these spaces was immersive learning. Immersion stimulates the creative aspects of cognition, creating highly social sites of learning (Johnson and Levine, 2008). In a building with few windows, we wanted each space in the Rotunda to reflect the political world that International Relations scholars will inhabit. Naming each space after a global city, with pictures and colours to further reflect that city reminded the students of the global impact of their studies. The final touch was the creation of two transit zones between the classrooms and the Rotunda where short films are shown for students waiting to go into class, ranging from student-made documentaries to a custom-made animation that explores the role of LSE in shaping global politics. The impact of these fleeting exposures to images of London, its people and the reach of the study of social sciences cannot be underestimated. They create an environment that changes the way the space is seen. It is no longer a building, a broken stairwell, a corridor or a classroom. These spaces have character; they are active and they encourage their use for learning aligned with and supporting the ambitions of pedagogical change.

Critical to the process is a post-occupancy evaluation of redesigned spaces. For the Clement House Rotunda project, we used a mixture of participant observation and cognitive mapping to ascertain how the spaces were used for learning (Wilson et al., 2017). Some of the key findings from this research included the following:

- Based on qualitative feedback, students liked: the convenience for attending lectures and seminars; times when there are fewer people and lower noise levels; access to plug sockets; the innovative and modern design; the informal, comfortable and cozy ambience; and the variety of furniture;
- Students used multiple devices and resources during a single visit and nearly half of those observed consumed food or drink while in the spaces;
- Occupancy of these previously disused spaces was fairly high with at least one floor being occupied during 93 per cent of observations while during 63 per cent of observations at least one person was on each floor;
- Thirty-three per cent of respondents used the spaces for study even though they were not waiting or between classes;
- The majority of students used the spaces for individual rather than group study while appreciating the potential of the spaces for group work.

CASE STUDY 3: CROWDSOURCING LEARNING

In 2015, the LSE launched a cutting-edge civic engagement and open education project with the intention of leveraging and magnifying the power of the community and the ‘massive’ in an accessible, free programme. It enabled learners to engage in debate, co-produce content and come to a common agreement about the need for and the content of a UK Constitution. Constitution UK involved over
1500 community members and groups, who debated the relative merits of competing clauses and then refined them to a manageable number. The end result was a community produced 8000-word constitution generated from over a million words of debate. The project used a social media platform (Crowdicity) to support effective community-led ideation and learning. It also drew on other social media platforms to recruit community members (blogs, Facebook and Twitter) and to summarize the large scope of the debates for new entrants (Storify). The Constitution UK project was designed to facilitate a democratic approach to participation and learning, where knowledge was not broadcast from a sage on the stage but emerged from a community participating in open debate, ideating and solving problems collectively and democratically.

The design model drew tacitly on the application of a number of conceptual pedagogical and engagement frameworks such as peer learning (McLoughlin and Lee, 2007, 2010), incidental learning (Marsick and Watkins, 2001), digital pedagogies (McLoughlin and Lee, 2007, Siemens, 2005), crowd learning and ideation (Wexler, 2011) and the use and acquisition of crowd knowledge and crowd value for specific problems (Erickson et al., 2012). As with our other projects, a design thinking approach (Meinel and Leifer, 2010) was used to help structure the activities, the learning pathway through the project and higher-level trans-disciplinary skills that would be needed to deliver on the project’s ambitions. We drew on participatory practices such as online civic engagement (Mossberger et al., 2007), crowd wisdom and collective intelligence (Levy, 2015) and digital citizenship (Ohler, 2010). This was not a traditional educational project, with learning outcomes and an aligned pathway towards mastery or expertise. Instead, we positioned learning as something that was incidental, tacit and exploratory. In this context learning might happen spontaneously and arise out of social structures, experiences or interactions (Johnson, 1999, Knowles, 1970, Marsick and Volpe, 1999).

Constitution UK had no specified readings and no lectures. There was no explicit dissemination of established theory. There was just a series of challenges for the community members and a semi-gamified process of engagement where points were allocated for different forms of participation (ideas, voting, commenting). The project was informed by the assumption that learning can occur in informal spaces, supported by both peer and academic engagement, but not privileged by either, effectively flipping the role of the academic and academy. There was no defined entry point for the project, members were able to start as soon as they had registered and to jump straight in to being part of the community.

The size of the community grew over the duration of the project, with new members still joining in the final week. The project facilitated the creation of publicly visible educational situations within an emerging and often agile democratic dialogue (Andersson and Olson, 2014, Linders, 2012). These situations emerged at non-sequential points within the project, as new users entered, old users came back to the group and the community embraced and rejected opinion and thought leaders that arose from within the community itself. These capabilities supported the capacity of the crowd to be more than a collective of individuals, but a learning community. It demonstrated how learning collectively was not a passive process, facilitated by the one to many communications of the lecture. Learning collectively was a process of learning within the community, from the community and outside the community. It was these lessons that were the most transferable to other educational contexts such as more traditional face-to-face programmes, online provision and executive education.

This project actively involved staff and students along with an extended, diverse and engaged network of participants. It challenged traditional ways of teaching online, eschewing the tropes of the ‘course in a box’ model (videos and readings, weekly progression, task orientation, iterative measures of success/feedback). The intention of this project was to develop a more engaged pedagogy, where learning emerged through the experience of making, engaging, debating, defending, leading and
refining within the context of a crowd of engaged citizens. This was the engaged and critical teaching and learning community we aimed to create as part of our strategic plan. This approach was not without its risks, especially in the febrile social media world of fake news, Brexit and political polarization. One of the challenges in opening education up to a wider community is how to embrace diversity of views in a positive and productive way. Through a combination of pedagogical and technological design and the shared commonality of wanting a solution to a problem, this project experienced an almost overwhelming sense of positivity and engagement.

The model also challenged the established role of the teacher in providing the expert knowledge and ratification of learning. The lead academic for the project (Professor Conor Gearty) conducted Twitter conversations, interjected into debates as a discussant and addressed contributions in a weekly thought piece. He took the project on the road to Town Hall style meetings to engage with the people directly and helped create a fertile and positive learning environment for all involved. Professor Gearty described his role and the importance of the project:

> We are enormously proud of it, though we claim credit only as midwives to the efforts of others rather than writers in our own right. For what you see here is truly the work of a ‘crowd’... who availed of the chance we gave them to knuckle down as constitutional players... and suggest, argue for, persuade and promote any parts of the country’s new proposed constitutional order... The thousands who participated took what was not only an open book but a blank one too and over two exciting years they filled it with what mattered to them. (Cooper, 2016: 455)

Constitution UK was a critical intervention in how the School thinks about students working together, both inside the School and more widely in our community, our alumni and the society we are a part of. The realization that group work is more than simply throwing students together around a table or multiplying the length of an essay by a factor of five is making courses leaders look more deeply at how their teaching and learning is structured. It is generating interesting experiments in flipping lectures and classroom activities, with courses using the capacity of the crowd to debate substantive social science conundrums, work collectively with students across the world on issues of poverty and negotiate delicate political agreements through the mass playing of a board game.

**TOP DOWN? BOTTOM UP? MIDDLE OUT**

Many pedagogical change programmes in higher education use either a bottom-up or top-down approach to implementing pedagogical change. Bottom-up change is where small funded projects go from ideation to pilot phase and generate momentum for change from the success of these initial pilots. Bottom-up change is a model that assumes a tipping point where enough projects involving a range of staff shift the entire momentum of the organization towards the change. Top-down change is where the institutional leadership, through policy, strategy and reward and recognition, lead change from the front, aligned to the strategic intentions of the university. Both bottom up and top down often fail to deliver sustainable and scalable pedagogical change. They can struggle to embed the personal and institutional commitment required to bring change about for the majority of the organization. They are subject to the capacity of the enthusiastic thought leaders and innovators or the inconsistencies arising from the complex pressures and expectations placed on university leadership. The challenge is to design your own unique approach to developing a culture of acceptance, engagement with change and the how you challenge the behaviours of resistance. We developed an approach to pedagogical change we called Middle Out. This approach is underpinned
by the belief that successful change is embedded and owned when the projects seeding change are successfully scaled and sustained. Middle Out targets the limited resources available for change at projects that offer scale, connection and/or stimulus. Projects informed by the Middle Out approach create momentum within the institution to motivate the majority of staff to participate in change. Studies on technological innovation dating all the way back to Rogers (2010) in the 1960s note that engagement with innovation in an organization is distributed along a bell curve, with participants in change, ranging from innovators to laggards. Middle Out focuses on the point where the majority of stakeholders reside, namely the middle of this bell curve. These people do not actively resist change but they are not generally the first to take risks. Our strategic approach is to work with projects and people that afford the greatest possibility of encouraging, supporting, inspiring and leading the people in the middle of the bell curve towards and through pedagogical change. These projects are designed with the organizational mission clearly in mind and with the twin capacities of scalability (can the project lead to innovations in different disciplines or wider contexts?) and sustainability (will the project continue to be implemented and developed once the funding and/or support ends?). Middle Out projects can take three different forms: scaling projects that have institutional impact; connecting approaches that cross function, discipline and faculty; and stimulating change through high profile, highly visible interventions.

Scaling Projects That Have Institutional Impact

Scale represents an opportunity to test initiatives and effect fundamental shifts of practice within an environment where pedagogical change is critical: large cohorts; full programmes; first-year courses; and major policy areas such as assessment or curriculum redesign. Scale means having enough resources, staff and support to engage in change at a substantial size and scope. Scale gives you enough variation and dilution to see if the change or strategy actually works, evaluate it effectively and make the case that if it works at scale, then it will work in smaller instances and at a local level.

At the LSE, one of key projects that draws on this form of Middle Out change is to extend gaming and play as pedagogical change into the study of social science by running a games-based learning project in the School’s common core undergraduate general course called LSE100. The game itself was designed by early career teaching staff, learning technologists, academic leads and enhanced by play tests with students and staff. The first pilot in 2017 saw over 1100 students, 32 teachers play a game closely integrated into the learning outcomes of the course. One hundred and thirty-seven separate sessions of the game were run in one week, with over 3200 students planned to play the game in 2018.

Connecting Approaches that Cross Function, Discipline and Faculty

Initiating change through connection builds on the strengths of disciplines and knowledge and shares those strengths in trans-disciplinary ways. Middle Out works by building networks of practice, virtual and physical within institutions. It supports the sharing of expertise through cross-functional projects, whole-of-team interventions and impactful dissemination of practice. Connection draws together teams from cognate and tangential disciplines to approach change from a multidisciplinary perspective. Connection encourages these teams to take their success and knowledge back to their disciplines and cascade change from within. In other instances, it is a simply a community of practice sharing common experiences from engaging in change across disciplines.
One of the most important outcomes of the SAP initiative was to form a community of practice for academics and staff interested in visual social sciences. Community members have developed training programmes in documentary filmmaking and narrative storytelling, supported five new projects to start using documentary films as a form of assessment or learning and have run their first international conference on visual social sciences in 2016. The members of this group work together to enhance their pedagogical approaches, share practice, encourage others to experiment and build skills and capabilities amongst the wider academic community.

**Stimulating Change Through High Profile, Highly Visible Interventions**

Pedagogical change can accelerate through the effervescent effect of a successful and impactful catalyst project. These projects are not always the biggest, the most visible or undertaken by the most senior staff. These projects attract attention through their audacity, the innovation, their success or the persuasive power of the project team and leader. Stimulus is a powerful motivator for change as it empowers people to take risks in terms of teaching and learning. These projects generate not just inspiring exemplars but engender a real sense that this kind of change is achievable.

Potentially stimulating change is happening all across the LSE, with some of it happening under the radar. LSE Innovators is our way of recognizing and sharing these projects with the wider School community. These cases are focused on the academics, their philosophy for teaching, how that inspires their pedagogical approach and what others could learn from them. We make short profiles of these staff to share online that celebrate their work, their passions, their techniques and their reflections, which are widely shared inside and outside the School. A significant number of change projects that we are running have been seeded through other academics being inspired by these cases (http://lti.lse.ac.uk/lse-innovators/).

**CONCLUSION**

The transition from traditional face-to-face modes of teaching and learning to media-rich, student-centred and pedagogically innovative practices is by no way complete at the LSE. The seismic but ultimately underwhelming impacts of Massive Open Online Courses demonstrated clearly that institutions can move quickly to engage in pedagogical change with technology (Kumar et al., 2017; Soylev, 2017, Allione and Stein, 2016).

The LSE decided to not be a part of the scramble to attract thousands of students to drop-out of their open education offerings. Instead we took a different approach to online learning. We stepped back and interrogated what it meant to do an LSE education in the post-digital age. We set out a vision for our future that we are still delivering today. That vision runs parallel and sometimes contrary to other strategic directions and objectives within the School. In a complex, multi-disciplinary, research intensive environment this is not a bad thing. It creates tensions, debates and competition for resources. But these tensions make the change and the education it is focusing on better. It interrogates change to a degree that blind zealotry does not. It forces change to be informed by people, by research and by commitment.

The Middle Out approach we have taken represents a pace of pedagogical change that affords the opportunity to allow that change to become part of the fabric of the organization. It connects with the governance and regulatory environments to ensure that online and blended pedagogy is not seen as something that is outside the norm. Middle Out advocates for change that ripples out from the centre,
facilitating innovation and technology to make contextualized pedagogical change across the spread of programmes, undergraduate and postgraduate cohorts, local and international provision.

Both the strategic approach and the initiatives mentioned in this chapter are very much works in progress. One of the advantages of a model like Middle Out is that growth is organic and sustainable as opposed to rapid and sometimes out of control. We continue to see real growth in projects that support diversified modes of assessment. Programmes and courses are increasingly seeing the benefits of blended and online learning to support and structure how learning is undertaken outside the classroom. The approach the LSE is taking in terms of teaching, learning and technology is very much considered and contemplative, but always moving forward, engaging both the excited and innovative thinkers and the less risk-taking majority. The critical factor for us is the assertion that we want to make education better for our students. That outcome can be achieved in many different ways and the activities I have described here are just a few of them. The political, social, technological and economic environment that these projects reside in is complex, forceful, unrelenting and often out of our control. It influences the literacies and skills that learners bring into their education. It dictates the knowledge that jobs require of graduates. It shapes how our disciplines are evolving. It defines success or failure for our institutions. Online learning and pedagogical change are critical instruments for teachers, for programme leaders and for the wider institution to respond to this environment in an agile and informed way. They provide both a sense of responsiveness and the capacity to widen the educational base of the institution, defying competition and leading from the front. They can be unique selling points for institutions; ones that define both their relevance to society and in turn shape society through the integration of successful students into it.
REFERENCES


Chapter 3 - Translearning: unfolding educational institutions to scaffold lifelong networked learning

Ismael Peña-López

INTRODUCTION: TOOLS AND THEIR TRANSFORMING ROLE

When we speak about which tools to use in online learning it is easy to end up using the tool just because it is there and can be used or everybody is using it. Although we tell ourselves that tools are simply a means to an end – in this case, learning – what happens time and time again is that we use tools as aims themselves.

This even happens in cases in which we give ourselves categories, genuine ontologies, to assign each tool to a drawer that we will reach for only when we clearly understand its instrumental role. If we want to foster the transition from traditional learning to an enhanced model where ICTs have their role, ICTs should not be the driver of change, but the reasons for that change should.

In this chapter we will centre our reflections on the limitations of traditional learning and how technology can be handy in overcoming them. We will focus on how to make a smooth journey to enabling network learning, to scaffolding lifelong learning, to use educational technology to empower sovereign learners. We will do it by disassembling, dissecting and cracking open the institutions that, until now, have continued to lead both teaching (successfully, to be sure) as well as the learning taking place within these institutions.

We want to therefore put into focus not only the tools but also the educational institutions that are experiencing disruption, which is in part derived from certain strategies and tools. In analysing the shake-ups taking place, the present chapter will look at ten selected educational institutions (understood in the broadest sense) to see how certain strategies and tools are playing out.

Our analysis – and the array of tools of our choice – will be based at all times on four crucial points on which we think that this shake-up, the transformation of institutions, is particularly relevant.

Efficacy and Efficiency

Information and communication technologies (ICTs), as the name indicates, are specifically applied in knowledge-intensive settings – in other words, where learning takes place. In these settings, they have an impact on efficacy (reaching the greatest number of objectives) and efficiency (obtaining objectives with a lesser amount of resources). In the following sections we will systematically state that a fundamental reason for using ICTs – along with transforming educational institutions – is to reach more learning objectives using a smaller investment of resources. At the same time, not using ICTs,
while not a bad thing in itself, makes us inefficient and ineffective. And despite the fact that we continue to do things well, the world has moved along, leaving us out of step (Figure 3.1).

![Diagram showing changes in efficiency and efficacy produced by the emergence of ICTs](image)

*Source: Author.*

**Figure 3.1** Changes in efficiency and efficacy produced by the emergence of ICTs

*The Online Connection and the Capacity to Self-Programme*

Castells (2000, 2004) described new drivers of exclusion and inequality in the Knowledge Society. Being connected (not to the Internet, but to a knowledge network), in addition to being able to adapt to one’s surroundings (through learning and applying new knowledge), makes us valuable points of interchange, otherwise we become totally irrelevant Figure 3.2.

People or institutions that only learn once in a lifetime and are unable to reshape their skills are labelled as generic; on the contrary, being able to learn to learn, to adapt to the continuous changes of the environment, makes people or institutions self-programmable. When crossing these attitudes to belonging to one’s social network we find four types of stages that can lead to social inclusion and equality or, on the contrary, to exclusion and inequality. Generic people/institutions that are not connected to their social tissue become ‘irrelevant to the system’ as they will not get jobs, they will be social outcasts: some low-education immigrants or homeless people belong to this category. Executors include all people and institutions that do repetitive tasks and that are very likely to be replaced by automation or just disappear. Many of the issues that the ‘collaborative economy’ is bringing today are directly affecting this segment, from music and book outlets to (quasi-)monopolies like energy distribution, innovation departments, taxis, or touristic housing. Pioneers that act on their
own (self-programmable but socially disconnected) are at an unstable position: either they connect to their peers to add value to society with their renewed skills and knowledge or they are very likely to cease learning (self-programming) and become structurally irrelevant to the system. This is the choice of many start-ups or visionary geniuses: join forces with others or perish. In education, this can be transposed to what type of citizenry do we form a part of? Or, better still, what type of educational institutions do we have in place? Do they add value or are they irrelevant? The application of ICTs based on whether they turn an institution into an online institution capable of relearning will be an important point to discuss.

![Figure 3.2 Drivers of exclusion and inequality in a knowledge society](source: Author, based on Castells (2000, 2004)).

**The Progressive End of the Clear Definitions of Formal, Informal and Non-Formal Spaces of Yesteryear has Begun**

If we could accept the impact of ICTs on educational settings it would, without a doubt, welcome an endless number of opportunities and spaces for informal learning (for example, what happens at the workplace, at libraries, at youth civic associations). Furthermore, as these new spaces continue to hybridize with those of the formal education system, these same definitions, the formal, non-formal and informal, become less valid. We will also therefore centre the analysis of strategies and tools on this hybridization, which is the cause and consequence of educative institutions' increasing transformation Figure 3.3.
Defined as self-determined learning (Hase and Kenyon, 2000; Blaschke, 2012), aims to go beyond andragogy, conceived as self-directed learning, and places great emphasis on learning throughout the life based on learning to learn. Certainly, if one adheres to these last two catchphrases, institutions should develop these capacities in the educational setting so that students may be self-reliant when these educational institutions are not available to help. Again, in this context, ICTs as well as ‘learning and knowledge technologies’ (Vivancos, 2008) take on a highly transformative role that goes far beyond mere instrumental use.

**Unfolding Educational Institutions**

So, this is our categorization, our ontology to present, analyse and evaluate the resources available to us to learn online. We will see that these resources are quite varied. They include not only the inevitable ICTs, but also all resources these ICTs allow us to access. In the following sections we will examine, dissect and question several educative institutions: schools; classrooms; textbooks; libraries; syllabi; schedules; teachers; evaluations; certifications; and curricula. In doing so, we will define the resources – whether technological, human, organizational or other – that allow to us do that which we have called *networked learning*.

**The School**

The educational system has as its focal point learning centres: schools, high-schools, universities and so on. The main characteristic of these centres, with the exception of some, is a double dependence in terms of space and time. That is to say, one must be physically present at the centre and one must be there at a specific scheduled moment. Undoubtedly, the first condition of networked learning is to
be part of a network. To this end, it necessary to break down the barriers that physicality implies, the two most fundamental being space and time.

Virtual campuses and their variants, among them virtual learning environments (VLEs) and learning management systems (LMS), allow us to step beyond educational centres, not to break away from them, but rather to open them to the outside in terms of both space (accessing resources from anywhere) and time (access resources at all hours). Baumgartner (2004, 2005) and Peña-López (2007) describe different tools to better adapt technology to the necessities and methods of learning. Thus, we see a range from the eminently institutional LMS to other tools of the so-called Web 2.0, which may carry out the same functions of overcoming space and time. Such tools include blogs and wiki platforms.

Blended learning, or partially on-site learning, has traditionally been viewed as a methodology supported by virtual settings to enhance face-to-face learning. Certainly, this is still very much in practice and can perfectly continue to be practiced in this way. However, we invite the reader to reflect on something that without a doubt will impact far beyond the use of virtual spaces as a bolster for physical presence. Thanks to virtual campuses and their like, it is possible to leave behind the restrictions that come with being physically present

- Opening up space and
- Opening up time.

In addition to providing unprecedented opportunities to students who live far from educational centres, online learning also includes a range of opportunities for the centres themselves, just like Liz Marr from the Open University explains in her chapter (Chapter 1) on how to move from distance education to online learning. In addition to opportunities that are internal (a-synchronous and ubiquitous relationships among students, teachers and the centre; total accessibility to learning resources; self-management; horizontal communication, etc.), limitless opportunities are created externally: when there is no longer a need for simultaneity in terms of time and space – the main impediments to coordination – many more actors and resources can be involved in what therefore becomes an open educational centre or a centre of open learning.

**The Classroom**

Although many physical barriers can be broken, the obstacles that are most difficult to overcome are conceptual. Such obstacles arise when we build concepts such as cohort, group or class. These groupings, as artificial as they are useful, are helpful when certain or all resources are limited. The limitation of space necessarily limits who can belong to the group and who cannot. The same occurs with time as well as many other material resources that, being finite or scarce, are difficult to obtain if not expensive in terms of other resources.

When referring to the educational centre, school or university above we targeted the restrictions of time and space. The virtualization of the educational centre as well as some of its resources that we now upload in digital format to online platforms does not only remove restrictions, but also the necessity of restricting access to spaces and resources. When faced with this unlimited access to resources does it still make sense to form groups like those created to organize students or trainees into classes or rooms?
These groups most likely continue to make sense (for example, large amounts of students make marking assignments difficult to handle), although we should probably consider their permeability. We have tools that allow us to maintain some cohesion or group identity while at the same time remaining open to wider communities (Levine et al., 2012). As it will be seen, we can set up specific ways (for example, tags or hashtags) that can easily be shared while providing a way to identify the community that promoted them. An open and direct participation of an online facilitator also contributes to this sense of community even in the open arena of social networking sites.

Microblogging tools – Twitter, for example – have a great number of educational functions (de Haro, 2011), including, notably, the possibility to open informal learning spaces and spaces centred on processes (Ebner et al., 2010; Peña-López and Cerrillo i Martínez, 2012). Furthermore, what is very interesting is that they bring out conversations started in the classroom and maintain them externally. Although such an exercise may seem at first to be bordering on frivolity (for example, an academic conversation translated into brief exchanges of 140 characters outside a formal setting), an especially interesting thing happens, in fact, when the formal setting is renounced: on exiting the classroom, the doors are opened to new actors and, along with them, new learning resources. Thus, when students begin to tweet openly about a given subject, the classroom goes from being a closed space, with a strictly academic approach and tone, to an open space with a great number of registers and the aggregation of wholly shared resources, including the concurrence of third parties and their personal networks into the conversation.

The same occurs with another tool that is worth exploring: the xMOOC, as opposed to the cMOOC (Stacey, 2014), which we will look at later (for a differentiation see Yousef et al., 2014). For the purposes of this section, which is to review and consider the validity of the classroom as a learning space that is ‘protected’ from the outside, both xMOOCs and microblogs allow us to do the following:

● Promote the creation of community in a simple, almost tacit form, with the presence of various profiles that are potentially different from those that make up the outside community. That is: the goal of an xMOOC is not explicitly creating a community. But the daily practices and contributions (interpersonal and group communications, sharing of resources, etc.) end up creating ties between the participants that can be assimilated to a real and explicit community.

● Enable proactivity, taking into account the absolutely level playing field of the new spaces that both microblogging and xMOOC create outside the hierarchy of the classroom. In other words, on an xMOOC and in a gift economy in general, ‘you are what you contribute with’. Participation is highly encouraged as a means to keep up with the pace of the courses and, indeed, as a learning methodology, highly based in constructivism and connectivism.

● Allow the entry of information from ‘the outside’ through new actors or even through autonomy granted to students when hierarchy is reduced or removed.

● Allow information from ‘the inside’ to go out, in other words, allow creation that happens in the classroom to be accessible to third parties who may distribute it, comment on it, evaluate it and thus contribute to the improvement of learning.

● Blur barriers with informal learning, which can be especially important when combined with the creation of a community of learning or practice.

The Textbook
Let us stop for a moment at the point or points in which we spoke of new information, that information from ‘the inside’ is let out and, above all, information from ‘the outside’ is let in. Conceived at different stages (D’Antoni, 2008; D’Antoni and Savage, 2009), open educational resources (OERs) are defined by UNESCO\(^1\) as ‘any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation’.

Generally, one tends to think of OERs as educational resources (formal or somewhat formal in form, although it may seem redundant) that have been made available freely to the public. In this sense, Alvin Birdi’s experience at the University of Bristol (Chapter 6) is a great and wonderful example. However, it is also interesting to consider resources that were originally not aimed at education (or teaching or research) but are ultimately being used for these aims either tacitly or quite explicitly and deliberately. The case of Wikipedia is without a doubt the most paradigmatic, but in fact there are numerous examples.

This does not make any material an educational resource. Or does it? It is not the material, but the use that it provides – with specific aims, within a learning path – that grants it the virtue of being ‘educational’. It is the great malleability of any resource what brings into question the hegemonic role of the textbook.

Although this role could have been questioned years ago – the list of educational resources is as extensive as can be, ranging from museums to educational farms, not to mention a thousand examples of oral tradition from first-person witnesses of historical events – it is the digitization of content and its transmission, also by digital means, that implies a leap forward in terms of relevance. The immediate availability of an enormous amount of resources that can be used as the key of education or learning, most often without cost, and are reusable and ubiquitous is what now directly questions not only the necessity but also the mere convenience of adhering to a sole object – the textbook – as a reference. It is, in addition to being expensive, static in the mid-term and low-ranging in terms of voice.

On the other hand, we want to call attention to a crucial factor related not only to the question of the dynamism of contents but also its voice: the fact that OERs can be created – not only (re)used. This apparent truism holds a great truth: not OERs, but the creation itself of OERs is without a doubt the great value behind these resources. In this sense, tools such as wiki platforms or online collaborative documents are extraordinary forms of learning (Pifarré et al., 2010; Huang and Nakazawa, 2010) that are, however, automatically annulled by the appearance of the textbook. The experiences at LSE showcased in Peter Bryant’s chapter (Chapter 2) are in this same train of thought.

Working with OERs as well as wiki-type tools and collaborative work allow the following:

- They promote the update of content, especially in areas or disciplines that change rapidly. Let us think, for example, of the re-categorization of Pluto as a minor planet or the advances in particle physics so close to demonstrating the existence of the Higgs boson.

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● They boost creativity through the creation of learning resources. At present, we hardly need to mention the consensus on the importance of the synthesis, abstraction and presentation skills necessary to explain what has been learned.

● The permeability, wide availability and low cost of OERs provide fundamental support to collaborative work, which is understood to be the sharing of necessary resources to meet objectives, whether collectively or individually. It usually does not happen in the case of textbooks, where the material is identical for all. OERs, on the other hand, sooner or later will be more plural due to the different learning strategies of each individual.

● Moving beyond collaborative work may occur when one adds the replicability and traceability of the changes, among other aspects, of OERs. If they are used with tools such as wiki platforms or online documents, these excellent resources will deepen competencies, including teamwork: there is nothing better than the development of new content, non-existent as it is, through teamwork to strengthen any number of competencies that, again, the textbook removes through its very construction.

The Library

We tend to think about the library as a well. Like a well we go to for water – or, in the case of the library, information – because we know that it is stored there. The well, or the library, is in a certain place and has someone in charge to maintain the volumes and carry out filtering to guarantee quality. Ultimately, the library has two advantages that are extremely useful: the very existence of a deposit of knowledge and the criteria to create and to maintain this deposit.

The reasons for the creation and care of a library are closely linked to the difficulty of separating the content from the container, a redundancy that is hardly trivial. Indeed, it is difficult to tell whether a library is storing works or just big piles of paper: content and container cannot be torn apart. When books are finite and expensive to produce, gathering them together at a single place is effective and efficient. It is also effective and efficient to place someone physically in this place to take care of the library.

The Internet has ended up with both limitations: now it is not necessary to accumulate paper, nor must someone be physically close to that paper to peer into the works penned in it. On the contrary, digital libraries are now the order of the day and their management is increasingly more common and decentralized. Other libraries are, however, possible. For centuries the great libraries have tracked small private libraries to prevent their contents from being lost or broken up, so that that they could be accessible to everyone. Bibliographic managers – software for the management of library resources, designed for this purpose or adapted by users to perform this function – allow small bibliographic inventories to be converted into a myriad of small individual libraries that become accessible from any place, at any hour, by whomever wishes to use them.

But this does not only include the so-called bibliographic managers. Today, practically any repository of content may serve as a multimedia library in a certain field, specialization, discipline, subject, person, organization and so forth. These repositories, particularly those which store materials that are ‘hardly finished’, such as presentations (Peña-López and Cerrillo i Martínez, 2011), allow for sharing and socializing what before had been a thoroughly private exchange only, thus creating a collection that is generated ad hoc, decentralized and distributed based on the output of all who contribute, in addition to the users.
Tools for the sharing of presentations/slides (and small documents in general, like infographics) are very useful for the following:

- They improve the capacity of synthesis, bearing in mind the effort required to condense into a few words and images that which in other formats would require us to provide long explanations.
- They foster the capacity of analysis in the reader, who must complete the converse exercise of the author: reveal and expand the condensed ideas, relate to them and look for examples of them.
- They improve the quality of a work by exposing it to that which it is based on once published as a free resource.
- They establish open debates between authors and readers, which can take place on the platforms where materials are found, or these materials may be transferred (for example, embedded) to other platforms where a community already meets.

*The Syllabus*

While knowledge is dynamic, a library remains fixed in time. Even in the case of collections that are under construction, often they are conceived as something we set out to do at one particular moment and will stop updating in the future. Syllabi are the tip of the iceberg that makes up the library. Another idea fixed in time, the objective of syllabi is to release a fistful of concepts or ideas from a more extensive collection. Like libraries, a syllabus is conceived as static and if linked with an evaluation test or certification, even more so, to the point of being unchangeable. Again, the reasons for this lack of dynamism are found in the difficulty of updating content: in a world of paper, updating implies access to new editions, with higher costs; in a world of face-to-face interaction, updating means contacting and attracting more specialists and, again, increased costs.

It is worth stopping for a moment to emphasize the difference between the syllabus and the textbook – although, with time, we have started to confuse one with the other. A syllabus entails what we are going to cover in our itinerary of learning, whereas the textbook is limited to being a way of covering it. But a syllabus is static only because of convenience, based on restricted resources, time and space. What becomes of the things left out of the syllabus? Where are the adjacent concepts? The nuances? What becomes of the context?

Tools such as social bookmarking, microblogs and online collaborative documents allow for the participation of other actors – something that happened to some degree with different approaches to the textbook – and these actors bring with them other sources (Junco et al., 2010; Junco et al., 2012) that not only complement how we follow an educational itinerary, but also come to alter it, complete it, clarify it, extend it and narrow it down in relation to other limits of knowledge. What’s more, they allow this participation of actors and knowledge to cross with other types of temporary organization that differ from the strict sequencing of pre-programmed learning involved in a closed syllabus.

It is important to point out, as we did when discussing the classroom, that what is interesting is not the tool itself, but what it brings into play. In other words, what one might imagine to be a disruption of the syllabus is not the use that an educational facilitator makes of, for example, the social bookmarks, but rather it is the use of it that leads to making whole of what is to be learned together. This is because in the participation of several actors updating content in a commonly accessible place – not a common space – it allows for the following:
● Having an active role in the management of information and in the total subversion to a third party determining the syllabus and relegating an absolutely passive role in the management of this information to the facilitator and the learner.

● Fostering a feeling of closeness or presence among the community of learners. This sense of proximity is especially valuable in virtual communities, but also those in which, being face-to-face, a good part of the work takes place outside the educational centre. Thus, a connected community, bringing resources to each other, contributes to creating supportive environments that can be confused, advantageously, with the closeness or presence of face-to-face situations.

● Developing immediacy and the state of the art and making it possible to adapt or add to the repertory that which happens in our geographic and temporal surroundings with minimum cost and effort.

● Capitalizing on the mobility of the learner and promoting ubiquitous learning, which allows one to participate wherever one is, whenever one wishes, affecting not only formal and instrumental aspects of learning, but also the determination of objectives and the educational itinerary itself.

**The Schedule**

If we are able to surpass the constrictions of centres, classrooms, libraries, textbooks and syllabi, it should be equally easy to surpass the limitations imposed by the factor of time. We have already referred to this matter when discussing the school – or the educational centres in general – in terms of how digital tools and online learning allow us to free ourselves of physical limitations.

Virtual forums are, without a doubt, the first tool that comes to the mind. They are the direct descendants of newsgroups or Usenet groups and bulletin board systems (BBS), which have allowed asynchronous access to information for decades. Learning resources are another example, incorporating not only a way to share but also a way to discuss information. However, there are at least two other ways of subverting the usual dynamics of learning by removing the boundaries imposed by time.

The first is the flipped classroom, also the inverted lecture. As its name indicates, it consists of turning the teacher-led class upside down: the transfer of the basic content (the lecture) happens at home thanks to OERs (mainly open-source videos, in addition to others), while the resolution of assignments (with the associated activities) takes place in the classroom. Thus, the teacher is present when he is needed most, dealing with questions when the theory is applied instead of during the presentation, when questions rarely arise. Although it undoubtedly involves subversion – in the sense that roles are exchanged and tasks turned upside down – this option continues to maintain structure and scheduling, the two main characteristics of formal education.

On the other hand, tools such as microblogging as well as other reporting tools that allow the recovery, collection and creation of reports with parts that are extracted from social networking platforms allow not only the bypass of time, but something much more important: they make it irrelevant. These tools are built on two basic aspects:

● First, they move the workload of learning from content to competencies. They do this by obligating the learner to not only actively manage his or her information, but also to manage his or her educational network, which helps to make the learner become aware that learning can happen at the
most unexpected moments. Therefore, it is necessary to have the network – and the tools – ready for it.

- Second, they generate a bridge between formal education and non-formal and informal education. Without a doubt, this is a qualitative change: recognizing that education can move between different platforms and registers and that online educational tools help us to weave a fabric that does not distinguish between formalities or depths, but instead manages simultaneously both the parts and the whole.

The Teacher

In our spirit of inquisitiveness toward the educative institutions, always in order to transcend, unfold, extend and complement, we have crossed space, time and material structures. Often all of these aspects converge in the instructor or teacher who, like an orchestra conductor, marks time and emphasis, leading the way to certain areas and ultimately recomposing what before had been separate pieces or lines.

In the previous sections we introduce the question of whether to allow new actors to participate in the educational itinerary. Tools such as virtual learning spaces, microblogging, MOOCs of all types and so on invite actors who may participate in the institutional – and institutionalized – role of educator that we pre-assign to someone. The inclusion of new actors, as the openness of the actual actors is not without tensions, as Bonnie Stewart explains in her chapter (Chapter 7). However, we may even go a few steps further and allow the participation of new actors to be not only complementary, but also subversive. What is more subversive than a student playing the role of a teacher? Nevertheless, it is not enough to play the role: it must be credible and, above all, sufficiently legitimate to be both credible and recognized, in the most explicit manner possible.

Social media presentations/slides or video platforms provide us with a first approximation of this phenomenon. Here, when the learner shares resources freely, on the one hand it increases the material available to other learners. But on the other hand, precisely for that same reason, it leads to a dual role of student and instructor simultaneously. Applying metrics to analyse the use of these OERs allows us to quantify what could be left out in a domain of pure speculation or intuition.

Practically any social media presentation or video platform – or any other platform in general – will provide the number of times a particular resource has been watched or shared. When a resource has been accessed by many more users than those in the closed list of people in a classroom or those enrolled in a subject area or course, a total subversion occurs: not only has one person asked a question to their classmates but that person has become a reference (if only temporarily) for a subject to the general public. This person has become a de facto teacher.

This occurs even more explicitly and intensely in communities of practice, communities of learning, intranets, vertical social networks and social network groups, not to mention cMOOCs, undoubtedly the figurehead in all processes of reflection and implementation of learning dynamics based on the sharing of knowledge between parties. They are merely reconfigurable networks, starting with a platform meant for generic uses, that can end up rethinking – and reusing – itself as a system of educational management (Meishar-Tal et al., 2012). Along the way, however, they not only end up rethinking themselves, but also imprinting transformations onto the environment they adjust to. For example, the educational environment, learning and the teacher.
This transformation is not trivial. From the most basic tools of education 2.0 (Peña-López et al., 2006) to the most complex cMOOC (Hollands and Tirthali, 2014) and Personal Learning Environments, all aim to interchange learning and teaching within the scope of an inseparable pair that complement each other perfectly (Peña-López, 2013a). What does this subversion give us?

- It incorporates new actors, this time not only in quantitative but also qualitative terms, in the sense that they play several roles that interchange and coincide.
- It allows us to work with free access, with resources and actors who conform to the ‘real world’, without fiction, filters or firewalls. This open work accords with other initiatives oriented to the simulation of real environments or real case studies, which have been shown to be very beneficial in certain scopes.
- Presenting to others, which sharpens key competencies such as analysis, synthesis, abstraction, projection, empathy, a sense of the shared and collaborative construction. Competencies that will be more than necessary in the very immediate future – it has not already happened in many areas.

**Evaluation**

In the previous sections we have for the most part provided information and a background to the process of learning. We have done it by questioning the educational institutions that generally participate in this process, particularly the physical actors, such as teachers. Surowiecki (2004), Benkler (2006) and Zook et al. (2010), among many others, show us other forms of actor participation, mostly in decentralized form, or at times individually, though always through a system of highly decentralized collaboration. These authors show us not only how information may be shared outside of a hierarchy or organization but also how the work can be carried out within an architecture of network connections and, within collaborative work, the evaluation of it.

Many social networks already allow for the peer evaluation of different aspects of our daily life. Open evaluation already exists in vertical or theme-based social networks, where one can rate services (restaurants, accommodation, tourist sites and so on) in certain areas. This type of evaluation is already becoming somewhat more serious – while also becoming technically better addressed – through peer evaluation, not of services but of persons themselves. In this way, professional social networks or communities of practice often offer the possibility of evaluating the competency of a person as well as assigning competencies that had not been initially envisaged or matched to their personal profile but are valued by the community.

Peer evaluations are manifested best within connectivist MOOCs, known as cMOOCs. A polybrid made up of courses, communities of practice and learning community, many cMOOCs already allow peer evaluation, whether it be through the act of evaluating or by offering evaluation tools to be used freely within the entire community. Although these tools or platforms are usually complex in some of their aspects, just as evaluation is, it is also true that open evaluation by peers may be carried out with the simplest tools, such as microblogging. However, they still require specific preparation, strong leadership and a certain change in mindset (Chen and Chen, 2012).

Nevertheless, once the first hurdles of aptitude and attitude are overcome, we think that evaluation can be fully opened up and transformed with online educational tools, including the professional or vertical social networks, cMOOCs and microblogging previously described. We think that in addition to the subversive action of opening up evaluation to peers, this practice may also involve the following:
• Incorporating strategies to monitor surroundings, which would undoubtedly contribute to the management of the learning process, beginning with self-testing and an increased awareness of the state of the question, as well as determining learning objectives and the syllabus to follow in order to achieve them.

• Configuring one’s personal learning environment based on a combination of awareness, strategies and tools.

• Fostering critical learning by situating the student on the other side of the mirror, allowing them to reflect on the fundamental points of learning, thus designing activities to reach learning landmarks with dedicated objectives.

Certification

Often the final product of evaluation – although not always and not solely – certification, is an instrument that produces an approximation of the knowledge and competencies of a person in a way that is easy, structured and succinct. In addition, as a general rule, certification often acts as a gateway in which this knowledge and these competencies lead to the possibility of taking on a responsibility, a job or a higher level of study in a formal institution. Electronic certification, such as that which enables tax returns to be filed, has existed for many years, but only recently has it expanded into other areas in ways that are, again, more decentralized, distributed further and within a greater network. A first approach to certification by accumulation of credits are found – like the restaurants, accommodation and tourist sites previously mentioned – in communities related to commercial goods or services. This certification by accumulation consists of bringing together, after some deliberation, the individual evaluations of the members of the community to grant a distinction (a certification) for the goods, service or organization under evaluation.

Badges are symbols that by means of evaluation mechanisms and digital certification allow, like traditional educational certificates, knowledge or skills to be identified in a person. Unlike paper certifications, however, they are based on the mechanism of digital certification by accumulation, as described above. These insignia are the perfect addition for accreditation obtained from scenarios of open learning (Domínguez Figaredo and Gil Jaurena 2011), which have been expanded upon throughout the present overview of the different educative institutions. We do not think it is necessary to enter into the dynamics or strengths of this change in certification. We believe that they have already been covered in other sections and certification is simply proof of what has been described, more so than a tool in its own right.

The Curriculum

What we have said about certification can also be said of a curriculum. It is merely a still photo of a dynamic process – the learning process. Just as it occurs in certification, curricula attest to a moment in time in the learning itinerary. But, like all still photos, rarely is the truth reflected in it. If we add curricula to this argument it would be, naturally, to see how to convert that still photo into either a dynamic sequence or another still photo that guides us to another area or follows an itinerary from one point to another, producing a map.

By recovering the concept of heutagogy (self-determined learning, an evolution of self-directed learning as explained by Hase and Kenyon, 2000; Blaschke, 2012), we can see how the entire analysis
made up to this point ends up leading, inevitably, to this heutagogy, this selfdetermined learning where what is important is not only the process itself and its control, but also the objectives and results achieved. In this sense, rethinking curricula obeys neither issues of institutional policy – academic curricula are normally established – nor business policy, to which we adapt our personal curricula: this is quite clear. The option here to rethink curricula in fact proposes that it be opened up to deprive it of that aura of red lines that cannot be crossed, which focus on the beginning of time for always.

Here we question curricula and its definition, its deployment, its measurement and its evaluation in the same way we have questioned and dissected the textbook, the library or the syllabi, to mention only three educative institutions strongly bound to what we have to learn or everything we know about that which we must learn. Although there are many approaches to the phenomenon of personal learning environments (PLE) (Castañeda and Adell, 2013), we believe we can define them as ‘the set of conscious strategies to use technological tools to access knowledge found in objects and people and in doing so obtain certain educational goals’ (Peña-López 2013b: 94), but we cannot refrain ourselves from comparing it with curricula and ask ourselves to what extent PLEs, which are dynamic, may end up replacing the semi-static curricula.

In many aspects PLEs seem like a simultaneous evolution and a resolution of both the many tools that shape it and previous constructs such as e-Portfolios. Tur and Urbina (2012) suggest, quite appealingly, that e-Portfolios be based on PLEs, in a luckily similar approach to that which we ourselves outlined when referring to translearning (Peña-López, 2013b) (Figure 3.4).

Source: Adapted from Peña-López (2013b: 135).

Figure 3.4 Regular modifiers in transeducation: closing the circle of the ICT in education M4629-ZORN_9781788970150_t.indd 73 06/09/2018 09:56 74 Higher Education in the Digital Age

AN ECOLOGY OF LEARNING TASKS
We began this chapter by proposing to the reader that one should not make an arbitrary list of tools in online learning. Instead, we propose putting the focus on educational institutions and how these tools allow them to be questioned, transforming them and complementing them with new practices and points of view. What ultimately interested us, as we have already discussed, were not mere instruments, which are always obsolete and replaceable by others, but rather a new world of learning that brings with itself the application of the principles inherent to these tools. In this new relationship between people and their learning, we believe that institutions will no longer play a central role. This affirmation is by no means new, but without a doubt its validity is urgently weakened with each passing day.

Today we are witness to profound changes in human relationships. We are witnessing how collective decisions and actions have turned away from settings that are more directed and planned, requiring large investments before starting due to restrictions related to physical access to resources. Instead they move toward other decentralized or distributed environments, with the individual’s initiative playing a greater role, as well as progressive evolution as a modus operandi as opposed to comprehensive planning.

We want to define open social innovation as ‘creative destruction that aims to construct new processes that may be appropriated by the whole of civil society’ (Peña-López, 2014). In this new paradigm, educational institutions no longer have the sole objective of transmitting content or skills, but rather aim for meta-learning, the reflection and appropriation of the very process of learning and the heutagogy that allows it to replicate and perfect this process, which is only possible with total self-determination. Based on a perspective of open social innovation, educational institutions have three main foci:

- Provide the context within which learning takes place. Although the student is increasingly independent when deciding what or how, gaining perspective is still mainly in the hands of the professional educator. Only a collective vision allows us, through its construct, to approach the context beyond the singularity of each person.

- Identify spaces in which exchange, collaboration and cooperative work can take place. It suggests that we transcend institutions to find new ones or create them, without of course having to discard those already in existence, thus demonstrating that they are still valid and relevant.

- Promote interaction so that these spaces, in these contexts, can be oriented towards learning. Although institutions must not continue to direct learning and learners should instead take over this leadership role, they do continue to have an increasingly important role in terms of provision and guidance.

At a more pedagogical level, these three foci can be rewritten as follows:

- Providing the necessary tools to draw a correct diagnosis one’s learning stage in relation to others and, particularly, in relation to one’s self, by looking both to the past and ahead to the future.

- Identify learning goals, which in fact correspond to new spaces to occupy in relation to how we have defined the future. These goals can easily be transposed into learning spaces and communities of practice and learning, allowing one to build a personalized learning environment.

- Promote the design of learning paths as a nexus between diagnosis and learning goals. Incorporate the necessary resources into this design to catalyse interaction and bring together the results it produces, closing the circle of the teaching-learning process.
AN EXAMPLE TO RULE THEM ALL AND THE PROS AND CONS OF UNFOLDING INSTITUTIONS

At this point some readers may think that everything holds up on paper and that reality is much more elusive to transformations. What follows is a real example with the implementation of (almost) all of the aforementioned interventions. In some cases some minor modifications have been made for the sake of clarity or coherence. But, in general terms, this is a real-life example. The subject where we will place all these interventions is called Technological keys to e-Government (initially Technical foundations of e-Government), the first subject taught on the two-year Masters programme in Electronic Administration and Government of the Open University of Catalonia (Barcelona, Spain). The composition of the students is approximately one-third lawyers, one-third computer engineers and one-third public administrators. All of them usually know their own field better than anyone else (especially their teacher, an economist) and know little about the rest. As a 101 subject on technology, the concepts are quite simple and are very well explained in the subject handbook (written by their teacher, which is why he knows the handbook is so good).

But a couple of dozen concepts make little sense without a real-life substratum on which to see them in practice. And here is why seeing not one or two but as many cases as possible becomes very important: the more real cases, the better. Their teacher, good as he is, cannot possibly know all cases. He could choose some of them, and choose them for the students, which would but eliminate the real-life part of the cases and leave them useless. Finding the cases is as important as getting to know them. Last but not least concepts and real cases come within a context. A context made up of specific actors, specific trends in the field, actions by actors according to the trends, the socio-economic environment of each geographic place, and so on.

So, summing up, we have to teach some basic concepts to students that might know some of them at the expert level, put them in a relationship with reality and put reality in the context of the discipline and other disciplines that shape that reality and context. A reality and context that are so rapidly changing that their teacher, good as he might be, cannot by any human capacity be knowledgeable about all of them. We planned the assignments:

- The first one was about mapping one’s own Personal Learning Environment (PLE) and especially participating actively on Twitter (microblogging), Slideshare (shared documents, especially slides) and Delicious (social bookmarking). Blogging was also an option. The assignment was to be carried out throughout the whole semester.

- The second one involved: (1) writing an essay (a case study) on the technological barriers for the adoption of e-Government in a specific case; (2) summarizing in half a dozen slides, sharing it openly online (Slideshare) and embedding the presentation in the classroom’s forum; and (3) debating in the forum about everyone’s cases.

- The third one was writing a collective (with three-four people) critique on a law or regulation recently approved, on a collaborative document creation platform (wiki, Google Documents). Each team only writes part of the critique (a given set of articles), so that the whole classroom covers the whole law or regulation. As the final document comes together, a debate closes the assignment. Let us very briefly go back to the ten institutions that we aimed at unfolding and see whether and how we achieved our goals.

The School
The virtual classroom ended up with the idea of school. Or, at least, the idea of a school where you have to be in the same place and the same time as your peers – and teachers – to ‘attend’ the ‘lecture’. Virtual forums and other a-synchronous tools enable ‘attending’ whenever and wherever you want.

The literature has discussed plenty about the pros and cons of virtual campuses. While the pros are quite obvious (no limits of time or space/geography) some cons are worth mentioning. The dedication of the teacher has to be dealt with: that the virtual campus is always on does not mean that the teacher is. Thus, an agreement with the student has to be reached, for example the teacher will answer any questions within 24 or 48 hours. A sense of presence is also welcome: if there are no questions or doubts, then the teacher should ‘manifest’ herself in the classroom: encouraging words; alerts for deadlines; commenting on some information; and so forth.

The Classroom

The classroom, understood as a cohort, was surpassed by using Twitter and other open spaces. People from outside the classroom could (indirectly) contribute to the debate and sharing of resources around technology and e-Government. More importantly, students would find the spaces where these professionals would ‘meet’, the kind of things they discuss, the kind of outlets they usually get information from, the names of the organizations that they work for. Not only is this a cohort-less or un-closed idea of a classroom, but one deeply rooted in everyday life and ‘real-life reality’.

The Textbook

Contributions on Twitter, Delicious or the debates changed the idea of the textbook. The textbook shifted from the mandatory handbook to an optional always-there vade mecum to be used as a reference, not a starting point. The textbook thus becomes a live mesh of materials in constant evolution. And, quite important, not by the addition of open educational resources (OER) but with the addition of OER and many other inputs that are common currency in real-life.

There is a problem with this approach: overwhelming the student, especially that student with less time or resources. The role of the teacher here, as a content curator, becomes crucial. Summarizing what has been appearing inside or outside the classroom, sorting it, making sense of it is of dire importance so that an opportunity to open cognitive gates does not turn into crushing infoxication (or intoxication by excess of information).

The Library

The proliferation of found materials is completed with the outputs of the students’ assignments, especially study cases. After some semesters, study cases are counted by the hundred. If they are correctly labelled and categorized they become a ‘library’ of cases maybe unique in the world, even if they are in slide format. The same happens with the debates, where many questions are put, most of them ending up in heated (in the best sense) debates that lead to conclusions non-existent in the handbook or the library.

The most interesting idea here, though, is that the library is built by oneself. The main barrier, besides being overwhelming, is quality. The active role of the teacher to validate content is paramount. And validating for quality means not only that what is being said is true, but that it is relevant: when a
'library' can grow infinitely, it becomes more important to teach how to build it rather than how to store or access it.

The Syllabus

In the same train of thought about building libraries comes how to build syllabuses. The syllabus in e-Government is not useless, but it demands not being very attached to it: the world changes way too fast for a syllabus that may be some years (or even some months) old. Not being attached to a syllabus is difficult both for the teacher – who carefully planned it – and for the student – who expects to be evaluated according to the syllabus.

That is why the sooner the textbook, the library and the syllabus are placed on the shelf of ‘tools’ and not ‘things to learn by heart’, the better. Rewarding (that is, marking) the discovery of new content, ideas, trends, people is also an important thing to state at the beginning of the subject.

When things run smoothly, the teacher can abandon her role of finding new stuff – always costly in terms of time – and move to inquiring about things, opening issues, stating doubts or problems, posing questions. Closed content provides closed answers; open questions bring open answers . . . and open content.

The Schedule

Now that it has been left clear that content – and even the working framework of the subject – can come from anywhere, it is time to expose oneself to things that can come anytime. The third assignment is in this direction: reality will provide new problems anytime. A new law, a new regulation, a new technology. Leaving open one assignment (students knew they had to analyse a law but would not know which one until literally days before the beginning of the assignment) is a way to simulate this uncertainty. They will – they will have to – get used to monitoring the relevant actors and their movements to advance what can happen in the nearer future. This is the idea when we speak about unfolding the schedule: be ready and build a strategy for being ready. The work around on networking sites aims at strengthening this strategy or making it more visible.

The Teacher

One of the toughest parts of unfolding institutions is unfolding or transcending oneself. Moving aside and let things unroll is more difficult to do than to say. I was lucky to have no alternative but to do it: the profile of my students and the profile of the subject forced me to. At the beginning it is uncomfortable, then it is rewarding: being able to learn as your students learn instead of trying to fill them with your own knowledge is rewarding. But it does require a radical change of strategy.

The best way to change this strategy is to make it your own: that is, what you intend for your students you should apply to yourself. Becoming part of ‘real life’ is a must if one intends to have one’s students being part of a community of practice or a community of learning or an industrial sector or a dialogue between practitioners and professionals. Again, this is not that usual in academia, the ivory tower. And this is probably one of the reasons why new learning approaches are creating so much tension in higher education institutions.
Evaluation

For unfolding evaluation some different sources were used: comments to one student’s work from other classmates during the debate, the acceptance (likes, RT) of some information shared on social networking sites (Twitter, Delicious, Slideshare), one student’s comments to their classmates (that is, as a sender, not a receiver of comments) and, of course, the usual view of the teacher. Opening evaluation, even if a tiny amount, it not as important for the external feedback that the student gets, but because it changes their attitude: knowing that your work will be publicly exposed (among classmates, out in the global open) is a game changer. But this is how real life works: in the open.

On the cons side rules have to be perfectly clear. Arbitrariness has to be explicitly avoided and the amount of marking that students are ‘gambling in unusual ways’ has also to be limited. Not everyone lives well with exposure, so carefully monitoring the evolution of students in terms of attitude and behaviour is as important as doing it in terms of (good) performance.

Certification

Certification falls a little bit outside of our example. We did not issue badges or the like. On a more inner-side point of view, though, some tacit certification took place. When we introduced our example we said that our students were experts in their own fields and aimed, with our Masters, at being expert in the adjacent topics of their field of expertise, always in the framework of e-government. Our aim to have our students be active and their learning be open, challenging, demanding and critical contributed to identifying who knew what among one’s classmates. The same happened with those students that were more active in social networking sites and were ‘rewarded’ with more visits to their slides or with more endorsements for their contributions to the community.

This is by no means a substitute for an official grade or certification. But once students notice these things happening, it does trigger in them the need – and the sense of usefulness – of doing it more, and better. Of course, one has to make students aware of the real meaning of these rewards: they are informal, they help them to identify trends, patterns, clusters. They are not goals, but beams or beacons that point to the real actors, institutions, topics they have to be knowledgeable about and be a part of.

The Curriculum

In summary, what we tried in our example was not to teach our already savvy students, but to help them enter in the arena where real things happen. Some of them already belonged to that world, so we pointed at some tools and people that may be useful for them to strengthen their ties with this world; for others alien to this reality, we help them to map for themselves this uncharted territory. And we tried to do it in real-time, with real tools, with real cases, chosen by themselves so that they could get used to doing it for when the teacher, the university is not there to help. Opening gates is hardly considered building a curriculum today. Some speak about competences. But we tried a leap forward, beyond content, beyond competences and into the real thing.

CONCLUSIONS
Replicating – or even scaling up – this experience should be done as it was done in the first place: Piece by piece, following a modular approach that adds pieces as they are needed. At the micro level, it requires digital skills (both at the teacher and students level) and freedom or autonomy of those who are to implement the different initiatives. At the meso level, besides leaving freedom to the former ones, support and coordination are quite welcome: support in some tasks (usually technical ones) common to most proposals (for example, access to external resources, some coding); coordination to benefit from economies of scale and avoid burnout of pioneers. At the macro level usually non-interference suffices: these initiatives usually work well organized bottom-up. Non-interference can be complemented with recognition or, even best, with mainstreaming: Acknowledging that something went well should be the first step to acknowledging that something is good and would, thus, deserve being enjoyed by everyone.
REFERENCES


Chapter 4 - How to design a 21st-century online course that makes learning happen for all

Annika Zorn, Salla Sissonen and Chiara Canestrini

ONE MORNING ON THE BUS...

When the Massive Open Online Course (MOOC) hype was almost over its peak, Annika received an alert on her smart phone while on her way to work inviting her to access a video lecture via the iTunesU app. On the bus she watched the first of a series of lectures on ‘Justice’ taught at Harvard University by philosophy professor Michael J. Sandel (Harvard University, 2017), which have been viewed today by tens of millions of people around the world. When entering the office to have one of her morning talks with the director of the School, the two started to ponder how the School could make its own training accessible to more people around the globe. While not aiming at the outstanding quality and success of the Harvard lecture series, why not make an effort to make the School’s annual training available to more than the 30–40 young energy professionals who came to Florence each year?

This morning talk was the spark that was needed to ignite a series of discussions at the School, including with the School’s training director. From the very start he openly embraced the idea to move the School’s flagship course on the ‘Regulation of the Power Sector’, an induction training programme for young regulators and those regulated in the energy sector, online.

The online course we developed in response to these discussions was launched in autumn 2014. Three years later more than 600 practitioners and academics from 76 countries – from Peru to Cameroon, from Australia to Russia, and from many EU countries – had been trained in the five-month online programme. The completion rates for the course were around 85 per cent and 62 per cent of participants scored high in the final exam which assessed ambitious learning objectives (Figure 4.1).
ACADEMIC TRAINING FOR EUROPEAN PRACTITIONERS

When the School for energy regulation was founded in 2004 at the European University Institute (EUI) in Florence (see for more detail Chapter 10), one of the core founding ideas was to train a new generation of European professionals working in the energy sector. This was done through an executive training course for young professionals that mixed academic thinking (mainly from economics, law and engineering) and practical knowledge of energy regulation and over the years developed into an annual training programme. The course was designed as a blend of two residential weeks and several month-lasting distance education.

The course was characterized by a strongly teacher-centred approach, and lecture-based residential training with a traditional distance teaching format typical of that time: selected (printed or digital) reading materials, a few assignments that were submitted on the learning management platform and graded by the instructors, and a final essay, again submitted online and graded by the instructors.²

When the discussion started as to how the School’s flagship training could be moved fully online, the questions we posed ourselves initially were about how we could make the training accessible to a wider group of learners. We could have simply filmed the lectures, added the digital reading material and put everything online for the learner to figure out how to engage with – an organized online repository where people access the recorded material of the annual training at their own pace and in their preferred way – which is a model used by many Massive Open Online Courses (MOOCs), or openly accessible courseware (OER).

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1 On the question: How satisfied are you with the course? For which one was the lowest and ten the highest score, the average satisfaction of all participants was point 9.

2 The learning management platform (LMS) certainly offered more possibilities to design the course. Yet, as in so many institutions, educational material and teaching habits had been simply imposed on the learning environment without stirring a deeper reflection on what the technical environment would allow the course to develop in terms of learning activities and teaching approach. Compared to most universities the use of the LMS at the school was nevertheless advanced as it did not simply use the learning environment as an online repository for the course material but offered the online submission of assignments and a course forum where participants could get in touch with the instructor for clarifying questions.
What happened instead was that the idea to move the course online triggered a deeper reflection on the way training was offered at the School. The ambition to offer a training that would require learners to put their acquired knowledge into practice was in stark contrast with a surface learning approach (Marton and Säljö, 1976) which an online repository could have offered. While the ambition to offer a high-quality learning experience was not formulated in these terms at the start of the online journey, the new project turned out to be an opportunity to radically question the practices the School had adopted in the area of training.

The online course initiated several dynamics at the School, most importantly the dynamic whereby the School started to move away from a teacher-centred approach towards a course design emphasizing student learning, engagement, communication and collaboration – with a focus on the particular opportunities and challenges of teaching and learning online. Moving the flagship training online was the start of a journey that:

- Changed the way a training course was designed at the School;
- Changed the team’s and the faculty’s approach to engaging with learners;
- Changed the way the School developed its training portfolio.

As we will discuss in the chapter, these changes allowed the School to explore completely new practices as how to share the School’s expertise and knowledge through its training activities. It also allowed the School to explore different practices of academic knowledge creation occurring through the online courses.

MOVING THE SCHOOL’S FLAGSHIP TRAINING ONLINE

The idea to re-think the School’s training activities was not born because anything was going wrong. The original training course – the flagship of the School – did not need change. The course was greatly appreciated by course participants and considered a must-have certificate for many regulatory authorities and regulatory offices in energy companies. The course was directed by the School’s training director Professor Ignacio Pérez-Arriaga, a leading and recognized expert in the field (Professor for energy regulation at MIT and former Commissioner at the Spanish Electricity Regulatory Commission, thus impersonating the School’s declared ambition to bridge academic and practitioner knowledge). Each year the demand for the course exceeded by far the places available to train young professionals.

Moving the training online meant allowing access to leading knowledge in the field of energy regulation to (different kind of) learners from distant places around the globe. This started a process to improve the quality of teaching at the School and thus make a better learning experience available to many more people, whether in Florence or online. Further, it started a process of continuous innovation in the area of training that is still ongoing at the School today.

The new course designs, the engagement with learners and experts, as well as the variety of (online) course offers started a deep transformation of how knowledge creation and sharing is understood and practised at the School. In what follows, we will describe these three dynamics that developed in response to the decision to move online.

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3 See also Chapter 1 by Liz Marr who similarly discussed the shift at the Open University from traditional distance education to exploring the full potential of online education at the Open University, UK.
A New Course Design at the School

The online course firstly changed the School’s approach to designing a new course. The term ‘course design’ suggests that there was a well-defined process in place as of the very beginning to guide the course development. This was not the case, however. When we started to develop the online course no formal requirements for designing a course existed at our institution (EUI) that would have guided the design of a new course.⁴ While we ended up with an innovative and successful online course design (see Figure 4.1) and the School today uses a set of well-informed practices and standards to guide the design of its new online courses, it was the result of a constant calibration of what we wanted to achieve (which was a moving target), the experience we had gathered from other activities of the School, and, very importantly, the challenge to take the group of (external) instructors and learners with us at all times of the course development.

Yet, while the School did not follow established models (or best practices) of higher education course design at the start⁵ and no formal or institutional requirements were in place to guide the process, the online course did not develop in a void. The course had to raise enough money as to cover the investment and running costs and its quality and relevance would have to be validated by academics and practitioners being experts in the field. In particular, the combination of two factors did support but also shape the development of the first full online course of the School:

First, the course design could build on the annual training that had run for many years. The online course could rely on an experienced course director who had decades of teaching experience being an internationally renowned academic in the field, and an existing team of instructors covering a wide area of expertise relevant for the course. The course content was already organized into a series of modules and divided among the team of instructors. The reading material for each module existed and a handbook on energy regulation by the school’s training director had just been published, building in great part on the course content and structure which then served as the core reading of the course. The new course could thus build on an existing course structure, course material and teaching faculty.

Second, for a couple of years, the School had been experimenting with new multi-media formats and social media to communicate the research more widely, supported by a team of multi-media experts (see Chapter 10). The experience and insights gained from these online activities of the School — the webinars, video lectures, video interviews, and all kinds of ways to inform about the School’s activities and output more widely, gave us important clues about what works and what does and does not work online. We observed online audience attention for different online formats and activities (for example, recorded video lectures or interviews compared to live webinars); experimented with how to engage people in different types of online events and activities (e.g. answering polls and submitting questions during webinars, social media participation during live streaming of conferences); but also gained experience in how to support academics and other experts talking in front of the camera or to an anonymous audience during an online seminar. Also, and very importantly, we learned that we had

⁴ In many universities today new course proposals have to go through a formal process of quality assurance before courses are included in a department’s course catalogue. Universities also increasingly expect their teaching staff to undertake professional teaching training as to learn how to design courses for higher education teaching (for an overview see Sursock, 2015).

⁵ That is, starting from the definition of what the learner should get out of the course and aligning accordingly the learning objectives, ways of assessing whether learning has taken place and the teaching and learning activities that support this learning (see Biggs, 1996).
to be careful to take the audience or learners with us, trying to find the right balance between what was technically possible and what activities or set-up would make us lose technically less experienced participants or those that do not have the time or interest to engage in more demanding online interactions.

When starting to design a new course, the first – often unquestioned – step is to start from lectures, the tacit assumption that knowledge is best transferred by somebody talking and somebody listening. Similarly, when we started to develop the online course, we started from the lectures, clearly being the teaching activity instructors were most familiar and comfortable with.

Course instructors had prepared PowerPoint slides with detailed information on various aspects of how the energy sector needs to be regulated and why. It was of great help that these external instructors had been involved in the residential training and could rely on existing lectures they had developed in this context. The challenge was that these lectures were indeed long speeches that expected that the learner process a substantial amount of dense information in a short time. We knew however from a series of video lectures we had published at the School, that attention for a video lecture was even more difficult to keep than in the classroom, in addition to the insight that lectures tend to not support more ambitious learning objectives (Bligh, 1998).

Together with the instructors, the course editor decided to try out different (shorter and more engaging, see also the discussion in the next section) video lecture formats. Long lectures and dozens of PowerPoint slides were limited to short animated (five-minute) video lectures. A series of three to five video lectures would set the scene for each module and introduce some of the key concepts. Yet, the amount of information that was delivered via video lectures had been substantially reduced, and the obvious concern was that this would not provide learners with a sufficient understanding of the topics. It was clear that there was much more to learn than what could possibly be covered in 15–25 minutes of video lectures for each of the modules. Instead of simply adding the reading material and testing the understanding at the end of the module with a multiple-choice test, we explored other learning activities. To introduce the learners to the full set of issues and thinking in each module, we started to develop a wider set of additional teaching and learning activities that focused on engaging the learner in the online space (see Box 4.1). Most learning activities were designed so as to allow learners to get a deep understanding of the topic and to apply their knowledge by analysing existing power systems across the globe.

One important difference from many other online courses was that once the course development was completed (i.e. the course design aligning the learning outcomes, learning and teaching activities, and the formative and summative assessments) the course was not simply put online for the learner to undertake the learning path on his or her own. Instead of giving no or only minimal support to the learners, we dedicated as much – or even more – attention to the running of the course itself. The effort that we put into running the course is a major difference with most Massive Open Online Courses and many of the corporate (self-paced) e-learning products, where learners undertake the learning journey on their own.

One crucial feature of the online course was the continuous engagement of a course facilitator with the learners and the instructors. The course facilitator on our online course is a figure that acts as the first contact point for instructors and learners, and the person in charge to keeping close track of the individual and collective learning progress. As we were trying to achieve higher-level learning and due to the fact that the course was what one could call a ‘middle-sized online course’ with maximum of up to 150 attendees, the facilitator can easily engage with single learners or course teams and identify
or anticipate potential problems and provide personalized support. Also, the course facilitator had a crucial role when it came to managing the expectations of course participants of which the majority had been taught traditionally. Pedagogical changes are seen as tiresome or — in the worst case as not proper learning — not only by many instructors but by learners too. People often have strong (implicit) assumptions about what learning is. The presence of a course facilitator and her constant motivation of the instructors and learners ensured that learners engaged in more demanding forms of learning activities.

From our experience the figure of the facilitator was key to getting the amount (and depth) of engagement by both learners and instructors. It not only allowed learners a continuous point of reference for any questions they might have (particularly as there were different instructors for each module), the same was true also for the instructors: As online course activities are undertaken at any time by the learners (in particular with a global reach where time zones differ) activities other than the live class are easily ‘out of sight – out of mind’ for the instructors. The facilitator plays a crucial role in supporting faculty to indicate the core activities where their engagement is needed, such as questions in the forum that could not be answered by any of the peers.

BOX 4.1 THE FIRST ONLINE COURSE: HOW BEST TO REGULATE THE ELECTRICITY SECTOR? LEARNING WITH THE PROFESSOR FOR ENERGY REGULATION FROM THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)

The school's first online course ‘Regulation of the Power Sector’ launched in 2014 runs over a full semester and is directed by the MIT Professor for Energy Regulation and former regulator Ignacio Pérez-Arriaga. The course is divided into 13 modules, each lesson taught by a different expert, running over two weeks. Each module is composed of a series of learning activities designed for a deep learning experience (as opposed to a surface approach), that is, enabling learners not to simply repeat acquired knowledge but being able to apply that knowledge in new and different contexts (see Bloom’s taxonomy in Wikipedia, 2017). Learning activities within the modules Each module engages the learner at the very start of the course, taking examples from a real-life scenarios. Light activities at the start of the course (quizzes, small homework) connect to the learners' prior knowledge (that might or might not be linked to the issue energy regulation) and ask them to engage with the topic before watching the video lectures. Other lessons start with open questions or teasers to test learners’ ideas and implicit knowledge about a topic. The short video lectures (visually supported by key terminology and graphics) that follow answer questions that had been raised in the previous activities and introduce further topics relevant to this lesson. Each topic links to the discussion forums of the course, where learners can join the other participants and ask questions. Learners are also invited to contribute their specific expertise. For example, as learners come from very different regulatory systems all over the world, they can often share country-specific knowledge. Every week interactive live classes are run with the instructor of each module. During these one-hour live sessions, learners can directly interact with the instructors. They can also send questions in advance or watch the recording of the class afterwards. During the class, after a short presentation, the instructor addresses participants’ questions and stimulates discussion by using live polls. At the end of each module, learners take a final quiz (summative assessment) with questions displayed at random and learners are allowed to retake the quiz as many times as they wish. This approach has been proved more rewarding for learners. On the basis of data tracking each learner’s activity, badges are awarded, much appreciated by the learners as these make their learning progress visible. Learning activities running across the whole course Every module has a set of tasks for the two big projects that learners submit at the end of the course: Firstly a policy paper where learners are single authors, with questions to be answered around the 13 module topics. Secondly, a wikiproject where learners collaborate online in small groups, having to describe a regulatory system of their choice covering again all 13 module topics of the online course. Both big learning activities are worked on continuously on-the-go during each module so that learners can test the level of understanding of each topic straight away while the module is running. These two activities allow learners to get a deeper understanding of how the topics covered in the module work in practice. The wiki articles are also used as case studies for future consultation. At the end of the
course, course participants evaluate each other’s work (anonymous evaluation of policy paper by three peers and anonymous voting for the best wiki-article).

With the first online course, we had thus introduced a new course design that moved away from a lecture-based and heavily teacher-centred teaching approach, introducing many different teaching and learning activities and the role of the course facilitator. Of the total amount of course activities within a typical module that amounted to about eight hours per module, only 20 minutes were now delivered via lectures, another couple of hours had to be dedicated to the core reading and summative assessment of each course, and the rest were more advanced forms of active learning in forms of doing small research exercises, interacting or collaborating with other course participants, also taking advantage of tools to tap into the expertise learners could bring into the course (what is known as horizontal learning), introducing peer learning and peer assessment, known to be an efficient tool to support learning (Triantafyllou and Timcenko, 2014).

**Approach to Engaging with Learners**

The work on the course design encouraged the team of instructors to reflect on their teaching and learning practices and how better to engage with learners as to support higher-level learning. For this to happen it was essential that the online course development was guided by a ‘course editor’, who combined knowledge of the course content with an interest in learning theories and related research and innovative (online) learning practices. This combined expertise of the course content and learning theories allowed the streamlining of the course development and made it possible to find the right balance between the instructor’s preference for delivery of content and the opportunities that online learning could offer for engaging learners in collaborative learning experiences.

The development of the online lectures described in the previous section is again an inspiring example for how this reflection on the role of the instructors and learners evolved. As mentioned above, following a common practice in higher education the course editor and the team of instructors started from the content that should be delivered via lectures as to ‘transmit’ the knowledge from the instructor to the students or learner. Indeed, in higher education lectures are – despite their limits for making learning happen – still the dominant teaching activity. Insights into learning theories and cognitive science suggest there are better or worse forms in which to deliver a (video) lecture for the learner and the school’s multi-media team had gathered experience on the useful length and the advantages of animating the video with images and key terminology (Figure 4.2).

In order to make short and engaging video lectures the course editor set-up a collaboration with the instructors and the media team. Instructors started to work on their video lecture trials (delivered in front of the camera and then watched and discussed). To prepare their trials, each instructor was provided with a different hand-out detailing tools on how to engage the learner (for example, how to get them interested, how to get and keep attention, how to scaffold learning, how to improve the learner’s understanding). Each tool was based on insights into how our brain becomes alert, and processes and retains (new and challenging) information. These insights had been translated into easily applicable teaching tools by the course editor that could be used during a speech, giving some explanatory background on why and how this enhances learning.

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6 Some sources from this broad research field used were for example Willis (2006); Ambrose et al., (2010); Carey (2014).
Note: Each video lecture offers the possibility for downloading a transcript to give learners additional access to the information, which is particularly helpful as none of the instructors and most learners were non-native English speakers.

Source: Authors.

Figure 4.2 Example of video lecture animated with key terminology

When we discussed the video lecture trials, instructors could explain to the others why they used ‘their’ lecture teaching tool. During this one-day discussion of the video trials, we discussed the role of tapping into the pre-existing knowledge of the learner, how to get the attention of the listener at the beginning of the talk and how to get the learner interested and engaged in what is to come, the importance of narratives as our brain seems to be wired for causal and sequential thinking and the need to present information that is personal and not abstract (Kahneman, 2011: 170ff). At the end of the day we had a ‘lecture teaching tool box’ that by way of example had been made accessible to the other instructors as well.

The benefits of this one day discussion of the video lecture trials with the whole team were: First, to experience the online teaching (video lectures) from the learner’s perspective (quality and length of the lecture); second, they familiarized the instructors to speak in front of the camera; and, third, and most importantly, enlarged the teaching repertoire of each instructor by providing them with a series of ready-to-use lecture teaching tools to better enhance learning. Once the trials had been discussed, scripts for each video lecture series were drafted before the lectures were finally filmed – a process of back-and-forth between the school’s course editor and the instructors over several weeks.

Starting from the lectures which are the dominant higher education teaching practice seemed the right point at which start a reflection on ‘how learning works’ (e.g. Ambrose et al., 2010). Once the topic of how to better engage learners was put on the agenda, other online teaching and learning activities were explored. The course developer, the instructors and the multi-media team were exploring ideas on how to increase engagement throughout all course activities, for example, during the weekly live classes. One way to engage learners was to encourage them to share the expertise they might have on specific issues in advance of the live classes, or to solve small puzzles ahead of the online meetings.

Indeed our brain is so strongly wired for causal and sequential thinking that we are often misled in drawing conclusions (see Chabris and Simons, 2010).
It was only a small step from there to emphasizing the importance of valuing the knowledge learners might bring to the course and the advantage of learners taking ownership of their learning so as to be highly motivated to progress with the course. The course editor in collaboration with the instructors designed a course activity in which learners co-created articles in collaboration with other learners about the energy regulatory system of countries from across the world, providing information and insight on up-to-date regulatory systems. Comprehensive information on dozens of energy regulatory systems were available at the end of the course that would be difficult to keep track of as an individual expert or instructor. The fact that course participants could attend the course from around the globe was an advantage in that it provided information on countries that might otherwise have been difficult to access (for example, due to language barriers, no familiarity with sources of knowledge such as newspapers to keep track of, no familiarity with national and local institutions and policy). Learners were thus encouraged in the forum, live classes and in the teamwork to interact and contribute their knowledge and expertise. They were also involved in the peer assessment of the final essays.

Learners were thus involved in the creation of knowledge on energy regulation and policy (learners as co-creators of knowledge and horizontal learning), also participating in the peer assessments of the two big course tasks (see also Box 4.1).

A New Training Portfolio

When starting to move the annual training of the School online, we did not know exactly what the product would look like in the end and whether it would be embraced by those we thought should be interested (academics and practitioners working in the area of energy regulation in the EU and beyond). Also, the launch of a new offer within the School’s training portfolio of residential offers was risky as the online offer was a cheaper – though at the same time lighter – version of our annual training which continued to be offered at the School.

The new balance we had to find among the new existing course offers had one advantage though: it kept us constantly alert as to continue improving the quality and making sure our trainings were of relevance to potential course participants: Each new course had to provide additional value in the School’s course portfolio. We today have evidence that our first online course indeed did not put at risk the traditional annual training, but simply opened the training to different participants across the globe.

Encouraged by the first positive experience the School started to develop new online course offers providing alternative forms of learning for those interested in specific topics and shorter formats. These new online courses aimed at reaching out to professionals willing to get an insight into a new topic or to update their knowledge, rather than providing a broad induction to young professionals as was done in the first online course. The constant updating of knowledge for energy professionals is indeed of crucial importance, as new regulations, research on, for example, market dynamics or the

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8 For example, after some editions we decided to move to a new learning management platform that allowed to add a series of tools and made the navigation for the learners more user-friendly. One important improvement was that learners thanks to easy-to-use icons could more easily interact and collaborate with each other. The new and easy design of the course environment substantially increased the communication among the learners. We substantially reduced the cognitive load for course participants by making the technical environment more intuitive and easy to use, and learners could thus concentrate more on the content of each module than struggling with small navigation or technical issues.
(adverse) effects of new policies, and new discoveries (for example, shale gas) challenge the existing repertoire of knowledge and practices sometimes at a very rapid pace.

As the aim of the course, as well as the backgrounds, interests and knowledge levels of the participants were different, the course development team went on to explore how the online learning content could be designed so as to be more flexible, dynamic and personalized.

The new course design first aimed at responding to the individual needs of each professional learner and how the course could respond to these changing needs ‘on the fly’, as the courses were already running. The course design that was developed allowed us to respond to different learner’s knowledge and experience, as well as how this changed during the course run. In practice, it meant that the course content was dynamic – the weekly progression changed in accordance with what the instructors learned about the learners and their previous knowledge as well as the gaps that seemed to still need filling. The course facilitator employed data analytics provided by the learning management platform but also used formative assessment activities to allow the learners to test their knowledge.

Second, not only was the course design more flexible, learners could also choose among different learning paths, deciding on their own learning objectives and thus take ownership of their learning. Depending on whether participants just wanted to get a quick overview of the topic or a more detailed insight or in-depth knowledge learners could choose among three different learning paths with different levels of engagement and learning activities. Each learning path would give the learner a different badge:

**Level 1: ‘Investigator’ learning path:** The investigator learning path (lightest level) allows the learner to acquire some fundamental knowledge on the topic by watching the videos, doing some readings and taking feedback quizzes with instant feedback.

**Level 2: ‘Advocate’ learning path:** The advocate learners are expected to complete all level 1 activities and engage in the forum discussions and live classes and engage with other experts or learners.

**Level 3: ‘Master’ learning path:** These master learners are expected to complete levels 1 and 2 and to work on an individual or collaborative policy-document on a real-life project. At the end of the course, the masters will discuss their findings with experts and decision-makers who will give a feedback on their work in a live session.

*Source: Authors.*

**Figure 4.3 Ownership and personalized learning paths: three levels of engagement, learning activities and corresponding badges**
The new online courses are not graded. Instead, they give instant feedback on how learners are doing in the form of badges. The badges can be shown in participant’s profile and shared outside the course (Figure 4.3).

The most demanding engagement (master level) culminates in an online event where participants discuss their policy paper with experts and decision-makers from the European Commission and other senior energy professionals. This activity brings policy-makers and learners together to work on real-life cases the European Commission is currently addressing. As the course director Professor Leonardo Meeus points out:

It is often said that the best way to learn a topic is to teach it; in my experience at Florence School you learn even more if you organize an online training on a new set of market rules and regulations that everybody is struggling to catch-up with; only an online training can mobilize 140+ professionals from 25+ countries on a new topic and also give all of them the opportunity to contribute to the course text, forum discussions, panel debates, and live classes with academics like me to moderate, challenge and summarize the discussions. (Interview March 2018)

One the one hand, this activity makes the relevance and meaning of the learned content tangible to the learners, while on the other hand it provides the policy-makers with ideas and detailed feedback on policy proposals they were currently working on. Often, in these discussions, the traditional role of instructors, experts and learners is challenged: Policy experts or instructors are challenged by learners who might be experts in some areas; policy-experts contribute to the ‘teaching’ as they might add context-specific knowledge or constraints ideas would face in practice; or, as Professor Meeus points out in the quotation above, these online courses are also an opportunity for the course director to learn about the subject and accordingly review research questions and outputs. These online discussions become a space where information is updated and composed and a shared understanding of problems negotiated. The new course design thus emphasized the collaborative, instantaneous (real-time), and community aspect of learning in which the roles of the instructors, learners, experts and researchers become blurred.

How the roles of learners, experts and instructors were blurred and learners became co-creators of knowledge is also illustrated by the course textbook. Course participants found an initial (beta) textbook prepared by the researchers involved in the course as instructors. This handbook was not designed as a fixed text but was conceived as an open guide that was developed during the course by the participants. Participants were invited to contribute to the course text making notes, changes and integrations. Based on this feedback the course instructors developed the text into a book (including all the contributors in the references) and published it in open access (Meeus and Schittekatte, 2018).

The new online courses thus further expanded our training portfolio at the School, reaching out to different types of learners, and allowing for new forms of collaborative learning. In practice, this also meant (and still means today) that course formats and designs continued to change in order to respond to what works and what does not work well. As of 2018 the school offers six different online courses (in addition to nine residential or blended trainings) and as shown in Figure 4.4 since 2017 the majority of the training offered at the School is online, with more than 5000 person-days of training in 2017 and rising.
Moving the Executive Training Online: Challenges and Responses at the School

The design of a new course that was initially developed with the intention to share our knowledge from our flagship training much more widely not only resulted in a high-quality and exceptionally successful online offer (completion rates, share of certificates of excellence) and an exceptional level and pace of innovation but also started several dynamics at the School that are still ongoing today. The School developed new ways in which to share and create knowledge through its executive training offers, in line with some of the most discussed pedagogical approaches existing in higher education today, such as collaborative creation of knowledge across borders and crowdsourcing, learner-centred and horizontal learning, ownership of learning and the re-definition of the roles of instructors, learners and experts. Not only were the roles of learners, instructors and experts blurred, but boundaries between the academy and the world of practice were made shared spaces, in which to inspire, critique, and challenge knowledge on energy regulation. While the journey of pedagogical innovation at the School is still ongoing, practices of knowledge creation and sharing have already been deeply transformed at the School laying one of the many new bricks to create a different academy in the 21st century.

![FSR Training Courses 2017](image)

*Source: Authors.*

**Figure 4.4** Total number and share of person/days training at the school in 2017 in either online or residential/blended trainings

A dynamic started that deliberately introduced the team, the teaching faculty and the learners to a different kind of thinking about the role of training for knowledge transfer and creation. Training participants were introduced to tools and practices that would allow them to contribute their specific expertise and build knowledge in collaborative efforts with other learners and instructors around the globe.

While no single activity or approach was revolutionary in itself, the school's training offer today integrates some of the most innovative pedagogical tools and approaches into its training portfolio.

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9 It also triggered a dynamic to improve the quality of teaching at the school, residential, blended and online courses to varying degrees. As we started to move away from a lecture-based course design when developing the first online course, the school had to experiment with different online teaching and learning activities that did broaden the teaching tool box used at the school. Alternative teaching and learning activities could now also be used by instructors for teaching in other (residential) courses of the school and thus helped setting new standards of good teaching and gave examples to other teaching faculty about the array of teaching activities and their benefits for the teacher and the learner. Moving online thus did not only provide a new type of course offers for different learners, but also questioned and thus improved residential teaching practices.
When developing the online courses we encountered what we believe to be some of the typical challenges in a higher education context when developing online courses and the pedagogical opportunities these offer.

**Challenge One:** Within higher education there is a widespread scepticism about technology and online tools. They are either simply considered a fashionable tool that does not in any way contribute to the educational mission of universities and only puts a useless burden on the already heavy teaching load\(^\text{10}\) or rejected in a more pronounced way by assuming that online tools undermine the typical deep and critical thinking of higher education because of their superficial, short and distractive characteristics (for a critique see Furedi, 2015). Online tools are thus not necessarily welcome by all teaching faculty and strong opinions on technology exist that still too often keep the door for innovation shut.

**Challenge Two:** Most of us are convinced that we know the best way a topic, on which we are experts, should be taught. Being experts on the topics we teach, with a substantial teaching and research record, and having taught a topic for many years, in some cases decades, we are not necessarily convinced that another person can offer valuable advice on the way we organize our teaching. As we often learn through imitation and role models most of us adopt those teacher-centred teaching approaches that we were exposed to when we were students ourselves, and (teaching) habits are difficult to change (Duhigg, 2012).

**Challenge Three:** Finally, public universities do not necessarily have the (financial) incentive to innovate and/or improve their university teaching, or if they wish to do so, do not have the financial means to invest money in (risky) projects with an unclear output. Many traditional universities do not necessarily see any benefit in undertaking out of the box activities with questionable legitimacy.

The challenges introducing online teaching and learning activities are thus manifold: assumptions about the adverse effects of technology on student learning; the burden on the time commitment of academics (researchers) who already spend about half of their time on teaching activities for which there is still little institutionalized reward; teaching habits and expectations by students (or learners) of what a typical university professor (or instructor) is supposed to do. These challenges are by no means the only challenges when it comes to innovating teaching and learning in higher education but they describe some of what we believe to be typical challenges within many traditional higher education institutions.

Which factors do we believe contributed to the setup of new innovative training offers at the School that might guide other institutions in their attempt to harvest the opportunities offered by online tools and activities for higher education teaching and learning? In addition to a substantial financial investment in the training area – including the importance of setting up a team of knowledge workers (course editor, course facilitator, and multi-media team) and the nurturing of three cultures within the School discussed in more detail in Chapter 10, we believe that two characteristics of the School’s approach account for the success innovating the school’s training offers.

The first characteristic is, that the development of online courses was embedded in a broader digital strategy of the School, which also comprised the way research is communicated and the way the research process itself is designed (see Chapter 10). This allows all those working within the School (multi-media team, knowledge editors, researchers/instructors and managers) and for the School (external instructors) to share a broader vision and be on the same wavelength. It also allows for activities developed in different areas of the School to constantly contaminate each other: new

\(^{10}\text{In for example Teixeira (2017) who reports that academics in Portugal spend more than 50% of their time for teaching activities, without these activities being rewarded within the institutional; strategy.}\)
practices developed in one area (for example, webinar to share early results of a research project) inspired other areas to use the insights of what worked and what did not work online.

The second characteristic of the School’s approach is the way we addressed the three challenges described above. First, the online course was used as an opportunity to join together the different kinds of expertise available at the School to work on a common project. Right from the beginning, we set up meetings where all involved in the project (instructors, multi-media experts, course editors, course facilitator and the director of training) contributed with their ideas on an equal footing. We started from those teaching practices that instructors were most familiar with (lectures), to then develop and discuss more engaging online video lecture formats and later the need for additional teaching and learning activities. It was a collective learning experience that tried to keep everybody involved, taking into account the different investments each instructor was able to make in developing different teaching practices, as well as, for example time and technical constraints. The fact, that neither the instructors nor the course editor and director had a pre-defined concept of how the finished online course should look like, was an advantage. It allowed us to conceive of the online course development as a project ‘in the making’ where all involved first had to learn and understand each other’s area of expertise, and importantly, the various constraints while keeping the aim for ambitious learning objectives as a guiding principle at all times.

The role of the course editor, combining a good understanding of the content to be addressed as well as experience with online pedagogy was key to limiting the burden on the instructors during the course development. This double expertise allowed to draft learning activities, introductions to the modules and a set of course material, to be proposed and reviewed by the course instructors. During the course run instead, the active support of a course facilitator, acting as a bridge between the instructors and the learners again was of importance for limiting the teaching burden on the instructors and guiding their attention to the most essential activities and interventions.

Finally, we believe that two external factors favoured the innovation of the training area: First, the necessity to find an audience for the new course offers (willing to pay for the new offer and thus contributing to the financial sustainability of a project that entirely depends on external funds). Second, the necessity to develop a course that would be valued by external stakeholders and experts as academically robust and practically relevant. The fact, that the School was perceived as a core provider for energy regulatory training, combined with the increasing visibility the School had gained thanks to its communication efforts (see Chapter 10), provided a push for the School’s training area to not lag behind.

CONCLUSION

While many universities today have introduced online course offers, we believe the potential of widening access, improving the quality of teaching and learning, and supporting a transformation in the approach to how knowledge is created and shared, is far from being fully harnessed. As we have tried to illustrate above, online practices in teaching and learning offer an array of opportunities to make knowledge more open, accessible, communicative and instantaneous – all potentially offering an enormous benefit to societies with a need for pervasive high-quality knowledge. Online learning makes it possible, for example:

● To connect the minds of learners from anywhere in the world and give them access to knowledge stored far away (in people’s minds or in online course material) they would otherwise be excluded from;
● To train many more people at the same time: for example, in only three years a single course trained about 600 people from more than 76 countries, something that is difficult to achieve in the classroom;

● To crowdsource knowledge so as to find solutions to problems, bringing together experts and learners from a variety of institutions, difficult to gather in a room at the same time (academics, policymakers, regulators, private sector and other experts) and to work on these problems without a major time-delay;

● For learners to add relevant context-specific knowledge to theoretical concepts from any part of the world and thus become co-creators of knowledge.

Developing online course offers at Florence School of Regulation triggered a process for thinking more deeply about what learning is, when it happens, and what the role of the learner might be today, as we are challenged to continue to update our knowledge and question our assumptions our entire (working) life. When aiming to ‘make people think and act differently’ in a higher education context (for example, questioning one’s (tacit) assumptions, thinking from different angles, coming up with new conceptual understandings or questions) we essentially need to get as many people as possible hooked on learning who have traditionally been excluded or marginalized within these teaching and learning spaces. Online tools and activities offer a path towards an organized (edited) but self-determined learning, learning about topics that are relevant and thus meaningful to the learners and within a network of others who teach and learn.
REFERENCES


Chapter 5 - Leading innovation: digital education in a traditional university

Jeff Haywood

LEADERSHIP AND LEADERSHIP FOR INNOVATION

As has been reviewed in earlier chapters of this book, the world within which higher education operates is changing steadily and sometimes rapidly. External forces now impact universities across the world, many of which have existed relatively unchanged for centuries, and are shaping their thinking and actions (Bastedo et al., 2016; European Union, 2015; Rizvi et al., 2013; Zemsky, 2013). Short-, medium- and long-term strategic decisions are having to be taken with limited hard data on which to base those decisions (so-called VUCA, Bennett and Lemoine, 2014), and these place new demands on university leadership and management as well as demanding new skillsets. Unsurprisingly then, the topic of university leadership has become an increasing focus of attention both by academic researchers and writers, and by universities and their funders/regulators.

Academic leadership, especially for ‘turbulent times’ (Dopson et al., 2016; Jones, 2011; Middlehurst, 2013; Gayle et al., 2003; Krull, 2012), is a subset of the attention paid to leadership more widely, especially for commerce and industry, and both share common features. In the business sector there is a wide range of publications on ‘how to be an effective leader’ (Adair, 2009; HBR, 2011; Owen, 2017) and how best to nurture leadership within the organization (‘leadership development’; Adair, 2005; Day et al., 2014; Avolio, 2010). In parallel with these practical guides there is a large academic and research literature that explores models of leadership and leadership in different contexts (manufacturing, public sector). Given the pressures on modern business, including globalization, digital technologies, and recession-driven income reductions, a prominent topic is leadership for innovation (Deschamps, 2013; Deschamps and Nelson, 2014).

Contrasting with the well-known ‘hero CEO’ model of leadership of the late-20th century, itself now partially discredited (Senge et al., 1999), the focus of leadership models has begun to embrace the idea of ‘distributed leadership’ (sometimes called ‘shared leadership’) (Dinh et al., 2014; Bolden, 2011). Distributed leadership first took root in academic leadership thinking (Jones et al., 2012, 2014) and has more recently spread into mainstream thinking in the business leadership sector (Mihalache et al., 2014). It clearly resonates strongly with organizations with high-level knowledge workers, like universities, where a relatively flat hierarchy exists, and where world class expertise and recognition can (indeed should) be found at all levels.

In response to the significant external pressures being felt by higher education institutions in the US, Australia, New Zealand, and the UK in the last years of the 20th century, a number of commissioned and independent reports and books were produced that addressed these challenges to university leadership and proposed approaches, including new ways of thinking about educational leadership (Scott et al., 2008; Bolden et al., 2012). (In parallel, similar re-thinking was going on in the school sector...
Some national or regional agencies were set up to help universities to develop their leaders, both existing and aspiring (see for example, www.lfhe.ac.uk; www.herdsa.org.au; https://podnetwork.org). This change was slower coming in continental Europe and Asia/Far East, which was partly due to a buffering of external forces by the state (for example, lack of private HEIs, slower impacts of digital technologies, less internationalization, less reliance of HEIs on earned income). Autonomy issues, that still beset HEIs in many European countries (Pruvot and Estermann, 2017), slow-moving and sometimes conservative state regulation (Haywood et al., 2015) and rotating senior management positions (Rector, Vice Rectors), perhaps made the locus of responsibility for change less straightforward than for the US, UK and Australian university sector.

I shall not attempt to review the whole field of academic leadership and leadership development but will point to a few sources that have influenced my own thinking throughout the period when we were introducing digital education across the University of Edinburgh. These sources may be of use to others wishing to follow a similar path, in conjunction with the case studies and lessons learned presented in this chapter.

- Despite the widely-used term ‘change management’, I prefer to use the term ‘leading change’, following the thinking of John Kotter. His eight organizational steps for change, including creating a sense of urgency (in a university with generally slow changes to its educational provision) have been influential for me (Kotter, 1998; 2012);

- Universities clearly do have distributed leadership (Jones et al., 2014). It spans all ‘levels’ and must be drawn on and brought on board, not necessarily all at once in a large organization, but at the same time, vision and commitment from senior levels is vital for change projects (Cummings and Worley, 2014);

- Universities have multiple ‘businesses’ and how these are carried out varies by subject area (or at least broad domain). Becher’s academic tribes (Becher and Trowler, 2001) must be taken into account, and a way found to create university-wide (or College-wide) scale-up of educational innovation whilst at the same time letting subject areas adapt the broad objective and design to their own pedagogies and opportunities;

- I have found value in the resources for university leadership which are produced by the Leadership Foundation for Higher Education, set up with the foresight of the UK HE funding agency (HEFCE) in 2003. Its case studies and research studies have been useful in developing our own leadership paths (Bolden et al., 2012; 2015).

In addition to awareness of the importance of leadership for major change projects, the following models and approaches have been useful to us at the University of Edinburgh as we plotted our course into digital education over the past 25 years:

- Gartner’s Hype Cycle (Gartner, 2017) describes the pathway taken by new technologies and developments. This helped us to think about whether what we were planning was ‘bleeding edge’ or adoption of what was becoming mainstream in the world HE sector (although it may still be innovative for us). This influenced our arguments significantly (arguing to be a leader in the field versus arguing to keep up with peers);

- Innovation across a large organization is a slow process and in universities as well as business and wider society, the diffusion of innovations model applies (Rogers, 2003). Thus, innovators and early adopters were key to what we wanted to do, as a lot of pilots and explorations had already taken place before we put any of our large developments into place. I also personally avoid the use of the term
'laggards' as this is a pejorative label, when ‘justifiably cautious’ might sometimes be more applicable to those Schools and colleagues who come on board later;

- We aimed to be prepared for strategic opportunism (Isenberg, 1987); it pays off. Whether it is the option to take up a large opportunity (for example, the appearance of MOOCs) or a small one (a new champion arrives in the university with an innovative idea), being open to new opportunities is vital and overly rigid plans can be a hindrance.

ABOUT THE UNIVERSITY OF EDINBURGH

The University of Edinburgh is one of the oldest in the UK, founded in 1583, with a long tradition of providing high quality first and higher degrees in most subjects, including all professions. In the academic year 2015–2016, student enrolment was 37,500, total staff complement was 13,500 and its turnover was £900 million, with £250 million from competitive national and international research grant awards. The university is ranked number 19 in the QS World Rankings, and in the top five in the UK. The university has very strong international relationships, with staff and students from all countries of the world and 40 per cent of students are from outside the UK. It is an active member of LERU, Universitas 21 and the Coimbra Group.

In 2002, and with some modifications since, our structure and operations were streamlined from 11 Faculties and 130+ Departments into a six unit structure of three academic Colleges, containing a total of 23 academic Schools, and three university-wide Support Services, one of which includes the Principal’s Office (Principal = President or Rector). I cannot underrate the importance of this development to strategic decision-making: it gave us a renewed leadership, governance and management system that was fit for purpose for the 21st century. Some of our peers have since modelled themselves on this university design.

Briefly, our governance model is one of devolved authority guided by centrally-agreed policies and strategies. Senior officers are assigned responsibility with budgetary authority and supported by committees (in Schools, Colleges, and at top level), with decisions ratified by Senatus (academic affairs) or University Court (administrative affairs). Many senior officer positions (academic and administrative) are fixed-term appointments, the most senior after open international competition, and none are elected. Increasingly, middle-level posts, such as Heads of Schools, are now also fixed-term contracts that are advertised openly rather than being filled through internal, rotating, appointments. This model offers clarity on the loci of responsibility for all areas of business.

Achievement of the University’s objectives, as set out in its overarching Five Year Strategy, is addressed through a three-year rolling annual planning process that begins at School and Service Unit level, works up through the Colleges and Support Groups, and produces a single accepted University three-year plan with targets and costs. Major project funding beyond the annual funding capacity of a College or Support Group (for example, for a building or a major IT system) is possible by drawing on central strategic funds. Such projects are led by a member of the SMT and managed by experienced staff working with the University’s project management protocols and toolkits. External formative and summative evaluations are the norm. Links to some of the key resources regarding strategic projects at the University of Edinburgh can be found here:

Risk appetite: [http://edin.ac/2hz9rWo](http://edin.ac/2hz9rWo).

Major strategic project governance: [http://edin.ac/2hAp00c](http://edin.ac/2hAp00c).

Project management toolkit: [http://edin.ac/2zNds3I](http://edin.ac/2zNds3I).
A BRIEF HISTORY OF EDUCATIONAL TECHNOLOGY AND INNOVATION AT THE UNIVERSITY OF EDINBURGH

The University of Edinburgh has a well-developed eLearning infrastructure, guided by a strategy that links to the university’s top level strategy. Over 25 years, we have invested heavily in eLearning tools and support, regularly benchmarking and valuating our provision, and conducting research into technology-enhanced pedagogy. Our understanding of how to make these practical developments successful is based upon research over many years into online learning (for example, the Digital Education Research Group at www.de.ed.ac.uk) as well as a strong international benchmarking network of colleagues in similar advanced positions with respect to educational technologies.

Our vision for teaching and learning that has technology as a core element of both design and delivery was set out around 1990, when it became clear that IT was moving to greater maturity, communications would increasingly be carried out through it, especially in globally-operating organizations and that learning by doing would be better than trying to learn through watching others. We could see that educational innovation was going to contain technology and that technology offered affordances that might remove or minimize current challenges for us of increasing scale of operations, increasing mobility of staff and students, and designing education for the future rather than the present. We wished to be a leading university in this area.

1992 – Email for All

In 1992 we began with a programme called ‘Email for All’ in which we aimed to offer an email address to all staff and students so that they might communicate with each other and more widely with colleagues and friends. This was our first university-wide initiative with educational technology and we learned some valuable lessons that served us well in the future. Dr Hamish Macleod and I had to contend with: a general wariness of change, including ‘the traditional face-to-face methods are better, a fear that students would find electronic communication ‘impersonal’ and local desire to be distinct against a uniform system (‘won’t work here’). IT staff (including the central IT service, who were significant gatekeepers) also weighed in with their preferred choice of email system, which resulted in us initially having several, although over time this was reduced steadily to a single email system. We learned about the importance of face-to-face and self-paced training, of working with early adopter Schools and influential academics to get face validity and proof of concept and we found that our customers (that is, students) were powerful allies and should always be on board early. We learned to be patient and willing to listen to all arguments, no matter how many times we had heard them. Over time we built up trust and were helped by the lack of disasters (although these did come later in other projects!).

1998 – Central eLearning Unit

By 1998, it was clear to those of us who scanned the horizon, especially that in US HE, that learning technology (later variously eLearning, Technology Enhanced Learning, Digital Education) was going to be an essential component for all universities, and we felt that the University of Edinburgh should be in the vanguard. In 1999, this argument was accepted and the SMT agreed to finance a new small eLearning unit, which later became the eLearning Team plus Learning Spaces Technology in the central IT and Library Support Group. Over the last 20 years it has provided: a robust VLE for over 100,000...
simultaneous users; online assessment systems; an e-portfolio; personal response system (‘clickers’); and a wide range of smaller innovations. Alongside this the IT teams have created a substantial single staff and student portal (MyEd), which provides access to almost all digital systems for teaching, research and administration, and the library teams have developed a massive digital library with millions of e-journals and e-books, advanced search tools, open access repository and a course reading list technology.

The initial eLearning unit was the basis upon which later educational innovations using technology were built. Establishing this new unit, and the strategic area which it served, taught us a lot about business cases for educational technology and innovation: the location of key senior sponsors to support the business case at SMT; hard evidence of the progress peer universities were making, especially those in the US and Australia; starting small but with a path to growth; and finding key academic voices who needed this kind of reliable service to underpin their own evolving teaching methods.

Around this time also some Schools (for example, Education, Law, Medicine) were already investing in educational technology, some local support units were being set up and individual academic staff were experimenting with new approaches to learning and teaching. This was very positive in that it proved the point we wanted to make in our business case, as these Schools were seeing need and opportunity and investing, but it also provided a challenge for us in the central service as this made some of our early adopters less than willing to join a university-wide central venture, preferring their local solutions. The lesson for us was to seek a constant balance between central versus local activity, applying common standards when we could and always looking for cross-talk and ideas sharing when not. This thinking resulted in us establishing an important community of practice (CoP – Wenger, 2000) for academic and support staff (eLPPF) and an annual elearning@ed conference, now in its fifteenth year.

2003 – Principal’s eLearning Fund

By 2003, it was clear that the range and diversity of eLearning applications and approaches available to us was expanding rapidly and that we needed to harness the exciting ideas of our academic staff to create large local developments with alignment to College objectives and with the potential for university-wide scale-up or at least lessons for the adaption of them. We chose to use a competitive funding model, run university-wide, but where all proposals from academic staff needed School approval plus College ‘strategic alignment approval’ before being considered. Centrally we would coordinate and learn, seek lessons for wider use and scale-up any suitable opportunities. This fund, of £3.8 million over five years was called the Principals’ eLearning Fund to signal its top-level support and approval. We funded 61 projects and applied formative and summative evaluation to enable us to demonstrate value for money and good programme management.

2010 – Distance Education Initiative

By 2010, it was clear that fully online distance education was maturing beyond its early exploratory phase and was a viable approach for universities with a strong educational technology infrastructure. It would not remain the preserve of specialist open universities or distance education providers. We therefore made the case for a major investment in university online degrees, the Distance Education Initiative (DEI). The way we approached this large-scale innovation is described in Case Study 1 below.
Suddenly, in 2012, the first Massive Open Online Courses (MOOCs) were launched, in California, with great press interest and some (wild) speculation about the imminent demise of the traditional university (see the bibliography for this at http://bit.ly/2zOkDcl). We decided that this was an opportunity which we would take early in its development, that is, in the Gartner Innovation Trigger phase (Gartner, 2017), and our decisionmaking and leadership processes are described in Case Study 2 below.

2015 – Open Education

By 2015, we could see that we were entering an era of Open Education, encompassing open educational resources (OER), MOOCs, hybrids between these, plus emerging forms of educational offerings that could be made openly available and openly licensed.

This is not the end of the story. We are now embarking on an implementation of learning analytics and reflecting on what teaching in the University might look like in the near to medium future.

The following two case studies show in more detail how we put into practice the lessons of leadership discussed above.

CASE STUDIES

To exemplify how major digital education developments were initiated, managed and mainstreamed in the University of Edinburgh, it is instructive to look at two case studies; namely why and how we developed (a) a substantial portfolio of fully online Masters level courses and degrees and (b) a wide portfolio of MOOCs on three different commercial platforms. I shall look at what we did through seven ‘lenses’:

1. senior level buy-in;
2. investment processes;
3. balancing local and university-level aspirations;
4. incentives for Schools and academics;
5. targets and return on investment;
6. maintaining quality in education;
7. training for new modes of teaching and learning.

These case studies analyse major changes to the traditional/normal academic and support service operations and they required significant buy-in from a wide range of individuals and groups. Not all of that buy-in came immediately or even easily. From these case studies I shall then draw out some of the lessons that we learned, and that are guiding our current thinking and actions.

Case Study 1: Fully Online Masters Degrees and Courses
The decision which we took at the University of Edinburgh to begin to offer fully online degrees is an example of ‘at-our-own-pace’ decision making, that is, one that was not forced on us by external circumstances nor one where speed was of the essence. (This contrasts with the case of MOOCs discussed next.) One trigger for starting to consider fully online degrees came from our desire to fulfil our mission of offering educational opportunities to as many people as possible, coupled with our realization that more potential Masters students were asking us about online study, as residential education was not an option for them for career, cost or family reasons. The other trigger was the maturing of online education technology and pedagogy, our considerable experience with the use of technology in our residential degrees and greater access of potential students worldwide to reasonable bandwidth Internet.

Through preliminary work done by Professor Sian Bayne in Education and Professor David Dewhurst in Medicine we had carried out a number of explorations of fully online courses, and these had given us confidence that we were in a strong position to embark on a major development in this area. (Small-scale pilots and innovations at local level, with collaboration and involvement of central services, which can then lead to university-wide implementations, has been an innovation-to-mainstream model which we have followed since the early 1990s. It requires good communications and relationships between staff in both academic units and support services and a preparedness to be flexible and understanding of local and university-wide aspirations and challenges.)

After informal discussions at senior level, and with academic staff who were already innovating in online education in 2010, a formal proposal to invest in the creation of a full portfolio of online degree programmes was brought to the senior management team (SMT) by the Vice Principal (JH) leading the eLearning, Library and IT Support Group. After approval in principle, this plan for a Distance Education Initiative (DEI) was refined and put to the senior finance committee and then, after further refinement, to the University Court for approval of funding. As this was to be a strategic project (we define projects according to cost and impacts) it had to be led by a member of SMT and the lead was assigned to VP/CIO/Librarian (JH). There would be a DEI Steering Committee to guide the VP in leading the project and regular reporting to SMT and to Court on progress. However, this was really a major educational innovation project rather than a technical process innovation and so course academic approval was needed as well as the financial business approval of Court. Thus, there was a parallel academic consultation with the senior learning and teaching committee and quality assurance committee and especially the senior staff leading these areas. Their approval was ratified at University Senatus.

These processes created buy-in for the vision and the approach, at senior levels at least, although this did not automatically mean immediate buy-in by all Schools and by all academic staff. This wider process was clearly going to take time and might never be complete, but in a devolved and large university acceptance of that diversity is part of good leadership. We also decided that teaching on fully online courses was going to be ‘normal academic business’ in the future and so everyone needed to be involved not just a few innovators. We did not want to partition it off into a ‘special division’ (a skunkworks, see Wikipedia, 2017) which generally do not scale up across the organization (Blank, 2014) but wanted to locate it in Schools with existing academic staff.

Two attributes of the DEI development were core to its acceptance by the University: it had to offer at least as high a quality of education as our traditional, on-campus, education offered (‘same quality, different format’) and it must at least break even financially after its first five–six years of operation.

The key to unlocking strategic funds in the University of Edinburgh is to be able to demonstrate clearly, and with evidence for predictions, that there will be tangible benefit to the University from investing in a particular development. This applies regardless of whether the development is a building or an
educational innovation. There must be a positive return on investment (RoI) in the short, medium or long term. For the DEI development, this return was to increase student recruitment from around the world with fee income to match, and (less critically) enhancement of the University’s reputation for educational innovation. This raised interesting questions, which were debated to agreement: how many students might we realistically recruit per annum? What fee levels should we set for this new class of student? At what degree level should we offer courses? What investment level was appropriate to support Schools to design and deliver new online degrees to a self-sustaining level? What incentives might result in academic Schools seeing this as a viable component for their academic and business planning processes?

Our answers to these questions, which were incorporated into the approved DEI Plan, were that: we were aiming for the same number of online Masters students as residential Masters students by around 2020, that is, perhaps 8000–10,000 (mainly expected to be part-time in contrast to residential students); all online programmes would be at Masters level (which we felt was an area of real strength for us and of growth internationally); none of these students need ever come to Edinburgh for any part of their study; with a single fee for each degree programme regardless of the location of the student (many of whom were mobile anyway) and that fees would not be lower than residential programmes (to prevent an image of lesser quality). In order to achieve overall as well as local financial success, each degree programme would need to aim to recruit at least 100 students per annum and their business cases would need to reflect this, as would the pedagogical design of the courses. (At the time, this number was well above the typical recruitment of Edinburgh Masters programmes.)

Funding would be given to Schools through a competitive process analogous to that of research funding, with matched funding expected, course design, academic and financial business cases made and annual reporting mandatory. The investment level was set at £1 million per annum for five years, and a new, fully online Masters degree might receive around £200,000 funding over a two–three-year period. There would be an annual funding round. The aspiration was that eventually all Schools would participate but it was left to them to decide when they were ready, albeit there was ‘strong encouragement’ from the SMT and there was support and advice always available. Some Schools were already identified as early adopters (Education, Law, Medicine, Vet Medicine) so the first of these degree programmes would not be hard to define. The Steering Committee, composed of representatives from the major areas of the university plus some local online education experts, made the decisions on which proposals to fund and when to negotiate different funds or outcomes and it monitored DEI progress.

To encourage Schools and their academic staff to adopt these new degrees as part of their normal portfolio of work, we needed to reduce barriers and provide incentives. Finance is always a big issue in universities – there is more that can be done but money is always rate limiting. The DEI programmes provided (quite generous) funding to Schools against their business cases with which they could buy out current academic staff from existing activities to focus on the new online programmes or could recruit new academic staff (initially temporary) with the right skills and interests. In addition, for the initial period, there was no tax (top slice) on the School fee income from the online Master students (usually this was 20 per cent). In addition, the Library had some funding to enable them to purchase or clear copyright on texts needed online; there was a new, more agile and attractive, digital learning environment than in the main University system, and there was extra help with marketing. Training for new pedagogies and technical support were enhanced in a dedicated team brought together from the Digital Education Team in Information Services and relevant staff from the University’s educational development unit, the Institute for Academic Development (IAD). They created a community of
practice (CoP) for the academic and support staff involved in the online degree programmes so that experiences could be shared and good practice disseminated.

In the event some support services also needed additional investment, which was handled by a light touch version of the School funding process, except that funding was substantially smaller and in smaller allocations. Services which needed help were mainly those where large investment was needed (for example, eLearning for the new VLE) or those where face-to-face services had to be radically re-thought (for example, Student Counselling, online Open Days for ‘visiting’ potential students, English Language training and testing).

An influential development for some of the early adopters was that, around the same time as the DEI was introduced, new thought was being given to the criteria for promotion of academic staff, a process which until that time had emphasized research and had given little guidance to applicants for basing their case for promotion on teaching innovation and quality. The new criteria, which had been developed with input from academic staff with substantial experience in advanced pedagogy and leadership in educational change, enabled academic staff to use the innovative work that they did under the DEI programme to add to their case for promotion, and over time an increasing number of staff were promoted to more senior posts. Some of these promotions were inside the University of Edinburgh and some academic staff gained more senior posts at other universities. Everyone involved in educational innovation was encouraged to publish papers, speak at conferences, apply for research grants in general and subject-specific higher education and to develop a scholarship of teaching and learning. Examples of how this promotion process is organized can be found on the university’s website at http://edin.ac/2hBYkMv.

The choice of degree subjects to offer in their online Masters was up to the Schools; there was no compulsion to offer particular programmes and so although this meant that there was good ownership of what was produced sometimes these courses proved less attractive to potential students than other subjects might have done. This was accepted as a necessary part of bringing all Schools on board. As it turned out some subjects recruited well that might not have appeared a priori to be good choices!

Like all universities with strong devolution of authority and decisionmaking, balancing local and university strategic aspirations was a challenge for the DEI leadership. University-wide annual planning and budgeting is not only about the future but also acts as a focus for seeking evidence of progress in the past year. Thus, for online degrees, the addition of identifiers for online students to the student record not only enabled us to offer more appropriate help to these students and to ensure their fees were untaxed for the Schools, but also to report to Committees and the SMT on progress, School by School. This reinforced of the expectation of the SMT that all Schools would come on board, and over time more robust encouragement and advice was offered to those Schools that were most cautious about engaging. Schools were already expected to increase their Masters student numbers in order for the University to reach its targets in this area and the online Masters students were seen as part of this drive.

By the end of 2016, we had a portfolio of 66 Masters level degrees (MSc, PgCert, PGDip) offered by 17 out of 23 Schools. Schools in Science and Engineering found it hardest to re-think their education into this new format, partly perhaps because they were less accustomed to offering taught postgraduate degrees anyway. Medicine and Veterinary Medicine was most prolific, with 36 degree programmes from five Schools.

We had recruited a total of close to 10,000 students, and in 2016–2017 had around 3000 enrolled, almost all of which were part-time. This compared to around 6000 residential Masters students,
almost all of whom were full-time. Approximately 50 per cent of the online students were from outside the UK, distributed widely across the world. Their satisfaction with their online educational experience was very high and equal to that of residential students, when evaluated using external, independent, surveys.

Lessons learned

The DEI Phase One ran from 2010 to 2016 and our report at the end of that period gave data about progress made, but we also documented the challenges we still faced, which required some further time, investment and re-orientation to resolve. The most difficult aspect of the DEI programme had not been designing and delivering online degrees to high quality, nor finding interested academic staff and Schools wishing to innovate, but designing effective marketing strategies that would bring in large numbers of applicants with the right qualifications. The University’s traditional recruitment channels just did not reach these new audiences of working adults, well separated from academic life and contacts. The few degree programmes that were successful in recruiting large numbers of students at the outset were those with strong reach into the relevant professional communities where continuing professional development was the norm.

Postgraduate medicine is one such area and the degree programmes targeted to this community, in partnership with the Royal Colleges of Surgeons and Physicians of Edinburgh (RCSE, RCPE), were and remain very successful in attracting students. We decided not to partner with potential external commercial organizations that offer online education services as we felt that this was our core business for the future and so we needed to learn how to run online education ourselves. It may now be the time to re-consider this decision, especially as some of the partnering companies have unbundled their services and offer recruitment as a standalone option.

Another lesson learned was that these Masters students largely needed less support from the non-academic support services than residential students, but teaching was more time-consuming (although very rewarding) if we were to deliver high-quality education online. There were savings being made from this form of education, but these were either in different budget lines to those of the Schools offering the degrees (for example, classroom spaces or libraries) or were un-costed and diffuse (for example, lack of timetable conflicts). This particular problem was never resolved; indeed, it could not be without a major re-think on the University’s financial structure.

The online students also had more varied patterns of progression through their degree pathways and many more opted to graduate with a PGCert (60 credits) and PGDip (120 credits) than did residential students who mainly completed the Master degree (MSc is 180 credits). This meant that data analytics for these students (for example, per cent graduating on time, retention) was harder to compute as their final exit point and speed of progression was unknown until they made their decision, as they could change their minds mid-programme. Indeed, some opted to take the study programme module by module and thus could decide they had gained what they wanted and depart at any point.

Finally, scaling up to 100+ students joining each degree programme per annum was not just a recruitment problem. For many Schools, this required a real re-think about how to design and run Masters degrees and how to remove bottlenecks around projects and group sizes. It would also probably require a more flexible curriculum than many Schools wished to offer, with two intakes per annum (instead of the standard one) to spread the programme more evenly through the two
semesters. The two-semesterper-annum model was itself a limiting factor for some potential students, as it reduced the speed at which they could progress to graduation. Changing teaching to an all-year-round model is still a step too far for many academics and support staff.

Case Study 2: Massive Open Online Courses (MOOCs)

In contrast to our decision to offer fully online degrees (DEI) in which we chose how and when to proceed, the decision whether to offer MOOCs was subject to significant time-dependent external factors. In mid-2012 we were offered the opportunity to join colleagues at Stanford University in their new Coursera venture and early membership brought with it the prospect of being the first European university to offer MOOCs (Haywood and Macleod, 2014; Haywood et al., 2015). As the media interest in MOOCs was intense at that time, joining Coursera would also give us a chance to demonstrate very publicly our desire to fulfil our mission to offer education to as many people as possible and it would also enhance our reputation as a university which innovates in education and the use of technology. Early adopter benefits were clear, although so were the risks. This was less like the usual education innovation project and more like large research or commercialization ventures and it needed decision-making and leadership to match. We had not planned to offer any fully online non-credit-bearing courses, nor short courses outside our degree programmes, but this was a situation in which strategic opportunism was needed.

To ensure that a rapid decision was made, but one that had been through an appropriate governance process, the light business case for offering MOOCs was put by the Principal and VP/CIO to the SMT and to the leaders of University Court and Senatus, over a period of a few days and out of the normal cycle of meetings. The benefits as well as the risks were outlined and the initial start-up funding and staffing was identified within an existing annual budget (an internal strategic fund inside the Information Services Support Group). This meant that a fuller discussion and business case could follow later, as further funds might well be needed if MOOCs turned out to be a growth area, which was quite unclear at the time. An initial set of six possible MOOCs were identified and, after due legal diligence, we signed our contract with Coursera. Others also identified the need for good governance of their MOOC project (Morris et al., 2014).

From the outset we put in place some initial steps to maximize educational quality and to minimize risk and these largely remained constant throughout the first four years. Although MOOCs were not University credit-bearing courses and the learners on them were not University registered students, we did regard them as a full part of our educational offerings and so quality was important to us. We wanted to be able to say with confidence that this was the case and so we devised a rapid and light version of our standard processes for course approval and post hoc quality assurance. We did this by working only with the two top-level committees that approve and quality assure courses, setting aside the usual route from School committees, to College Committees to top-level committees. (The standard process for degree programme approval through this process can take one year, often more.) As MOOCs were so different to the usual university courses we worked with the members of these committees so that we all understood what was needed to approve the design of a MOOC and to assure quality after it had run. This proved highly useful in that the committee members then took that knowledge with them into their Schools and support services and so a wider understanding of MOOCs resulted.
Part of the drive for high quality was our decision to implement mandatory training for online tutors, unless they could demonstrate prior experience in this role. We set norms (and minima) for numbers of online tutors per MOOC and hours and days of online engagement. In the event, especially in the early iterations, academic staff were very active too, so oversight of the progress of the MOOCs was high.

As MOOCs were a completely unexplored area in 2012 we knew that a lot of learning would go on. Many ideas would not be from the central team but from the academic staff teams leading MOOCs and so we created a community of practice (CoP), modelled on the lines of that for the online degrees, to ensure that experiences and ideas were regularly shared between all involved in the MOOC project. This proved extremely valuable in the first two years of MOOC explorations and innovations and as the Coursera platform itself continued to develop rapidly.

Although the MOOCs were tightly managed by the central eLearning support team with VP oversight, the design, content and delivery could only come from the academic staff in the Schools and so each MOOC had to be signed-off by the Head of School (as SRO for the School), to ensure that the terms and conditions were clearly accepted. These included a minimum of three offerings of the MOOC over three years, provision of online tutors, compliance with copyright and so on and commitment to deliver the MOOC on time for launch. In return, whatever revenues were gained from the MOOCs (for example, through certificates, licensing to others) would be given to the Schools as an incentive to participate. In the event this revenue stream turned out to be a little larger than we had expected at the outset, although it was never the main return on investment.

Indeed, we were clear at the outset that ‘making money’ from MOOCs was not an expected outcome and initially we felt that breakeven would be the best we might achieve. We knew that we did want to reach new learners worldwide, to explore how these novel educational forms might best be designed and run across a wide range of subjects and to work with colleagues in other MOOC-offering universities to share experiences and courses. The main risk that we saw in the initial period was that some of our MOOCs might fail spectacularly with consequent adverse publicity and recriminations. This was significantly higher than with other educational innovations as it took place in the public eye at a time of high media attention and hype. Other risks were that our own students and staff might not regard the venture as positive and so the leadership worked hard to ensure that all key contacts were well-informed of what we were doing and, importantly, why. In the event all our MOOCs performed very well and our staff and students raised no criticisms. Media attention was very positive and we approached this area with a view to agree to all request for interviews and for presentations at events whenever possible, by the academic staff offering our MOOCs as well as the project leaders. A lot of effort was put in by the University press and communications team to ensure all our press and media outputs were of high quality and reflected well on the University.

Although our view of the risks involved in offering MOOCs fell over time as we produced successful courses, we retained a central process to select new MOOCs, to make the video and multimedia, to oversee the course designs and to liaise with the MOOC platforms, including handling technical and administrative procedures. (A similar process was operated by other European MOOC-offering universities, for example EPFL in Switzerland: https://moocs.epfl.ch/mooc-factory.) MOOCs could only be mounted on a platform if they had been through the central University process, overseen by the VP, who also represented the University at senior level with the MOOC platform companies. This need for a coordinated central process was reinforced by the opportunities to join two other MOOC platforms, FutureLearn and edX, with some external pressure to do so. The negotiations with them, plus with Coursera as it changed its business processes and finance processes and wished to change its contract with us, meant that strategic decisions were still being taken several years after the initial
go/no-go decision in 2012. This meant that offering MOOCs did not really reach a business-as-usual position, despite the range and scale of our involvement, as significant innovation and evolution continued over time.

Clearly as the number of MOOCs being produced went beyond that of the original six, investment had to increase too and so a funding line was set up for annual planning to cover the central (IS) costs, backed up by a normal business case. Effectively this set a cap on how many MOOCs could be produced per annum (around five–six) unless additional funding was to be made available by the School or an external partner (for example, research agency, NGO). Of at least equal value was the academic staff effort that was required to create a high-quality MOOC, which we estimated at around 30 working days (enough time to produce a research proposal). To ensure that this funding and effort was being spent wisely on the right MOOCs, the SMT agreed a process whereby those Schools proposing a MOOC for development had to indicate how it would contribute to one or more of the University’s strategic agendas namely student recruitment, research, outreach and community engagement, international engagement, reputation and branding and learning and teaching.

Overall, MOOCs proved easier to produce and operate than we had expected and much easier than our fully online degrees. The marketing was ‘taken care of’ by the MOOC platform holders plus our own targeted media activities. Of course, these were much smaller educational offerings and less demanding on learners and many learners decided not to complete the course they had signed up for, which comes at a cost for fully-registered students on degree programmes. For academic staff and tutors there was a definite ‘fun element’ in finding out how many people would sign up, getting new and interesting discussions with learners with very different backgrounds and viewpoints to on-campus students and the assessment burden on them was low as almost everything was automated. We were pleased that so many Schools wished to produce MOOCs, as in the beginning it wasn’t clear if the first early adopters would be all who would come forward.

The return on investment was much greater than we could ever have expected when we made the decision to join Coursera and even after four years, with the media interest declining, it is still good. By late 2015 we were able to identify a substantial number of returns on our investment (RoI) in MOOCs that went well beyond the small six-figure sum we had earned from certificates. We consider that the monetary value of the positive publicity that we received was many millions of pounds and the overall RoI was very much larger than we had expected.

The external RoI included: impact in political and policy-maker circles; wider public awareness of the university as an educational innovator, including, importantly, amongst incoming students; research grants earned and research disseminated; publications (textbooks, book chapters, journal articles); consulting on online education with third parties (including influential NGOs); new national and international partnerships and reinforcement of some key existing partnerships; strong public engagement; and many invited lectures.

Internally there was substantial increase in the understanding, capability and capacity for developing online education, which resulted in some new online Masters degrees from Schools that had not previously shown an interest and a new stream of MOOCs; re-use of MOOC content in other courses; and increased PhD recruitment, thus adding to our research base and creating a fee income stream.

At the end of 2016 we were offering MOOCs on three commercial platforms (Coursera, FutureLearn, edX) and had reached over two million registrations and awarded 150,000 certificates to learners from 200 countries. We appeared to have reached our goal of providing good quality courses, as the feedback data showed very few who replied had not enjoyed the courses. We had created 40 MOOCs
with over 800 videos (by the end of 2019 there will be 50) which has involved 130 academic staff and 130 tutors from 19 of our 23 Schools. Clearly our initial cautious venture into offering six MOOCs in 2012 grew enormously! Interestingly, some of the Schools that are the highest providers of online degrees do not make MOOCs and some of the Schools offering MOOCs do not offer online degrees, but the great majority of Schools do both, as only two Schools offer neither MOOCs nor online degrees.

The MOOC Team and its leader Amy Woodgate had been recognized with the award of the 2016 Principal’s Medal for their contribution to the University’s success in creating a large number of excellent MOOCs.

Lessons learned

For opportunities with high uncertainty as to the scale, duration or outcomes, an incremental approach works well. MOOCs did not need a defined, multi-year programme with specified funding, but instead agreeing a first phase (six MOOCs) and a modest investment out of the annual planning cycle let us prove feasibility and put forward a costed plan for the next year within the planning cycle. Each year thereafter we could plan for a small number of years ahead and specify the level of investment that we were prepared to make.

A light and fast governance process can be used for out-of-the-blue opportunities, but only if it is one that still relies on the basic principles of approval, accountability and responsibility, risk assessment and cost–benefit estimations, and ensures engagement of key academic and support service staff. Being able to point to the approval of governance bodies gives legitimacy in discussions with leaders of Schools and service units.

In contrast to our on-campus and our fully online degrees, for our MOOCs we outsourced the technology to the MOOC platform provider Coursera. The uncertainty as to the long- (or even medium-) term future of MOOCs reinforced this decision. We actually got a less well-developed eLearning and assessment system than we already had, but it gave us valuable attributes such as design for large scale simultaneous use, high visibility marketing and benefits from multimillion dollar investment in the company from external sources. It also later allowed us to use simultaneously three different technology platforms from three different providers, with consequent pedagogical diversity, which we could not have done ourselves. The decision to outsource the MOOC platform was aligned with our university view that when useful and legal we would outsource non-core skills and services.

CONCLUSIONS

The two initiatives, DEI and MOOCs, have been successful in their own ways, however our online education is still fragile. It is not yet deeply embedded in everyday academic thinking about what degrees or courses to offer, and the level of activity still makes it a minority interest. Nor is it embedded in the thinking of all senior staff and so online education could wither away without continued nurturing, even after so many years. Changes in the SMT could still halt or reverse the progress that has been made.

In part, this limit to expansion of fully online education stems from our decision that the University will primarily remain a residential university, albeit strongly supported by and reliant upon, technology. Furthermore, we have yet to take the step to link MOOCs directly into the mainstream of credit-bearing education (although some pilots are being developed of MOOC-degree hybrids) and we
have not yet produced hybrid degrees with a portfolio of courses (modules) that can be taken online or residentially at the student’s choice. The two developments would add significant embedding to our current online education.

Reviewing the period of systematic development of use of technology in degrees and courses at the University of Edinburgh, dating from around 1990, I can see several key lessons that could inform decision-making at other comparable universities. (I use the term ‘comparable universities’ intentionally, as HEIs with a very strong central command-and-control model of governance and management or with very strongly devolved authority to the point of almost independent academic entities (Schools/ departments/faculties) under a single university name, will find that some of these lessons have to be highly adapted or are not applicable at all.) These lessons are:

1. A consistent vision is needed over a long period. How should the university approach educational innovation; what is its risk appetite in this area? Does it wish to be viewed as a leader, a mainstream adopter or is it promoting a vision of tradition that minimizes innovation and change? For universities with long-term senior staff appointments, this is not so difficult, but where senior staff change on a short (3–5 year) timeframe, getting the vision written into long-range planning documents and targets, and into the minds of a top-level University Court or Board with external members, can help embed it.

2. Embedding takes time, mainstreaming major change can be a slow process, and we should note John Kotter’s comment on not celebrating too soon but making sure we reward our teaching and support staff for success as we go along (Kotter, 1995). Educational innovation can run counter to the views and desires of many existing academic staff so we need to be prepared for slow burn, for some re-design and some re-thinking, towards the same endpoint.

3. Change needs leaders – Senior Responsible Officers – who can be guided by committees, but committees themselves cannot act as the drivers nor the agents for innovation. Committees are essential ingredients for ensuring quality and adherence to procedures, of good practice, of good governance, but for educational change projects, senior individual authority and responsibility with strong oversight is essential. Senior staff can be held to account – committees cannot.

4. Understand the difference between major strategic projects and minor projects and allocate governance processes accordingly. Senior level buy-in, off all the main actors in the equation, is needed. For many projects, leaders of academic Schools or Faculties are key. If possible, try not to affect all of them simultaneously and work from the most in favour to the least. ‘Big bang’ is not an ideal approach. Use the peer status of those engaged to help those not engaged to re-think their position.

5. Trust, trust, trust. All educational innovation is a gamble to some degree, some more than most (perhaps why many universities were wary about MOOCs for several years). Shared leadership depends upon trust, between those in the most senior and the most junior positions in the organization. Actions and not words, over years, are what count.

6. Return on Investment (RoI) is a new concept for some universities but we have found that it makes a real difference to major project business cases and evaluations. RoI is not just about money; it can be new partnerships, wider influence, better student outcomes, higher satisfaction levels, capacity to scale up, and so on. Often, external members of university Courts/Boards tend to understand this approach better than we do.
We have found our 25-year journey into digital education to be demanding but also highly rewarding, and it is a path I hope continues without end. Hopefully the lessons that we have shared here will be of value to others on the same path.
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Chapter 6 - CORE: bringing the economics curriculum online

Alvin Birdi

This chapter provides a case study of creating a new economics course at the incoming undergraduate level where the main resources are provided online. The move to create an online resource was not a matter of simply transferring material found in traditional textbooks into an interactive and hyperlinked text with rich media. Certainly these aspects are found in the new CORE (Curriculum Open Resources in Economics) project, but the online course fundamentally reconceived the way that economics can be sequenced and taught to starting undergraduate students.

Indeed, when Rajiv Sethi, one of the authors of the CORE project, noted in his blog that ‘content innovation is only part of the story’ (Sethi, 2017), he was alluding to the fact that this project had broken new ground in a number of ways that may not have been fully envisaged at its outset. It is nevertheless true that content innovation was a key initial motivation which arose out of the debates that followed the financial crash of 2007 in which the canonical content of the subject came under scrutiny.

The Nobel laureate Paul Krugman (2009, see also Colander et al., 2009), for example, writing in The New York Times, suggested that economists had been mesmerized by the beauty of their analytical models and had begun to celebrate a ‘convergence of vision’ that for them led to what is known as the Great Moderation, two decades of relative economic stability that could be attributed to better economic policy making. To cite an example of the thinking that Krugman is referring to, just a few years previously another Nobel laureate, Robert Lucas, in his presidential address to the American Economic Association had stated that: ‘macroeconomics . . . has succeeded: its central problem of depression prevention has been solved, for all practical purposes, and has in fact been solved for many decades’ (Lucas, 2003).

Though the initial focus of the debates that followed 2007 were concerned with the profession itself, the discussions eventually turned to the nature of what was being taught to undergraduates. If the analytical models that students were learning to help them understand the economy provided little purchase on the behaviour of actual economies, then something was surely adrift in our pedagogy.²

Students were quick to raise their own concerns. In 2012, students at the University of Manchester formed the Post-Crash Economics Society (PCES) which produced a report highly critical of university economics teaching.³ The fact that their report contained a preface from Andy Haldane, the Bank of England’s Chief Economist, showed how deeply the concern with undergraduate teaching had

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¹ I am grateful for comments from Ashley Lait, Economics Network.
² One of the first volumes dedicated to reimagining economics pedagogy in the light of the crisis was Fontana and Setterfield (2009).
³ See PCES (2014).
reached. In 2012, Diane Coyle (2012) published her collection, *What’s the Use of Economics?*, in which a number of chapters focused on the teaching of economics.

It was in the wake of these reflections that the CORE project was formally launched in October 2013 with a grant from the Institute for New Economic Thinking (INET). The basic economic workhorse models were very similarly taught across most countries so that the concerns around the syllabus were international. As a result, an international group of academics had already begun to contribute to these debates in a series of workshops in early 2013 at which the CORE approach and vision was discussed and developed. The unique geographically distributed authorship which is one of the project’s key innovations was drawn from this international set of academics. For the print version of the text that appeared in late 2017 there were 23 main authors drawn from seven countries and a wider group of economists that had contributed multi-media content to the project. The distributed and cooperative authorship model, itself aided by online collaborative tools, is unique in economics where textbooks (and indeed research papers) are typically single or joint authored. It has necessarily entailed extensive coordination and debate about the content, sequencing and presentation that is typically absent in standard economics textbooks beyond the usual editorial and refereeing processes that publishers undertake. The production of the text is therefore unusual in that it has emerged through a process of workshops and presentations in which chapters are introduced, critiqued and a common approach to the material is forged. These regular workshops are attended not just by authors but also by publishers and others with pedagogical or e-learning expertise so that attention is paid not just to the material itself but also to the delivery of the material in the classroom.

The project itself is led from University College London by Wendy Carlin and a small production team with the partnership of Sam Bowles from the Sante Fe Institute. They have provided the leadership and organization that has brought the authorship and development team together in what has become a production unit that is broadly based but retains central direction and purpose. This authorial design has contributed to the success and longevity of the project by harnessing the power of an open model which is centred around a clear hub of activity.

The distributed model of authorship also has benefits in terms of pedagogy and content. It ensures that a variety of viewpoints from economic historians, econometricians, behavioural economists, pedagogical experts and others (including expertise from cognate disciplines) are drawn into the production of the text at every iteration. CORE’s response to what Krugman had described as a ‘Panglossian’ and narrow approach to economics was to bring a broader understanding of human behaviour together with recent research on institutions, power, bubbles, crashes and history back into the teaching of undergraduate economics.

This point needs to be stressed for CORE has been criticized in some quarters for not going far enough in the direction of a pluralism of viewpoints. For some economists it was the failure of competing viewpoints that was at the heart of the malaise in the subject and which, it is argued, CORE does little to counter (see for example, Chang and Aldred, 2014). But the unique production context of CORE has led to a what Sam Bowles characterizes as an integrative pluralism (Bowles, 2018), one in which a multiplicity of viewpoints is not simply juxtaposed but where a cohesive narrative is arrived at through an intellectual openness and a multiplicity of contributions. Thus, the insights of Karl Marx on firm organization can be merged with those of Chicago economist Ronald Coase to help students understand firm behaviour without merely presenting a series of opposing ideas without prioritization or calibration against the evidence. In the afterword to the CORE text, such a view is articulated in the following way:
[...] instead of seeing all economic activity through the lens of a single model... CORE has invited you to see the economy the way research economists see it, as a diverse combination of institutions and behaviours that is best studied by judiciously choosing among factually tested models. (CORE, 2017)

Rather than simply presenting a number of competing viewpoints therefore, CORE has chosen to prioritize explanations that have some basis in evidence. Its authors have then gone somewhat further in presenting this material using a consistent set of tools which may inadvertently appear somewhat to present a homogenous vision. It may be this pedagogic consistency that has led some commentators to criticize CORE from a pluralist perspective. Far from offering a ‘settled view’ of the subject, CORE might be seen as presenting the best of our current understanding. It will be an ongoing challenge for CORE to ensure that it continues to adapt its content as the subject and evidence progress so that the charge of a settled perspective cannot be levelled in future.

CORE’s management and authorial structure, as noted previously, is supported by online collaboration through tools such as Dropbox and Google Docs. The online setting was a key enabler for the delivery of the project and it was always envisaged that the resulting resources would be available free of charge on the Internet. Because the problems of economics teaching were not localized to any one country, online provision maximized the ease with which departments of economics across the world could deploy the resources in moving away from the traditional canon.

Take-up of the resources was also facilitated by the modular structure of the materials which allowed departments to select and tailor the content to a variety of course formats. Such a modular structure is particularly straightforward to implement technically in an online setting. However, there is a significant pedagogical challenge involved in ensuring that the progression of the course material is not compromised by the fact that an instructor decides to omit a particular module. In the case of CORE, some of the more technical material has been pushed into separate sections (called ‘Leibnizes’) which may be omitted or used selectively depending on the mathematical preparation of the students in the course. It is probably the case that CORE could be pushed more in this direction of modularity, but as has been noted above, CORE has presented a diverse economics through the lens of a common set of tools which are revisited and developed as the text progresses. Such progression poses a challenge for modularity because omitting sections may compromise the understanding of material which follows. The CORE team has been working on developing various routes through the text which would allow the resources to contain a number of embedded courses. For example, the explicit focus on various challenges such as environmental problems, inequality and innovation allows a variety of courses to be constructed which emphasizes one of these themes. Colour coding of the sections that contain substantial discussions of these themes both in the online and printed versions of CORE begin the process of developing bespoke course combinations from a single text.

The online and free availability of the resources, together with the (somewhat limited) modularity has ensured that the initial take-up of the CORE curriculum was not confined to a single country or region. Its early adoption included the UK, the US, France, Italy, India, South Africa, Australia and Chile. At the time of writing it is being taught at some 75 institutions worldwide. The quick initial take-up of the course, and the speed with which it moved from development to publication, ensured that publishers became interested in CORE as a novel publishing phenomenon. Eventually the text appeared in print version in late 2017 as an Oxford University Press print text and provided a new source of funding for the project beyond its original grant from INET, a subsequent grant provided by the Friends Provident Foundation and further funding from professional organizations like the Royal Economic Society.
It was not just departments of economics that benefited from the online platforms on which CORE was implemented. Web technologies and multimedia also encouraged a personalized and active engagement by students because of the possibility of providing online quizzes with immediate feedback, video content, interactive graphs that develop step by step with annotations and additional more advanced material that students could use if they wanted. These aspects are integrated into the text and there are more extensive exercises that make use of external web resources and data that students can use to delve further into the material. The content was also free at the point of use and it meant that take-up did not depend on print runs in localized areas.

The decision to make CORE ‘online-first’ led not only to scalability and the pedagogical benefits sketched above but, as noted previously, a significantly expedited publication schedule (the first beta versions were online and in use in a number of universities worldwide within two years). It also enabled the development of a textbook production process that could deliver both online and print versions from a single markup source and which was not tied to the usual overheads and limitations involved in converting from fixed printed page formats. Indeed the technical production of CORE provides an example of textbook publishing that harnesses the full potential of an online process.

Some of the most important changes that are inaugurated by the CORE project involve the interaction of content changes and pedagogy. As discussed above, CORE was initially motivated by a perceived problem with the content of introductory economics that was being taught to students and its mismatch with the types of knowledge that were needed to understand and comment on real events in the world economy. This situation resulted from the fact that the core theoretical workhorse models in economics had a remarkably resilient history. Much of the core theoretical material taught to first year principles of economics students had not significantly changed over the post Second World War period.

Over the same period, the subject of economics as a field of research had in fact developed, notably into areas such as game theory, behavioural, institutional and information economics. It is true that much of this literature had found its way into economics textbooks but this usually happened through the addition of extra chapters at the end of textbooks without significant alteration to the existing corpus of theory in the main parts of textbooks. One problem with such an approach is that instructors may find they cannot complete both the original material and the newly added material in a standard length course, or indeed that the positioning of the newer material at the end of textbooks signals its relative lack of importance in an introductory course. It is therefore not unusual to see economics programmes where the first year comprises a very traditional exposition of theories without reference to game theory, behavioural economics, institutions or information economics. These aspects are then introduced in more advanced courses.

A more significant problem is that the insights from incorporating institutions, power, information and strategic behaviour into economic reasoning make many of the traditional approaches untenable. To take a single example, the explanation of persistent unemployment is very difficult in a traditional labour market framework in which the market ‘clears’, in other words, in a situation in which wage flexibility restores full employment at all times. Unemployment can exist in such a setting but it has to be explained on the basis of some labour market frictions that are increasingly difficult to accord with the movement towards unregulated labour markets in many countries. On the contrary, the CORE

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4 See for example Varian (2010) in which chapters on game theory, behavioural economics and information economics are numbered 28, 30 and 37.
approach to labour markets incorporates a structural feature of asymmetry of information in the labour contract that can explain why the wage contract implies a certain level of unemployment.

Central to CORE, therefore, is the belief that the findings from recent research into policy making, game theory, behavioural economics and information economics, to take a few examples, alter our understanding of human behaviour to such an extent that the previous canonical theories can no longer be taught in their unaltered form. The task that CORE faced therefore, was a full integration of the later chapters, so to speak, into the earlier chapters of the standard textbook. This is of course a significant undertaking and it meant that some of the much-loved theoretical frameworks that generations of students have passed through their ranks (the so-called IS-LM model for example) have had to be dropped or demoted. Similarly, the ‘perfect competition’ model of markets, loved and reviled in almost equal measure and which has been typically set as a benchmark in many accounts of economics, is now relegated to a limiting theoretical case rather than (implicitly) a desired actual state. Markets themselves, which had been the privileged if not the only institutional form discussed at length in introductory accounts of economics, are now configured as one of a set of institutional frameworks (including for example legal settings, democracy and cultural norms) which influence economic outcomes. The reorientation of content along these lines had a number of pedagogical effects that are outlined in what follows.

First, there was an explicit attempt to relate economic models and learning to the lived reality of students. This was partly achieved by extensive use of empirical evidence and data drawn from around the world. There are upwards of 200 datasets included in the resources for CORE. The online nature of the text enabled easy access to these datasets either directly from the text itself or through linking to databases where the original data are stored. Thus, inclusion of material and exercises that used data was much easier and students are encouraged to see the economic models they are learning as applicable to, and testable through, data. The integration of data in this way has also meant that basic data literacy, for example the presentation of data, logarithmic graphs, the nature of correlation and causality and the use of experiments could be incorporated into CORE in a natural way. These aspects of data analysis are traditionally taught separately in a statistical course.

Second, a significant aspect of the re-envisioning of content in the CORE text involves the centrality of institutions and rules within which human behaviour takes place. Moving away from the assumptions of consistently rational behaviour that Krugman criticizes entails an examination of how the wider context of rules and cultural norms affects human behaviour. This is the realm of game theory and behavioural economics, domains in which complex human interactions are modelled and examined formally. It so happens that much of the research in this area involves empirical experimentation in an effort to study actual rather than presumed behaviour. Thus, the subject area lends itself to a pedagogy in which students can play the games themselves in the classroom and learn about human behaviour first hand before theorizing it. Many of these games can also be played online and the use of an online format enables a natural blending of the face-to-face and online environments.

Third, the sequencing of content in CORE may be described as an inversion of the traditional approach. There are a number of inversions at work. One has been mentioned already, that the project is online-first. But more substantially the traditional mode of exposition in economics, which proceeds from simple analytical building blocks (supply and demand, markets in ‘perfect’ competition, economies with just two people or two countries) towards more complex case studies is here reversed. Most chapters (called ‘units’) begin with a complex historical narrative and this is then followed by a development of theories and tools which might help to explain it. Indeed, one of the early catch-phrases popular in the community that produced CORE was that the back of the textbook was being brought to the front.
The importance of this sequencing rests in both its motivational function\(^5\) and the fact that it demonstrably situates the economy within a complex reality of which economics on its own can at best provide a partial understanding. Some of the complacency in the subject that troubled Krugman in 2009 is thereby implicitly addressed by this sequencing. The first such empirical case study in CORE examines the vast and rapid rise in income in some countries from the late 18th century onwards after an extremely long period of relative stagnation, the inequality that this surge in income produced within and between countries, and also the impact on carbon dioxide emissions. Many questions follow from these empirical examples, such as what causes economies to boom, why are the rewards so unevenly distributed, why is it so hard to regulate the production of climate change gases? An additional benefit of this inverted sequence is that it mirrors the process of much empirical research which is usually motivated by the need to explain a feature of empirical reality that has thus far escaped explanation. An online platform is a natural environment in which to encourage intellectual exploration and discovery, particularly in the context of a data-based subject and many of CORE’s exercises encourage Internet-based exploration.

A further ‘inversion’ that the CORE approach encourages is the increasingly popular method of classroom ‘flipping’ in which lecture time becomes oriented towards active problem solving. The relationship between the sequencing of the material and the opportunities for classroom organization are complex but the problem-oriented approach to economics that CORE encourages lends itself to the use of class time for working on problems that were motivated by questions raised in the empirical case studies. Together with the datasets, classroom games and the quizzes in the online resources, CORE situates itself as a text that very well complements a flipped approach to learning.

The success of a flipped approach depends on whether students engage with the material before class time. Understanding student motivations to engage with pre-class tasks is difficult but part of this motivation is likely to rest in whether the material itself is engaging and strikes curiosity in students. CORE’s case studies and narratives, and some of the videos, have been developed in such a way that they are likely to interest most students who have decided to study economics. They cover a variety of topics such as equality on pirate ships, the fortunes of truck drivers in the US as the natural resource boom ended and the difficulties of obtaining credit for poor farmers in Pakistan. However, the narratives are intended to pique a student’s interest with questions that need answers (why are pirate ships so equal? How can we measure inequality? What effect does credit availability have on the economy? Why do industries disappear and what is the effect of this?) so that the relevant analysis can be developed in class. Experience with the beta versions of CORE suggests that students engage with the CORE material more readily than material used in previous introductory courses. Some universities that have adopted CORE have successfully used multimedia group projects based on some of the case studies to kick-start the pre-reading process.

In September 2017 the first production-ready version of CORE (version 1.0) was released and it was closely followed by the print version published by Oxford University Press. Through the pilot and beta phases of the project it became clear that moving introductory economics online had also potentially changed the way that teaching was being configured in the classroom. There were a series of UK-based workshops in 2016 which introduced the new content and teaching possibilities to interested departments of economics. The experience of the pilot universities has been that CORE’s pedagogic potential will be best realized through a training programme that equips instructors and teaching

\(^{5}\) In line with cognitive goal-setting psychological theories of motivation, such as those which derive from the work of Maslow (1954), explaining these real-world issues provide a challenge towards which the rest of the chapter is devoted.
assistants to depart from a traditional mode of teaching in economics that has long consisted of lectures and supporting tutorial classes in which exercises are solved and discussions take place.

To facilitate this, CORE, together with the UK-based Economics Network, is currently planning a series of training workshops aimed specifically at training staff to teach in more active ways and exploring how the new content, its sequencing and the multimedia and online modes in which it is delivered can complement a blended teaching strategy that makes full use of enquiry-based and participatory learning. The workshops will aim to provide a holistic view of course delivery such that the taught content, preparatory student work and the use of class time are mutually complementary. In this way, CORE will have effected a number of innovations which spread from the make-up and functioning of an international authorial community, the unique publishing process, the new approach to and sequencing of economics content, the modularity and the innovations in classroom practice.

Most recently, a new CORE project has developed from the original. This is funded by the Nuffield Foundation and entitled CORE for the Quantitative Social Sciences. This new project involves a refashioning of the CORE material to make it suitable as a course in data literacy and the economy for non-economists. It is likely that the first courses that will use this new material (at the University of Bristol) will begin in September 2018. As with the original CORE this is an extremely rapid production schedule facilitated by the online production process that CORE has developed.

To conclude, there are a number of emerging lessons from the CORE experience that might inform other disciplines in the move towards effective online pedagogies. First, a bold approach to content may be needed to challenge the linearity of conception that often inhabits instructional texts arising from print medium and the delivery of face-to-face lectures. Second, online technologies can be fruitfully used by authorial teams in the distributed production of new educational resources and such an authorship model can benefit greatly, both in terms of expediting production and in creating a coherent overall style and vision, from a strong central coordinating leadership together with regular face-to-face contact. Third, that disciplines which have traditionally used a step by step logical approach to the development of the taught material may benefit from inverting the traditional sequence so as to begin with complex phenomena rooted in the real-world experiences of students. This not only spurs student motivation, which may be more important where face-to-face contact is reduced, but also has the benefit of allowing a more modular approach to content because theoretical and foundational material can come later and can be selectively used by instructors and students. Such modularity is particularly well suited to online delivery. Finally, the CORE project and its positive reception by students demonstrate that a combination of technologically simple interactive tools like graphs which build up sequentially with explanatory notes, videos and multiple choice questions with detailed feedback, can be powerful when used together in complementary ways.
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Chapter 7 - Identity at the core: open and digital scholarly leadership

Bonnie Stewart

THE ACCIDENTAL TWEETER

I never set out to be an open educational researcher. Rather, my emergence into the world of open education was both accidental and gradual, if rewarding. It has led to opportunities at a global scale that I did not imagine at the outset of my academic career and has been an education in the power relations of social media platforms and their intersection with more conventional academic prestige economies.

This chapter is a personal reflection structured through scholarly analysis. It details how I came to develop a relatively open practice as a digital scholar and traces important lines of connection between open identity and new forms of academic status, both in my own trajectory and in the broader field of higher education. I will explore the operations of open identity in contemporary higher education, as well as some of the challenges that emerge for open scholars. I will also posit that sustained engagement and identity development in the space colloquially known as ‘academic Twitter’ offers a hands-on education in participatory engagement.

When I joined Twitter in June of 2007 my only frame of reference for openness in education was the ‘Open Learning’ distance education office I’d worked for during my MEd nearly a decade before. At the time I signed up for Twitter I was a blogger as well as the manager of a large educational research project at my local university. I had spent the year or so previous blogging about my journey to parenthood and my shifting identity in that first year of my son’s life. I had already developed a practice of open sharing about my life but had not yet integrated my professional digital identity with my personal one.

Twitter was not immediately interesting to me. I was new to Facebook at the time and busy reconnecting with old high school and college friends I hadn’t seen in years. I found it harder to see an immediate use for Twitter, as – unlike Facebook – it did not connect me to people I had no other channels of communication for. I live on a small island on the edge of North America, in Canada’s smallest province, and so I was keen to expand my world, but didn’t initially see how Twitter could offer me something I wanted.

My blog, on the other hand, had opened up a network of contacts – mostly other parents and life-writers – spread around North America and elsewhere. While my Twitter account sat relatively dormant in the first few months of its existence, some of the earlier adopters within that blogging circle still chose to follow me, as did a few local contacts. Thus, while I engaged minimally in that space, I was nonetheless passively building a Twitter network of people who knew my voice and who were known to me. This passive circulation of identity and influence – and its implications for a field as identity-focused as academia – would eventually become a focus of my scholarship and career.
PROFILES IN VISIBILITY

Twitter, Facebook and many other social networking sites (SNS) operate through the circulation of profiles or what boyd and Heer (2006) called ‘public performances that are limited by... visibility constraints’ (boyd and Heer, 2006: 6). Profiles are individual users’ selective and performative presentations of self (boyd and Heer, 2006) on a given platform. In my case, my initial Twitter profile had the same handle as my blog and so my presentations of self in the two spaces became linked.

Online, individuals often become known to others through the sum of engagement traces that their profiles leave, through content shared and relationships built in participatory exchange. In these cases, profiles serve, effectively, as identities or stand-ins for the embodied self that may not be physically accessible. Walther’s (1996) work on hyperpersonal communications showed that digital identities can sometimes forge even more intimate connections than those established via face-to-face contact, since irrelevant or distracting information can be minimized online and commonalities amplified. In my own case, the hyperpersonal connections being formed via the open sharing of my blog carried over to Twitter, since I was recognizable in that space even when I was not present there.

Online as off, individuals can also become known by reputation rather than by direct exchange. Heavy Twitter users often show up in the feeds of others who may not follow them, particularly if they share common ties in a participatory network. Virality – or extreme levels of circulation and visibility – can also enable users to become known by reputation without participatory engagement, through circulation of their own content or what is said about them by others in their networks, whether visible to them or not. Some users of SNS and other digital platforms intentionally cultivate their digital identities and reputations as a form of microcelebrity (Marwick, 2014; Abidin, 2015).

Digital platforms make discrete, recognizable, circulating identities a currency of sorts (Birch, 2014), wherein recognition and scale on one platform can turn into ambient engagement on another – social capital that can be spent on a site before effort is even made to accrue it.

But while capital can transfer from site to site, to an extent, within common overlapping networks, it can only do so if recognizable digital identity is first built and developed. Sites such as Facebook and Instagram cannot be browsed or navigated except from the perspective of a logged-in profile or account; users without an identity on those sites can search and view public profiles, but platform design demands identity – and accompanying collection of personal data – for full navigability. If one wishes to engage with the web as a participatory space rather than merely a consumption space, as Web 2.0 exhorts us to do, some form of visible identity is the price of admission.

THE IDEA OF THE FEED

Additionally, identities – presented as profiles – shape and filter a great deal of digital engagement, even if one only consumes and does not contribute. SNS not only circulate the contributions of a given identity, as blogs do, but do so through a centralized and individually-curated feed or scrolling list of content contributed to the network. Feeds organize the web by identity; contributors’ visibility is profile-based and known nodes or faces in a given network become familiar. Familiarity helps users navigate the sheer scale of information available to us in an age of abundance. Thus, what content a user sees in his or her feed is contributed primarily by the profiles he or she has chosen to follow or friend.
However, as SNS platforms have been developed and tweaked to optimize usage, engagement and data collection, comments and other public signals such as ‘likes’ have become rendered increasingly visible and part of the consumable product that the feed creates. Thus, users of a platform can be regularly exposed to profiles that they have not chosen to follow or friend, through engagements with mutual network connections. Profiles can be clicked and expanded from inside a feed, if a user wishes to see another’s self-presentation and public contributions; they serve as circulating calling cards for identity. Profiles on many SNS platforms also feature metrics, so that the user’s scale of connections and usage can be in some way estimated or read. These can be read by experienced users as complex status signals (Stewart, 2015a), with each platform and each sub-community within a platform valuing particular types of measures. As a result, even where individuals may be interested in participatory engagement rather than in cultivating micro-celebrity, their circulating profiles may build reputation and capital for them based simply on whom they engage with and become visible to.

When I opened that first Twitter account I described myself in vaguely wry terms, uncertain of how to encapsulate a complex identity into a brief public description. I added a profile photo, a significant commitment given that my phone did not yet have a camera and so I had to transfer and crop and upload the chosen photo. And then I followed the bloggers I knew who were on the site or who had followed me and I followed a few of my partner’s circle and some local colleagues and friends. When I remembered to go to the site, sporadically, I engaged mostly with users who engaged with me. But it was the feed that started me branching out. And it was my partner – and his separate but welcoming network – that made the feed and its functions visible to me.

EARLY EDUTWITTER

While my blogging community initially built up my Twitter follower account, at least into numbers I could no longer count on my fingers, it was my partner who introduced me to the professional learning possibilities of Twitter and its emergent education community. In 2007, my partner had been co-hosting a weekly livestreamed podcast called EdTechTalk for a number of years. EdTechTalk explored new developments in educational technology; he and the other hosts interviewed leaders and critical voices within open education and ed-tech. I knew his circle of friends and colleagues and he mine, but the two of us had separate digital communities and networks that centred on our respective blogs and digital output. Because our conversations occurred on distributed platforms in very separate parts of the so-called blogosphere, there was minimal mutual visibility between our worlds. Until Twitter.

My partner found a use for Twitter quickly within his education circles. In late 2007 and early 2008, when I first began spending time in the space, educational Twitter seemed to be a relatively small community populated primarily by people who read each other’s’ blogs. With long-form blog conversations as the basis of many of the relationships and reputations that people brought into the space, the character limit of Twitter served as a constraint that seemed to encourage different, more playful forms of conversation. Twitter provided a platform for casual sociality and witty replies that neither blogging nor Facebook were designed to foster at that time. It lent itself well to banter and performative humour.

My partner enjoyed the camaraderie of the space and – perhaps as encouragement – sometimes included my @ handle in his tweets. Replies came to both of us. When I bothered to check in, therefore, I had conversations to be in – and they sometimes entertained me. These bursts of engagement were short and public, at least to mutual followers and they did not require the same level of effort or attention that a blog post did. However, they still offered a sense of audience, without
significant commitment. I began to follow people back and to show up more often. These educators’ presence on my centralized feed changed the scope and scale of the network I was exposed to, expanding it significantly and shifting some of the locus of things I usually talked about online.

That breadth of conversation was exciting and welcoming to me. My willingness to engage with – and egg on – the teasing that my partner’s colleagues enjoyed directing at him essentially served to build visibility for my own profile and to build relationships based on humour and trust, outside my own blogging circles. I had remained peripheral to his network while its discussions were distributed and blog- and podcast-based, but the Twitter feed brought those conversations directly to me. Nonetheless, his early adopter status and visible profile in those circles benefited me, as his relationships with highly-visible influencers meant that those people extended welcome and belonging to me. I began to contribute and became an active user.

EMERGING SCHOLARLY PRACTICES

Over my first few years on Twitter, then, I connected with open educators and academic bloggers, particularly if not exclusively in edtech. I began to regularly read their linked blog posts as well as those of my own circle and became familiar both with their work and with the themes that drove conversation and controversy in online education-based networks. My circle – and my own profile – began to shift accordingly and as I discovered an audience for different kinds of discussions, my writing on my blog shifted. I continued to write personal narrative but also to begin to examine and analyse some of the trends and practices I was seeing in networks, so that meta-commentary on the operations of digital networks, SNS, and Twitter in particular became part of what I wrote about. And the breadth of my conversational circles meant that my emerging Twitter presence was a dually-situated identity, both writer and educator, with a foot in more than one network and a window on how different digital communities operated.

The practices that I developed in that first year or two of using Twitter were practices that laid the groundwork for the development of an open scholarly profile. Content promotion had not yet become the norm within what was then a primarily participatory space. In group conversations, profiles unknown to me but clearly familiar to some members of the discussion would often engage, thus becoming visible to me. I developed a practice of following people that my peers seemed to know, extending trust based on shared ties. At the time, this appeared to be a relatively common practice and it meant that I developed a broad and geographically-diverse Twitter network.

About two years into active Twitter use I was embedded deeply enough in conversations and choral examinations of digital networked practice that I decided I wanted to explore it formally. As an educator and a higher education professional, I was curious about what emerging models of networked participation and open practice might mean for academia and how open models of teaching – including the early Canadian Massive Open Online Courses (MOOCs) that my partner had helped spearhead – could be used to build digital literacies. I was also curious about whether the forms of knowledge-sharing I was seeing in educational blogs and academic Twitter could be considered emerging forms of scholarly practice, in spite of their lack of gatekeepers.

I entered my local university’s first PhD cohort in Educational Studies in the autumn of 2010, aiming to explore the implications of digital networks for higher education. By that time, I had a few thousand Twitter followers of my own. I actively began to seek out and follow a greater number of academics and academically-focused identities on Twitter. I used my existing education network as a base, perusing the public ‘following’ lists of colleagues I knew and trusted and following their peers and
contacts accordingly. I treated this as unofficial early research into understanding how Twitter was being used by higher education professionals and took notes on the patterns I found, as well as on how I was responded to when I engaged in particular ways. Eventually, I formalized my research questions and conducted an in-depth ethnographic investigation into academic leaders on Twitter.

LEADERSHIP IN THE OPEN

My interest was in the idea of open scholarly practice or individuals engaging in the educational and academic work of research, knowledge production and idea-sharing on open, digital platforms. My hypothesis was that research and scholarship in the open shared many principles and practices with conventional research and scholarship, yet operated on different terms. I was curious about what those terms might be and how academic identities, relationships and perceptions influence were all affected by the different practices that dominated open, digital engagement.

Willinsky’s (2010) assertion that scholars learn to read status and reputational cues adeptly within the academy was my starting place for examining terms of status and influence:

Those who work within the academy become very skilled at judging the stuff of reputations. Where has the person’s work been published, what claims of priority in discovery have they established, how often have they been cited, how and where reviewed, what prizes won, what institutional ties earned, what organizations led? (Willinsky, 2010: 297)

My sense was that different ‘stuff of reputations’ counted in academic Twitter and in the blogging circles surrounding it. Even while digital scholarship is shared and evaluated by peers, which is sometimes framed as an alternate form of peer review (Tennant, 2017), the distinct channels and lack of gatekeeping around open engagement mean that reputations are not cultivated based on having met gatekeeping standards. Thus, self-published or blogged ideas do not gain value from being hosted in a particularly prestigious publication, but rather gain value from being seen and recognized and hopefully used. I wanted to explore this in greater depth. In my early notes on the subject of digital scholarship and open practice, from which my dissertation proposal was eventually honed, I focused particularly on scholars whose work was openly available on blogs and Twitter. Facebook also became a player in digital scholarship with the advent of group functionality, but was not a site that I investigated in my 2010‒2012 observations or my formal 2013‒2014 research.

The people whose practices I framed as open scholarship or open research profiles were not conventional public intellectuals, with audiences in mainstream mass culture and platforms in the New York Times or the BBC. Rather, they tended to have smaller but still sizable audiences cultivated primarily through social rather than mass media channels. Not all engaged with their audiences using a participatory or collaborative approach, especially as the scale of their audiences grew, but all had developed their initial digital presence based in part on many-to-many rather than one-to-many communications.

Amongst these relatively early adopters of academic Twitter, the leaders and most visible identities did not all have (or at least advertise) institutional affiliations in their profiles. The voices that were most visible in these ongoing, interwoven blog and Twitter discussions were not necessarily senior faculty or administrators. In fact, self-identified mid-career and senior faculty did not appear to be especially present in Twitter conversations related to higher education, at least in my observations; rather, early-career researchers, PhD students, instructional designers and institutional staff, journalists and rare high-profile academics made up most of the conversation, though it was not
always clear what a contributor’s relationship to academia might be. Thus, those who were leading conversations about the intersections of higher education, digital technologies and scholarship in the open in the first six or seven years of Twitter seldom appeared to be the people directing those conversations in institutions. Rather, leadership as enacted in participatory digital networks, represented by academic Twitter and higher education blogging, emerged as a separate sphere or trajectory of influence, largely uncoupled from formal academic status markers and based primarily on contribution and visible engagement.

‘THE CONVERSATION’

My 2013–2014 doctoral study (Stewart, 2015a), suggested that the concept of ‘the conversation’ was central to that separate trajectory of academic leadership and status. My study was a small ethnographic investigation of scholars from a variety of locales and institutional status positions within the English-speaking academic sphere. In it, I concluded that sustained visible participation in open digital conversations on higher education themes created opportunities to engage in what Boyer (1990) called scholarship of integration and application (Stewart, 2015b). I found that all participants ‘appeared to be engaged in curating and contributing resources to a broader “conversation” in their field or area of interest rather than merely promoting themselves or their work’ (Stewart, 2015c: 305). This concept of contribution to the ‘conversation’ – which varied from user to user in my study but was repeatedly cited as valued, both for self and in others – was the channel by which academic Twitter users developed perceived leadership status via open scholarly profiles and recognizable contributions.

There are many different sub-networks of conversation in academic Twitter. While my study included scholars from disciplines – and thus conversations – as diverse as business and chemistry, the conversations I engaged with personally included those loosely organized around edtech and open education themes, but also Digital Humanities, K-12 teaching, PhD studies and higher education itself as a topic. Along with engagement from and within the sciences, those appeared to be among the dominant disciplines and conversations in academic Twitter in my early years, and many of the most visible scholars on the platform came in some way to be connected to conversations on those themes, at least temporarily.

As the conversations were necessarily cross-institutional and often transnational, their focus was seldom operational – except in the case of how-tos about particular teaching or technical projects – and more likely to focus on theories, possibilities and ideals that could be developed and debated by people across differing contexts. Thus leadership status in Twitter and blogging tended to bear some relationship to a person’s topical engagement and capacity to contribute to ideas beyond disciplinary specialization.

Many of the participants in my formal doctoral study of 2013–2014 were connected to ongoing conversations and sub-networks tied to the themes above, particularly about the state of the digital in higher ed and/or the state of higher ed in contemporary society. Most though not all individuals framed as open scholars in my research had at least some semblance of a tie to institutional higher education and participants and volunteer sample profiles came from a broad spectrum of academic disciplines, as well as from locations around the globe. Canada, the US, Mexico, Ireland, Italy, South Africa, Singapore and Australia were all represented among my participant sample, with the UK additionally represented among sample profiles used to examine perceptions of influence and identity.
Additionally, both in my research and my experience more broadly, there tended to be a common critical orientation among the most visible profiles and identities, wherein technologies in education were generally approached from an informed and informing analytic perspective. Some open and online leaders whose academic status was divulged either in their profiles or in open conversations acknowledged that their digital networks enabled them to engage in a level of critical learning and innovation regarding technologies that their departmental colleagues could not provide. For them, as for the sizeable network of PhD students I (happily) discovered, who had found each other through the #phdchat hashtag and other means, blog networks and Twitter feeds were referred to as ways of connecting with others over areas of mutual interest and inquiry. These areas of interest were not necessarily shared or deemed valuable by their face-to-face colleagues. But those networks also allowed many contributors to build leadership profiles – basically, becoming known as recognized and valued thinkers in a given area – that they might have struggled to develop in solely face-to-face or institutional contexts. Essentially, the academic Twitter feed and the distributed network of blog posts that it linked to served as a hub of interdisciplinary and public intellectual engagement for professionals interested in emergent and topical issues in the broad field of higher education. Active and sustained participation in ‘the conversation’ and the network sustaining that conversation created visibility for the identities under whose profiles contributions circulated. The international scope and scale of the conversation and network and the fact that both were somewhat open and thus permeable by new profiles, meant that open participation could facilitate greater connections and name recognition for a contributing scholar – over time – than any single department or faculty or conference experience could.

Thus ‘the conversation’ in digital networked participation appeared both in my study and in my personal experience as an informal participatory leadership sphere, a public in which the critical issues of higher education and change are aired and debated and important narratives about those issues shaped.

During the years of my introduction and research into academic Twitter and the conversation it enabled and sustained, that participatory leadership sphere seemed to serve as a relatively collegial public. Many participants in my study referenced Twitter as more intimate and supportive, than their institutional environments, and often less competitive or cutthroat (Stewart, 2015c). Since digital scholarly practices are not as bound to gatekeeping and formal prestige hierarchies as practices tied to academic publishing or to formal tenure and promotion procedures, notions of leadership in the open developed outside a zero-sum economy. To be recognized as a leader in a conversational, collegial public does not require credentials nor preclude the recognition of other people. While attention and engagement are not infinite, they are more plentiful than permanent academic positions and spaces in prestigious peer-reviewed journals. The capacity to self-publish and share ideas openly, within a broader conversation, creates an environment in which scholars can be seen to have greater control over what they become known for than they do when blind review and limited resources are givens. Additionally, in the participatory leadership sphere of early academic Twitter, reputations were developed in part based on performative relationality, and the hyper-personal model of communications (Walther, 1996) common in digitally-mediated engagements. As a result, scholarly leadership in this sphere tended to privilege collegial behaviours during that early period.

IDENTITY AT THE CORE
That idea of open scholarship as a separate sphere or trajectory of academic influence and leadership status, uncoupled from formal markers, was one I both investigated and personally experienced during the course of doctoral research.

In my study, I found that developing open or network-based leadership roles appeared to hold particular benefits for graduate students and early career researchers. This did not mean that more academically established open scholars did not necessarily experience the same benefits, but that those perks would generally not have been extended to junior colleagues without the visibility and name recognition that open engagement created. Open research profiles circulate differently from purely institutionally-focused research profiles, particularly among early career researchers. Through ongoing participation and contribution via blogging and Twitter, a number of participants in my study found that their work became known within their field or within the field of open scholarship in general, thus achieving visibility and recognition among both peers and media. Their circulation in the open attention economy allowed their work to be seen and taken up as the work of leading peers, rather than the work of junior colleagues. The perks of this recognition meant that they tended to report a sense of respect for their work in the open that they did not necessarily feel amongst institutional colleagues, but also that new trajectories opened for them, as identities in an open scholarship marketplace. Some reaped academic benefits such as keynotes and book contracts thanks to work done in the open; others experienced media coverage of their work or benefited by being able to engage in research grants and projects with leading scholars they’d encountered in their network.

These benefits of circulation – connections, name recognition and visibility – hold true at least within fields and disciplines related to open practice and digital technologies. These areas tend to receive perhaps broader-than-usual interest from media and from conference organizers, due to the fact that all fields are impacted by digital change and thus expertise in this area has particular cache. Additionally, the broader network of open educators does tend towards a practice of collaboration and support of its junior colleagues rather than competition, at least in my own experience and that reported by my study participants. Not all experiences or areas of open scholarship necessarily operate identically.

Within this sphere, however, I see the aforementioned benefits of open participation and leadership as rooted in the way identities and profiles are foregrounded in digital engagement. The only way to circulate and engage is through the cultivation of a visible identity, which may or may not be tied publicly to any form of institutional role. Thus, if a profile accrues visibility and perceived legitimacy as a contributor to ‘the conversation’, the individual behind that profile can become known to some extent within the network, regardless of whether or not the individual carries influential institutional signals of status.

However, as Phipps (2013) notes, a network ‘does not diminish the importance of the institution to the individual . . . the structures to support individuals form the platform upon which profiles are built’ (Phipps, 2013: 14). While this is not true for every digital scholar or open educational researcher, many do have at least one foot in institutions, in no small part because that’s where the money is. While employment in higher education is increasingly precarious, the monetization of open and digital educational spaces by practitioners has been minimal; opportunities for compensated work in open scholarship tend to be limited to writing or to compensated workshops or talks. Often it is institutions or occasionally digital companies, offering the contracts to give these workshops or talks and network visibility appears to be one of the key pathways through which speakers and presenters are invited. When institutional committees look for fresh voices for keynotes and invited talks, members who are also open scholars may think of and suggest leading profiles from their networked engagement.
Once an individual is seen to circulate as a leading thinker, a keynote or simply a name in a given field, they end up benefiting from that academic reputation even if they do not have formal academic status to match. During my study some sample Twitter profiles without any institutional status at all were nonetheless recognized as leaders in the higher education field by participants. This recognition and esteem was based on the name these profiles had built through public writing and through keynoting and other freelance work that intersected with institutional academia.

I benefited similarly: based in part on my network connections and in part on the MOOC hype that brought that aspect of my research to mainstream visibility, I began to be offered keynote opportunities and invitations to contribute to events as a leader or expert, rather than as a graduate student. After the 2015 conferral of my PhD, those invitations have continued, even though I do not at the time of writing hold an academic position and have taught as an adjunct while working in higher education and government education staff roles. For me, as a graduate student in a small faculty in a regional university, my open research profile and visibility in the network gave me academic connections and status I simply could not have achieved without that digital access, no matter the excellence of my scholarship or the efforts of my supervisors. It offered me a collegial community of scholars interested in my area of research and translated into material benefits and privileges that keep me connected and visible in the realm of institutional scholarship, even while my day job does not.

THE DIGITAL IS NOT FLAT

The fact that collegiality and increased visibility were common both in my own and my participants’ experience does not, however, mean that academic Twitter is or was ever an ideal participatory space, without mitigating power relations. Nor does it mean that participation in digital academic networks is inherently or entirely democratizing.

Admittedly, open leadership and scholarship practices do differ significantly from the hierarchy of institutions. Leadership in higher education is often highly stratified, both in academic hiring and in senior management. That stratification by academic role is far less visible in open leadership circles. Amongst the blogging and Twitter communities I observed, senior academics and administrators regularly engaged with junior academics and graduate students in relational terms that served to emphasize commonality and shared learning rather than status differentials.

But, while role hierarchies may be less visible in digital and open engagement, due to the emphasis on identity rather than role, societal biases – particularly racism and sexism – are replicated powerfully in digital spaces. Particularly since 2014’s #gamergate, the systemic social hierarchies that govern whose ideas – and voices – are received as natural and neutral have been aggressively defended in SNS and digital spaces. Women and especially women of colour who engage in the open have been shown to have their voices and opinions received very differently depending on how their profiles present their race and gender (Nesbitt-Golden, 2014).

Additionally, social media metrics can create stratification and power imbalances of a different kind. Metrics include the number of followers or friends a profile may have. My own research found that those engaged in participatory, open scholarship were aware of their own metrics and those of others, but that metrics were not seen as ends in themselves (Stewart, 2015c). Rather, metrics tended to be understood within open leadership circles as part of a more complex calculation of influence, while also standing as shorthand for the amount of engagement and attention a profile can generate from the network. However, in recent years, with the rise of call-out culture (Ahmad, 2015) or the use of
scale and viral sensationalism for the purpose critiquing, shaming or otherwise directing the behaviour of others, rather than for peer engagement, having the capacity to reach large audiences becomes disproportionately valuable. Users with large-scale metrics in effect have a structural power position over those whose follower counts are small, due to the capacity to wield scale and visibility within the platform.

To an extent, the platforms and networks themselves are neither inherently hierarchical or a hierarchical, they simply privilege different structures of power than institutions do. But when used for participatory purposes, the relationality of open engagement may to an extent mitigate hierarchy at the metrics level. It is highly questionable whether even well intentioned participatory engagement among open scholars mitigates the systemic racism and sexism that marked bodies experience both offline and on.

THE PRESTIGE ECONOMY OF OPEN

In essence, open and digital practices comprise a scholarly leadership sphere that is complex and fraught in very different ways from the complex and fraught world of institutional leadership, both in its scholarly and administrative trajectories. The ‘stuff of reputations’ (Willinksy, 2010) in academic Twitter and blogging is what I eventually labelled in my research as a ‘scholarship of abundance’. (Stewart, 2015b); a sphere in which leadership and status stem from the capacity to stand out. This capacity is based in the cultivation of a recognizable profile within an influential network.

The prestige economy of open scholarship revolves around circulation. While in conventional institutional scholarship, those who wish to contribute must navigate the tacit tyrannies of hierarchy and blind peer review, in the open, scholars need to navigate the fraught sphere of getting their work seen and read. Prestige, therefore, becomes tied to capacity to generate legible forms of visibility.

Even in an attention economy, visibility in scholarly spheres is not just about being seen, but about what one is seen to be. In both conventional and open academic spheres, legibility and legitimacy remain tied to what is recognizable to others. Open scholarship is not an environment without standards, though it does have to be more open and flexible in its standards than any institutionalized set of criteria would be. Visible connections to entities familiar to the beholder often serve as legitimating, especially in participatory environments where contributors tend to be open to exchange.

In open scholarship, connections also confer legitimacy and prestige, while helping get work seen and read. My research found that most active open scholars share the work of peers as much or more than they share their own (Stewart, 2016), which serves to both circulate work and to circulate their own profile in connection with others, increasing visibility and recognition. While open scholarly leadership tends to be less tied to particular institutional or journal-based status markers as signals of prestige, connections to well-known media entities and to the names of other well-known scholars do appear to confer legitimacy and recognition within open networked participation.

Additionally, for open scholars who continue to contribute to conventional forms of scholarly dissemination, networked participation can have additional circulation benefits. As Terras (2012) and Mewburn and Thompson (2013) have shown, profiles with high networked engagement can generate high levels of circulation and citation for their work, whether it originates in the open or in traditional academic formats. Given the low reading and citation rate that is reputedly the fate of so much academic output (Eveleth, 2014), this capacity confers a double advantage on open scholars who
remain tied to institutions and to conventional academic publishing. They can build a name for their open work, while amplifying readership and citation for their traditional papers, thus establishing a high citation rate.

Prestige and influence within open circles, then, does end up overlapping with institutional status even though the terms are different. This happens because ultimately open scholarship’s rewards and status cues remain tied to institutional reward systems. While open scholars can generate new forms of attention based on circulation of blog posts and other media contributions, they can also leverage this attention into institutionally-based rewards such as keynotes and generate higher readership and citations for their conventional journal articles.

This does not mean that success in the prestige economy of open necessarily translates clearly into any kind of institutional success. McMillan Cottom (2015) has analysed microcelebrity within contemporary academic capitalism. While she notes the deployment of ‘engaged academics as an empirical measure of a university’s reputational currency’ (McMillan Cottom, 2015: para. 3), she also observes that critically engaged scholars are disproportionately from marginalized groups, societally and institutionally and that their precarity ‘makes them vulnerable in knowledge production that traffics in digital attention economies’ (McMillan Cottom, 2015: final para.). Similar, Costa (2015) asserts that digital and open scholarship can be perceived institutionally as a deviant trajectory, both illegible and illegitimate to colleagues or superiors unfamiliar with the terms of the alternate prestige economy.

In spite of the fact that open scholars face risk for their engagement, both in viral attention economies and in institutions that may not understand their version of academic identity, the benefits of developing status and a leadership profile in ‘the conversation’ in one’s field do still seem to hold for many active, participatory open scholars. In a time of limited academic hiring (Clawson, 2009) and debated oversupply of PhDs (Else, 2015; Griffey, 2017), open practice offers scholars who wish to contribute a sphere in which they can do so and a prestige economy they can enter and later leverage into forms of recognizable academic prestige, if successful.

CONCLUSION

Overall, my personal experience with open scholarly practices and academic Twitter seem to align with those of many of my participants and colleagues observed in the open. Scholarly participation in open digital networks – and particularly the sustained development and performance of identity through open profiles – appeared to serve to acculturate scholars to a participatory model of practice and leadership that builds capacity for engagement and contribution not consistently available through institutional academic participation. As open scholars build profiles and networks they engage in a prestige economy significantly from the model of credentialing and externalized status signals of formal academia, while often accruing benefits within institutional scholarly circles as well. Ultimately, leadership in open educational spaces is based in circulation and represents a trajectory of influence and reputational development based primarily on contribution and visible engagement. However, while this trajectory’s entry points sit outside the academy, its destination can end up overlapping with the prestige economy of conventional institutional academia, in the form of influential contacts, keynotes and other monetized contracts and name recognition for one’s work.

If you had told me when I started on Twitter more than a decade ago now that it would become the site and source of my eventual scholarly career, I’d have laughed. But ten years on, as challenging as I find Twitter in an era of Trump-generated sensationalism and constant outrage, I remain and (mostly)
thrive. This is less thanks to Twitter as a specific platform than to the legion of bloggers and scholars and thinkers and friends that I have encountered there, as well as through my blog, during my years of engagement and circulation. I have had some experiences of harassment, sexism and vulnerability and am wary of recommending that new scholars take a path that looks exactly like my own. But the trajectory of openness and acculturation to participatory practice that I happened to find in particular digital spaces is not solely limited to – or perhaps even centred on – those platforms. It is that trajectory of contribution, community and leadership capacity that I believe matters for emerging scholars and thinkers in a world where institutional participation is increasingly regulated and constrained. I encourage others to seek spaces where they, too, can contribute to open, participatory communities of knowledge-building, both in and outside institutions.
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Chapter 8 - Sharing knowledge at a research university: experiences from the London School of Economics

Sierra Williams and Chris Gilson

INTRODUCTION

Digital technologies offer universities a number of new challenges and opportunities, as is apparent in every chapter of this edited collection. Higher education is certainly not immune to the redefinitions of our digital landscape. From student recruitment to online learning, the digital world continues to shape and change (perhaps in some instances even ‘disrupt’) what a university is and does. Taking centre stage amongst this digital revolution is how universities and their academic staff communicate their value, broker their knowledge and expertise and engage externally with new public audiences and spheres. Where previously academics primarily communicated via the pages of academic journals, books and monographs, their scope for engagement – both internal and external – has been vastly increased via digital technologies and social media.

Against the backdrop of digital opportunities in higher education and the growth of interest in boosting the impact of academic research, research staff at the London School of Economics began experimenting with coordinating their own academic blogging platforms in the mid to late 2000s. In this chapter we look at why new technologies came to play such a vital role in shifting approaches to research communication and what institutional strategies and tools were specifically adopted by the LSE during this time. We end with a look at how blogs and social media are being used to give better visibility and impact to researchers’ work and what can be done to sustain this effort going forward.

DIGITAL SCHOLARSHIP AND NEW OPPORTUNITIES FOR RESEARCH COMMUNICATION

Academic research, still one of our universities’ primary involvements and activities alongside teaching, depends on effective and efficient communication and is, thus, uniquely placed both at the forefront of advances in information communication technology and at technology’s behest. As such, the lessons learned on research communication in the digital age and how universities are responding to the challenges of adopting new tools and technologies are essential for understanding higher education today. To understand the role of new technologies in research communication, it can be useful to take a step back and consider the many different, sometimes overlapping activities that research communication encompasses. In Mollett et al. (2017), we reference a lifecycle framework for modern research, which encompasses Inspiration, Collaboration, Primary Research, Dissemination, Outreach and Impact (Figure 8.1).

All of these elements are integral to the research process and, crucially, all of these elements are highly social processes. Whilst universities are involved in hosting and facilitating all of these aspects to some
degree, Dissemination, Outreach and Impact, have received considerably more attention from administrators and decision-makers in light of heightened pressures for publicly-funded research to demonstrate firm outcomes in society – the so-called Impact Agenda visible in higher education assessments such as the UK’s Research Excellence Framework and Excellence in Research for Australia.

Source: Adapted From Mollett et al. (2017) – Sierra Williams CC BY 4.0.

Figure 8.1 Research lifecycle

Alongside the Impact Agenda, new digital innovations in scholarly publishing in the form of digital-first and openly available research outputs have placed additional attention on adjustments to research communication. Questions began to be asked by senior university administrators around the world about: First, how digital technologies could be employed to provide more people access to research; and second, how universities could leverage digital technologies to demonstrate that research is relevant to society.

It is tempting to see these questions and shifts as reflective of a new digital academia, where access, inclusion and the democratization of knowledge stand as the guiding light forward, opposed to the isolated ivory towers and dusty journals of yesterday. And while there may well be significant benefits to these transformations, university leaders’ focus on efficiency in outputs and outcomes owes at least as much to the ‘new public management’ trends in public sector reform than it does to networked and digital affordances. From the 1980s, new public management approaches in the UK focused on improving the performance of public administration bodies by adopting private sector management models (Rhodes, 1994). Indeed the language of outputs and outcomes have dominated corporate communications models dating at least back to the early 1990s (Macnamara, 1992). Again, this is not to suggest digital engagement, social impact and access to research are neoliberal traps or unworthy ends but, rather, that the language of digital revolution serves many different purposes in today’s higher education landscape.

It is important to note that university administrators now have little choice but to determine how best to react to academics who engage in blogging and other social media activities. More than a decade
on from the launch of major social media networks such as Twitter and Facebook, such activities are becoming ubiquitous in the academic sphere; administrators no longer have the power of veto – if they ever really did. Instead, administrators must choose between doing nothing and offering assistance and guidance for their academic staff who are keen to engage in social media and blogging outreach activities.

The confluence of corporate communications efficiency, the social remit of academic research and the proliferation of easy-to-use digital platforms is the landscape in which academic blogging emerged. This environment opened the door to a number of opportunities for how research could be communicated, including the medium, form and style.

Although academics had created the World Wide Web in the early 1990s in order to facilitate research communication between and among colleagues, maintaining a website required a degree of technical knowledge which largely confined this practice to a handful of particularly technical disciplines (Berners-Lee, 1990). But by the late 1990s and early 2000s there were a number of free blogging service platforms which significantly lowered the technical bar of entry. Using a service such as Wordpress, Blogger and, more latterly, Medium, individuals could now set up their own blog in under an hour and post new entries without having to know a lick of HTML or other programming languages.

Fundamentally, a blog is a regularly updated website written in an informal style. But there are a number of other important differences between the two as Table 8.1 illustrates. Perhaps the most important distinction between the two is that blogs are dynamic while websites, on the whole, are static entities. Websites are sources of information that tend not to change on a regular basis: staff directories; corporate policies; manuals and other important resources. Blogs by contrast can (and should) change on a monthly, weekly, daily or even hourly basis. This in and of itself means that blogs lend themselves towards being an outlet for news or commentary on current events or trends.

As mentioned, blogs have significantly lower barriers to entry compared with websites. Blog platforms are almost entirely web-based with little or no technical knowledge required to establish and maintain them. Websites generally require more specialist knowledge for their creation and operation and often specific non-web based applications are required.

<table>
<thead>
<tr>
<th>Blog</th>
<th>Website</th>
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</thead>
<tbody>
<tr>
<td>Regularly updated</td>
<td>Static</td>
</tr>
<tr>
<td>Interactive, community building</td>
<td>One-way</td>
</tr>
<tr>
<td>Commentary and insight</td>
<td>Transactional information or news</td>
</tr>
<tr>
<td>More informal</td>
<td>Often formal</td>
</tr>
<tr>
<td>Very easy to publish new content</td>
<td>Dedicated CMS program needed, e.g. Dreamweaver</td>
</tr>
<tr>
<td>Easy to do at low cost</td>
<td>Quality=cost</td>
</tr>
</tbody>
</table>

Source: Authors.

Table 8.1 Characteristics of blogs versus websites

Given that anyone, by definition, can start a blog for little and no effort, what then marks out academic blogs as different – and trustable? In sum, evidence. Like journal articles and other academic outputs, academic blogs, be they from one author or part of a multi-author blog collective, are almost always backed up by some form of evidence. This may be in the form of a peer reviewed academic study by the blog’s author which has already been published and then linked to, a new study’s preliminary findings or the accessible work of other authors.
In terms of blogging strategy, from an institutional point of view, universities which wish to encourage their academic staff to blog have two options: Either direct them to outlets which can host their own work such as multi-author blog collectives or provide training on how to set up their own externally hosted blog; or establish and host their own blog platforms. The LSE has chosen the latter tactic, and with great success.

INSTITUTIONAL STRATEGIES AND TOOLS ADOPTED BY LSE

Academic blogging at LSE started, unsurprisingly, in the Centre for Learning Technology (now the Learning Technology and Innovation), part of the Information, Management and Technology academic service division responsible for working with colleagues across the School to promote the integration and use of technology in teaching, learning and assessment (see http://lti.lse.ac.uk/about/). Blog posts on the CLT blog date back to 2005 and early use was primarily internal link sharing on the Virtual Learning Environment, primarily for staff use (Lingard, 2005). The blog is still in use today and remains a knowledge-sharing mechanism for staff and students. Importantly, this blog provided the Wordpress infrastructure for blogging at LSE to easily scale.

In 2010 academic blogs, while not rare, were mostly the domain of individuals working alone, rather than institutionally-based or sponsored offerings with dedicated editors. It was against this backdrop that the London School of Economics’ Public Policy Group (PPG) perceived a need for an academic ‘referee’ for the various policy and political debates which were occurring in the lead up to the 2010 General Election. To fill this need, the LSE PPG approached the CLT for help with launching a platform, Election Experts. This would be a daily updated resource for students, the media and other academics providing evidence-based election commentaries from a wide range of academics, both from within and outside the LSE.

The Election Experts blog was a resounding success and, as a result, further funding was found and the blog became the LSE British Politics and Policy blog: the LSE’s first foray in a public-facing blog aimed primarily at dissemination of academic work. It was also the first blog to be situated in an academic centre as opposed to an administrative division. One full-time editor was employed ‘to raise the level of debate about the coming election by publishing evidence-based commentary’ (Mollett et al., 2017: 7).

The primary motivation behind the Public Policy Group’s decision on a blog format instead of a more traditional academic website featuring election-based research was audience. What the PPG required was a neutral space for the mediation of academic work with wider public audiences. According to analysis by Bastow et al. (2014: 54f), LSE Public Policy Group researchers supporting the public-facing blog and authors of the Impact of the Social Sciences, the ‘footprint’ of academic work varies largely by discipline, with social scientists visible in relatively fewer ‘mediating’ spaces than STEM researchers in traditionally academic spaces. Thus, the LSE British Politics and Policy blog aimed to be part of this mediating landscape – in between a more mainstream journalistic format and a traditionally academic format. Political scientists’ work (and indeed social science as a whole) is certainly visible in online spaces, in formal government and civil society reports and particularly in traditionally academic spaces like library repositories and academic journals, but a blog format could be seen as more explicitly accessible in its departure from static academic websites and its more informal, regularly updated format.

The style of this politics blog followed other commentary-heavy political blogs of the time. Due to the significant number of views for the blog during the run-up to the election and over, the British Politics
and Policy blog continued to feature regular updates on political commentary written by academics and its readership grew to reach 200,000 visitors in its first year. The Public Policy Group launched six additional public-facing blogs over the following five years:¹

- European Politics and Policy (EUROPP);
- LSE Review of Books;
- Impact of Social Sciences blog;
- USA Politics and Policy (USAPP);
- LSE Business Review; and
- LSE Brexitvote.

Each blog remains staffed by one full-time editor or a combination of part-time editors. Funding for these roles has been sourced through a variety of short-term streams including, research project grant funds, departmental matching and fixed knowledge exchange and impact funding.

Drawing on the ease and availability of blogging platforms and the broad mission of the London School of Economics ‘to create and share knowledge addressing major social challenges’, public-facing blogs were found to be both feasible and strategically aligned. With minimal overhead costs and the ability for the infrastructure to scale easily, academic blogging could be technically-provided and institutionally-supported with minimal campaigning. Having a few well-positioned allies around the School, both on the academic side and the administrative side gave enough space early on for the blogs to grow year on year.

In addition to the support for academic blogging efforts by individual researchers and universities, there has also been criticism and backlash. The biggest issue that the LSE blogs faced early on was convincing an already overstretched research community to contribute their time and expertise to writing an 800-word piece. In the early years of the LSE blogs’ operations, many academics had little experience writing short form blog or op-ed pieces. In these cases editors had to work closely with potential authors to train them in the art of writing for blogs and to assist them in using a different type of approach to that used in more traditional academic outputs.

With no formal recognition in place for knowledge exchange through academic blogs, there were, and still are, few career incentives for academics to write informally and generally on a topic of interest. In some cases, academic researchers are punished for appearing ‘too public-facing’ and, by extension, less serious than colleagues focused on conference papers and formal academic publication. For many colleagues, academic blogging was just one more additional burden on top of a heavy teaching workload and professional responsibilities such as writing journal articles, conducting peer reviews and attending conferences.

To overcome these barriers, the LSE blogging team extended invitations to academics from not just one institution. At the LSE we have had the benefit of being the ‘early adopters’ of academic blogging, but there are now many excellent university-run blogs in the UK: UCL, Nottingham, Manchester, Exeter, Oxford, Queen’s University Belfast, Bournemouth, KCL, Queen Mary, all host blogging content. And there are even more examples of department-run blogs not hosted on university servers.

¹ Since 2010, the LSE has launched a number of other multi-author edited blogs outside of the Public Policy Group.
But quality and regularly scheduled updates from these blogs can vary. In an age when most universities have social media profiles, it seems strange that there is such a variable and limited presence of university blogging platforms. Only one of the above mentioned universities links to their blogs from their homepage. At the LSE, where blogs have been an active feature for years, we are still working on how to build a sustainable network across the School.

HOW BLOGS AND SOCIAL MEDIA CONTRIBUTE TO HIGHER EDUCATION VISIBILITY AND IMPACT

So how can universities understand the actual successes of their digital platforms? A significant barrier to the development of academic blogging at the LSE has been the lack of consistent funding sources. While many individual academics and communications professionals in the sector recognize the importance of digital engagement, if we do not develop an understanding of what these efforts are delivering, these activities will largely go unrecognized and unfunded. As we have explored in the previous section, digital media platforms are shaping the outputs of research dissemination – from blog posts to videos to data visualizations. But while the containers for research may have changed, it is the outcomes that remain of primary importance. Given the digital change universities have undertaken, it is now vital for university communications teams to understand what this change has delivered and, equally, what it has not.

At the LSE, we can group the benefits and successes of our university run blogs in three areas: professional development, the extension of academic values and widespread research communication. At a time when academic staff are under considerable funding and administrative pressures, academic blogging through university-managed blogs at LSE offered a unique opportunity for professional development and online learning. Writing for general audiences and sharing on online platforms are skills like any other and university blogging structures created supportive spaces for colleagues to learn these skills. The success of the blogs at LSE can be measured by their ability to train staff in a range of online communication styles beyond the journal article and conference paper.

With the provision of training, the LSE blogs were able to develop audiences for its evolving content. By supporting these blogging spaces, the LSE reaped the benefits of a significant driver of web traffic. Currently, the LSE receives over 20,000 unique visits to its blogs each day. One in nine hits to the LSE website go to one of the blogs (Arrebola and Mollett, 2017). The university has proven its ability to function as a primary content creator and by prioritizing accessible forms of research communication, can organize its platforms to proactively inform public discourse.

A less obvious success of the LSE blogs is the way they have been able to prioritize and amplify academic values. University blogs are mediating platforms that bridge the world of research with our everyday issues. Digital media offer unprecedented opportunities for universities to be content creators. Rather than feeding a 24-hour news cycle, academic blogs can prioritize rigour, data replication and in-depth perspectives. Complex ideas are given the space and support to thrive and through the active maintenance of these university-run digital spaces, primary research is reaching wider audiences in information-rich ways. The LSE blogs proved researchers themselves could play a more primary role in sparking conversations beyond their research’s appeal to narrow research news cycles.

Though discussions about research impact tend to focus on public outreach and research’s role external to the academy, effective research communication through blogs and social media is also appearing to play a role internally. In fact, 2013 analysis of academic blogs suggests that the intended audience of most academic blogs is actually other academics (Mewburn et al., 2013). The time-saving
benefits of 1000-word academic blogposts to 8000-word paywalled journal articles may be clear, but it is less clear how widespread blogs and social media are being used in the academy for research communication purposes.

For researchers already on social media, content from academic blogs and LSE’s blogs in particular are shared widely. Research by Ke et al. (2017) published in PLOS ONE looks at what URL domains scientists share most frequently (Figure 8.2). Though scientific domains are limited overall, the blogs.lse.ac.uk domain is amongst the top listed scientific URLs, performing better than traditional publisher domains like Taylor and Francis and Springer. Though the conclusions we can draw from this are limited, the fact the LSE blogs have grown to become a top shared source in such a short amount of time compared with the other domains is a stated success in and of itself.

CONCLUSION

By exploring the particular developments behind the public-facing blogs at the London School of Economics a clearer picture emerges of why universities are turning towards digital engagement. There are a number of factors shaping the simultaneous embrace of and resistance towards academic blogging and social media, including the university administration’s own developing understanding of its impact and public benefit. The success of the LSE blogs in gaining widespread visibility in a relatively short amount of time can be attributed to the growth of interest in online experimentation amongst its academic staff, alongside institutional alignment with a focus on impact and research outcomes.
The future success of the LSE blogs and university-managed academic blogging spaces more widely rests on how institutions balance this relationship between the experimental and collaborative spirit driving the uptake of digital media in universities and the administration’s need to manage risk and deliver efficient communications outcomes. Taking the LSE as one case study, the benefits accrued are worth the effort. In an ever changing landscape, the challenge remains for universities to support the diverse, collaborative digital efforts emerging from research and learning spaces and adapt their institutional structures to accommodate such experimentation.
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Chapter 9 - Effective online communication for policy advisors: experience from the Bruegel think tank

Giuseppe Porcaro

INTRODUCTION

Digitization of content has now been present for decades. The gradual expansion of the possibilities for accessing content online, via several different formats and platforms, constitutes an important element for targeted and effective communication and research impact. It is also a matter of reach: according to a recent report by We Are Social (see Kemp, 2017) half of the world’s population is connected to the web and the figure rises to 76 per cent for the European continent, with 37 per cent of the worldwide population connected at least to one social media, rising to 49 per cent in Europe.

This data should be coupled with the recent trend in communication of research products to move beyond dry facts to build narratives and stories. Online communication multiplies the possibilities to frame the results of research in ways that respond to specific audiences’ appetites for accessible and engaging messages. The opportunity to build narratives in a digital environment opens the door for many more methods for effective research communication.

This chapter argues that, despite this background, online tools are not an automatic recipe for success. They should be put in the context of an overall communication strategy that has clearly identified goals, for both online and offline channels – such as print distribution, face-to-face events or traditional media outreach – taking into account their specificity and the interaction between online and offline.

Second, I will highlight the challenges and sketch the methodologies to map and segment audiences in general, as well as in the specific case of research institutions such as think tanks, where the map of influencers is very dynamic. Think tanks are organizations that perform research which is oriented towards advising policy change. And policies are not shaped solely by traditionally influential individuals, but also by certain sections of the wider public, who are more often and more effectively shifting the political discourse in alternative directions.

Third, I will discuss how to engineer tools to reach specific audiences and to shape messages effectively by using specific platforms. The case study of Bruegel, an international economics think tank based in Brussels, will be used throughout the chapter to support a wider reflection on the challenges, common to other research institutions as well, including universities.

As a relatively young institution, which began operations in 2005, Bruegel is an interesting case study regarding the evolution of the use of online tools within a decade. Since the beginning it had published its research online, but only a few years later the global financial crisis and the resulting rapidly changing environment led us to the development of a much more comprehensive bias towards online
distribution of research versus traditional printing and mailing, to cope with the need to respond quickly to the external environment with timely analysis and policy-oriented research. Moreover, being a start-up, it had been easier and more cost-effective for this think tank to adapt its communication tools to technological changes, compared to older establishments which may have previously made significant investments in legacy technology. Lastly, and significantly, Bruegel was relatively late in adopting some additional digital tools, such as a blog or social media channels, because it waited to craft a solid, integrated strategy before launching them.

STRATEGY FIRST

It is tempting for many organizations and institutions when setting up an online communication strategy to consider the wealth of possibilities available and drown in the multiplicity of tools, driven by the perceived need to be present everywhere and to be seen as up-to-date, cutting edge communicators. However, the strategic goals of an organization cannot always be satisfied by the plethora of social media or by digitizing every single item of content that a research institution is producing. Not everything should necessarily be online and when online tools are used, they also need to be thought of carefully.

Saying ‘no’ to an idea is very hard, especially when your competitor might be doing exactly the same, and successfully, and the first instinct is to emulate others. It is tempting to want to do everything and be everywhere. But a strategic approach to communication should avoid doing things solely because everyone else is doing it. Is it now better, as research organizations, to be perceived as more brilliant in particular significant specialized areas than be mediocre in many?

But more importantly, the decision to pursue any particular idea should always be viewed in terms of the mission and wider goals of the organization. For example, focusing solely on social media distribution might not necessarily be the most optimal use of the digital tools for the specific goals of our organization. If the aim of an institution, for example, is to primarily participate in the debate in the academic community it would be ineffective to use a channel such as Instagram or Snapchat, which would be better suited to reach out to students, for instance.

If you have a badly-defined goal and your only measure of success is based on the size of the numbers involved, you may think you are doing a good job, but this is not always the case. At Bruegel, for example, our mission is to improve economic policy-making through high quality and independent research. Therefore, our goal is not simply to distribute our content but to have the reader change something as a consequence of our research. To achieve that, we need to understand what each reader can contribute in change (specifically in changing economic policy) and what will motivate them to do so.

Every time we consider updating our communication strategy we always ask ourselves if and how it will help us achieve that goal and how the tools chosen might compare to other available tools and resources that would need to be deployed to implement it. However, before even starting to detail the methodologies and tools to implement the strategy, we ask ourselves who are the audiences we are addressing.

DEFINE YOUR AUDIENCES
Audience segmentation is one of the foundations upon which the communication effort is built: What is it, then? And why does it matter so much?

Before proposing a formal definition, it is useful to approach the question intuitively. Each of us is often engaged in persuasive or educational communication efforts directed at colleagues, family, friends and acquaintances. In each case, it is second nature to adapt the style and content of our communication to the idiosyncrasies of our audience. We may threaten, cajole or plead with our children; temper our requests with terms of endearment in conversation with our significant other; modestly allude to our achievements when meeting with our supervisors. What is appropriate in one case will not, normally, be appropriate in another. The contexts, the expectations, the needs, the frames of reference of our audience in each case differ, sometimes dramatically. By the same token, the expectations, needs and frames of reference of audiences for communicating research results or in the context of higher education institutions differ as well.

Unfortunately, the nature of these differences is not always as obvious. Ideally, we would have intimate knowledge of each audience member’s concerns, fears, interests and desires and adjust our communication accordingly. Instead, we are confronted with the necessity of communicating to a public or community that is largely faceless with the exception of a few cases with whom we happen to be acquainted. We must make a limited number of distinctions amongst our audience and group them in a way that permits us to tailor our messages to persons with widely varying concerns, needs and levels of knowledge.

Audience segmentation, then, is best defined in functional or operational terms. Grunig (1989) summarizes the criteria for segmentation found in the marketing literature: ‘In general, segments must be definable, mutually exclusive, measurable, accessible, pertinent to an organisation’s mission, reachable with communication in an affordable way and large enough to be substantial and to service economically’ (Grunig, 1989: 203).

It is more efficient, in term of maximizing impact within given resources, to identify groups of people who are similar in important respects and tailor one’s communication content and delivery to them. To rephrase this in operational terms, audience segments have the following qualities: (a) members of a segment share similar antecedent qualities – knowledge, concerns, motivations – that permit tailoring of messages; and (b) members of a segment can be reached through similar media, organizational or interpersonal channels.

There is no simple formula or ‘cookbook recipe’ for identifying antecedents or creating segments. As a result, the process of audience segmentation has developed a reputation for being more art than science, a matter of informed and intelligent guesswork.

At Bruegel, since its inception, we have had several exercises of audience segmentation. As the organization gradually expanded the scope and range of its activities, research areas and publications, it increased the number and type of members and partner organizations and diversified its contacts. The think tank consequently had to deal with a wider range of stakeholders, each holding a unique relationship to the organization. Following this evolution, different stages of organizational development have corresponded to adapting our approach to audience segmentation to new circumstances. We can identify three moments within the evolutionary arc so far.

In the beginning, audience segmentation was simple, which reflected not only the need for size-appropriate operations with limited resources, but also the necessity to segment to identify where we could most effectively work when we were new and no one knew who we were or what we did. In practice, our audience map looked like a pyramid. Policy makers at the top, policy-influential
individuals in the middle, everyone else at the bottom. We designed more tools for the middle section because that is where the greatest potential laid when the brand was still relatively unknown.

The needs and expectations of each stakeholder group being very different, it became crucial to target them individually in order to meet these needs. Growth in output did lead to that more sophisticated segmentation, but it was also growth in reputation and brand. If we were able to, we would have had this individualistic approach from the beginning. But resources, brand recognition and other factors ruled this out. This is an interesting experience also for other research organizations who might have a similar resource restraint that doesn’t allow them to be so granular in their segmentation. It shows that there is something good they can achieve in the meantime and that can lay the ground for further recognition and visibility.

In a second phase we developed the exercise further and added the criteria of potential engagement in and with Bruegel. This led to the definition of three additional circles of people: those directly involved in Bruegel’s activities; those that were contributing or had contributed to our activities, but their main engagement lay elsewhere; and the external audiences who may have become engaged in Bruegel either with potential to support our activities and projects or those with high influence in their field who could relay Bruegel’s ideas to other target audiences and those who had the power to implement Bruegel’s policy recommendations. This classification also took in consideration that individuals could belong to different groups at the same time, according to their changing level of engagement.

After a few years, however, that exercise only partially continues to match the evolving landscape of the audience and our developing ability to be more sophisticated in segmenting it. For this reason, we are now reviewing the previous segmentation. We identified the need to ground this exercise even more closely in the overarching goal of maximizing the impact of our research output to influence public policies.

Since Bruegel expanded its capacity in more research areas, we are in the process of differentiating the mapping of key actors dealing with several specific topics. So, whilst the original segmentation is still valid, we are adding additional layers to make our outreach more granular and impactful. We strive towards more customized segmentations that incorporate subcategories and keeping data about the audience constantly updated, as behaviours and groups change.

**MONITOR AUDIENCES’ BEHAVIOURS**

It is important to determine audience behavioural goals in context, as communication messages presented to potential readers on specific platforms without adequate knowledge of their behavioural patterns in various contexts risks falling flat. Knowing how your readers and influencers use the platforms is a very important step in order not to miss the target.

Let’s make an example to understand that better. Around 40 per cent of Europeans are on Facebook, which makes it a great tool for outreach to many different audiences. However, if we consider political engagement, while for certain specific groups and causes it may be the most fitting for mobilizing and calling for action, for other groups it may not, as even if they are active there they might prefer using that media for other purposes.

At Bruegel, when we have embarked on redesigns of the website, we followed several steps to introduce new features or retire existing ones. First, re-examining the core of our output, second, surveying (and understanding) the behaviours and needs of our website audiences and third, creating
benchmarks to assess the strategic success after a test phase. This process resulted in a clearer match of access to the content and the mission of the organization and much clearer navigation for the users. In our most recent redesign some of the proposed changes were based on the initial assumption, drawn from general statistics about the evolution of users’ behaviours and from survey replies, that our readers would overwhelmingly switch towards consuming websites through a mobile device rather than a desktop. That assumption, which was generally valid as a society trend, turned out to be wrong in the case of our readers and after closely monitoring the results over a first set of months, we decided to change the approach towards an editorially-curated desktop homepage.

This experience shows a simple, but crucial lesson. It is important to get to know the public you want to target. And asking the audience is essential, but monitoring their subsequent behaviours is even more important, as the two might not match all the time.

Another key element to bear in mind is that the relation between influencers, policy makers and wider public is a lot more dynamic than it used to be. During the Brexit campaign, for example, policy makers did not suddenly give up considering the facts when making policy decisions. But the way facts were being verified, how digital platforms had the potential to self-certify ‘facts’ or give a greater value to impressions, changed the course of the debate and the basis upon which voters took their decisions.

Moreover, the speed at which public opinion has impact on the policy debate has changed, through digital platforms and the clearer evidence as to what public opinion might be. Before public opinion was something that could be measured only with huge investment. The cost of data linked to actual behaviours of online users dropped for many platforms overnight. Another example of this can be drawn from the Brexit debate, where a sentiment analysis on Twitter was revealed to be better and cheaper for measuring voting intentions than commercial polls carried out by expensive companies (Müller and Porcaro, 2016).

ALIGN AND MONITOR YOUR TOOLS

As I have discussed, there is no ‘one size fits all’ methodology to define and constantly update your audiences. Also, what can be valid for one organization will not be for another. However, once the exercise is done correctly and consistently with the goals of your organization, then it allows for matching of an audience segment with relevant products.

In principle, every research output can be designed for a specific audience and parts of the same contribution can be designed and targeted for specific groups. Research, and messages, can be broken down, simplified or enriched and can lead to several outputs: long essays, academic papers, videos, podcasts, interviews, 140-character tweets or visual images. The key is to be aware for every product produced, who the researcher/institution wants the audience to be.

At Bruegel, our diverse editorial output is tailored to reach different audiences. Policy Briefs are aimed primarily at a policy audience and provide concise, strategic analysis of current issues plus concrete policy recommendations. They are designed to have an impact ahead of policy development or in the evaluation of existing policy frameworks. Policy contributions are focused and concise analytical papers, which contribute to ongoing debates while policies are being drafted. They also include testimonies at hearings or responses to political consultation papers during earlier stages of policy-making. Working papers aim to foster academic debate and can be pitched to academic journals. Blueprints are longer reports that explore a particular policy area in more depth. They are technical studies, with a wider time horizon, leading to policy conclusions. We also publish essays and lectures
on topical questions that may be relevant to or arise from Bruegel events. While these started originally as primarily printed output, nowadays, they have been moved online, recently introducing a customized online reader to give greater accessibility and providing print-on-demand services for the longer pieces.

Moreover, since 2012 we have established a blog that has become influential as a source of timely analysis on the latest developments in economic policy, for policy makers, influencers and journalists. The blog is a tool to promote our work to a wider audience by providing information about ongoing research or less technical summaries of working papers and academic debates.

Last but not least, we use social media, primarily Twitter, to successfully promote our scholars and their research, focusing the outreach towards the different target audiences identified for each editorial output. However, as with target audience fluidity, so with tactics and tools that worked yesterday may no longer be as effective as today. The platforms where we distribute research, such as Twitter or Facebook, are constantly changing their strategies. Whether it is a tweak to their complex algorithms or slower user growth, we have to respond accordingly. For example, how to make a certain post visible to your followers and what kind of engagement is expected by them changes overtime. Platforms are more and more pushing their users to stay within their ecosystem, rather than jumping between them, or encouraging users to leave them to visit other websites.

A striking case of how fast this can change is Facebook with YouTube. These used to be complementary tools and posting a video on YouTube while sharing it on Facebook has been for a while standard practice to maximizing video content outreach. With a change in strategy they become in competition with each other. Now Facebook penalizes the posting of YouTube videos, making them less visible in their feeds. This fluidity of audience behaviours and of digital platforms’ evolution makes it even more important to set up monitoring tools to measure and adjust the impact of online outreach.

At Bruegel we use quarterly and annual outreach reports, which consider multiple aspects of the communication strategy. These reports are rooted to the research output and researchers’ visibility and consider their presence over various channels: from traditional press, to events, from website statistics to social media. The statistics provide measurable metrics about users’ engagement on social media, online readership analytics, press mentions and other available data. By monitoring both online and offline channels together, we have an overview of the situation and we can make necessary adjustments on the way. In parallel, we build a qualitative analysis based on our own values and goals, which is especially important when it comes to measuring policy impact, as it is usually difficult to grasp with quantitative benchmarks. In Bruegel’s case, this monitoring system helps also in identifying any gap in our strategy and engenders lively discussions about various options that may fill that gap, including new tools.

CONCLUSIONS

Being online today is definitely something a research organization can benefit from greatly. But it is always important to remain faithful to the original goals of the organization and to ask yourself why that specific campaign or that new online channel could be an added value to promote that specific piece of research, and towards which kind of people that research was designed for in the first place.

In the case of Bruegel, what has worked to set up an online (and offline) communication strategy, was a clear definition of the goals and a segmentation of the audience, which has led to the differentiation of the offer, both in terms of editorial formats, as well as in terms of distribution channels. Moreover,
what has been working for Bruegel has also been a close connection between researchers and communicators. Outreach has been seen as part of achieving our mission and not as a separate aspect from the core business of research, even when resources were very limited, such as at the beginning. Success is not based (solely) on the size of our communication team, but rather on how we are capable of capitalizing on the whole organizational efforts. Everyone plays a role in it and this is one important factor that maximizes impact and efficiency.

Our communication strategy grew in tandem with our profile, branding and reputation over the years, but it is also characterized by consistency and a long-term approach. Technology certainly facilitated this evolution, the capacity of our human resources in responding to specific challenges to reach in a timely and cost-effective manner our target audiences has been a crucial factor. This is a common challenge also for other policy-oriented research institutes and could certainly be broadened to the efforts needed to set-up a more efficient way to share and communicate research on a broader spectrum.
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Chapter 10 - Moving a higher education school online: Florence School of Regulation’s all-around online-ization

Annika Zorn, Daniela Bernardo and Chiara Canestrini

INTRODUCTION

Florence School of Regulation was founded at the European University Institute more than a decade ago to bring together academics and practitioners working on the topic of EU energy regulation and policy. In what follows we will describe how the School progressively developed and put into practice an online strategy for its three core activities (executive education, research and policy dialogue, see Figure 10.1). This move online carried forward the School’s development to become one of the leading European academic thinking hubs on energy regulation and policy as it allowed the school to deeply connect the world of the academy with the world of practitioners.

Indeed, the biggest challenge for the School had been to create an academically robust and practically relevant bridge between academic thinking and the world of professionals.1 While the European focus and the magnitude of involvement of practitioners in the School’s activities had been exceptional for an academic project since its foundation (see also Box 10.1), at no time the School could take for granted that it would meet its declared objective ‘to function as a bridge between the world of academic thinking and the world of practitioners’. The activities of the School followed academic routines, schedules and approaches which were not always easy for practitioners to access: Academics and practitioners used different languages, valued different approaches and outputs, and were exposed to different working logics and constraints.

For example, while the young researchers of the School needed their work to be published in academic journals – using the style, specialized vocabulary and concepts of the discipline and bowing to a publication process in which research finding were made available after several months or even years – policy makers at the European Commission were desperate for clear-cut research findings that would provide guidance in their immediate decision-making, and formulated in a language that was accessible to a range of colleagues with different backgrounds and experience and the wider public.

As we had the ambition to create a true exchange, over the years, we had to question repeatedly our academic practices so as not to unnecessarily disrupt the dialogue between these two worlds. How might we ensure there was a real exchange of ideas instead of a talking past each other? How could

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1 Academically robust, as the research of the School had to be subject to established academic quality checks to gain academic credibility, such as publications in peer-reviewed journals, thus ensuring the recognition of the work within the academic community. Practically relevant as the research process, from the definitions of the research questions to the communication of the research, had to be accurate and timely and thus needed to be constantly exposed to informal discussions and formal debates with professionals working in EU institutions, national regulatory authorities, or regulated energy companies and the like.
we know that the training designed by academics for young practitioners was relevant for their professional development? And most importantly, how should we build a bridge that would provide access to anybody interested in EU energy regulation and allow for a constant and timely exchange of ideas, people, and knowledge both ways? As it turned out, the online-ization did play a key role to respond to these challenges.

We will start the chapter by describing how the school’s core activities were moved online in three subsequent steps. Each step is characterized by a different level of engagement with those outside the School or the academy (as, for example, global learners, policymakers, practitioners, private sector professionals or the wider public) and consequently a different understanding of how knowledge is to be created and shared in the 21st century. We will then review these three steps of moving the school online as to describe the opportunities these provided to the school to make knowledge more open, accessible, collaborative and timely. The chapter concludes by looking at those factors that are assumed to have been decisive for moving the School online.

Source: Authors.

Figure 10.1 Three pillars of activities to bridge academic thinking and practitioners’ experience: training, research and policy dialogue

THE THREE STEPS OF MOVING THE SCHOOL ONLINE

Over the past years the School has progressively integrated a wide array of different online activities. This online-ization of the School triggered a process that has deeply transformed the way the School organizes its ‘knowledge transfer to learners’, the way the School communicates its research output within and outside the academic community (research communication), and the way it carries out research (research design). Today, a comprehensive digital agenda is part of the School’s core strategy.

BOX 10.1 FLORENCE SCHOOL OF REGULATION

Different from many other academic projects or institutions, a move online was not primarily considered as an exercise to move teaching and learning online (see Chapter 4), but as we will illustrate, deeply changed the whole set of academic practices within the School. Yet, while the School’s academic practices have changed, a move online has not necessarily replaced them. We will instead argue that the School today integrates the ‘best of two possible worlds’: The team, instructors, researchers and learners meeting and discussing on the ground as well as the community build around the School outside of the bricks and mortar of the School in the clouds.
Florence School of Regulation (Energy) was founded at the European University Institute (EUI) in 2004. The idea proposed by the three founders of the School was to provide a space for a dialogue between regulators, companies and scholars on EU energy policy making and regulatory practice. The understanding was that the European and neutral academic setting of the EUI would foster the creation of a common European regulatory language and, most of all, allow for a critical, independent and evidence-based discussion. Since its foundation in 2004 the School has undertaken different activities. First, the School has organized policy debates and workshops bringing together the various stakeholders and academics from across Europe where topics could be discussed in-depth and outside the daily routines. Second, since the very beginning the School has organized training on the legal, economic and technical dimensions of energy regulation, for young regulators and staff from regulated companies (see Chapter 4). Third, after some years, and to complement its activities as an academic project, the School started to undertake applied research, including a major research project that advised the European Commission on EU energy policy. Florence School of Regulation was thus built on three activities; policy dialogue, executive training, and applied research, in a core area of EU policy making (see also Glachant and Zorn, 2011).

In the following, we will distinguish three steps which describe the progressive online-ization of the School and the level and depths of knowledge creation and sharing it allows for. The three steps are inspired by Irwin’s (2008) three orders of communication and engagement. Looking at the field of science communication³ (with a focus on risk communication), Irwin distinguishes three orders of communication, each characterized by a different depths and level of engagement with the wider public (Table 10.1).

<table>
<thead>
<tr>
<th>First order</th>
<th>Second order</th>
<th>Third order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public is perceived as ignorant or uninformed (top down and one-way communication)</td>
<td>Public is perceived as diverse and knowledgeable, with valuable contributions to make (two-way communication)</td>
<td>Nurtures meta-reflection of the relationship between science and society (first and second order)</td>
</tr>
<tr>
<td>Communication of scientific certainty</td>
<td>Scientific process is perceived as a messy process with no certain answers</td>
<td>Different forms of expertise and understanding represent an important resource for change</td>
</tr>
<tr>
<td>Answers given by science are central to tackle the problem</td>
<td>Science communication is open and transparent</td>
<td></td>
</tr>
<tr>
<td>Possible limits: Limits the exploration of a topic</td>
<td>Possible limits: Topics are selected and framed by public or academic institutions</td>
<td>Possible limits: Far reaching implication for how political decisions are taken and research is designed/governed</td>
</tr>
<tr>
<td></td>
<td>Input by citizens is not considered as evidence on which to act</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors, based on Irwin (2008).

Table 10.1 Simplified summary of Irwin’s (2008) first-, second- and third order thinking on risk communication by the authors

For example, the first order of science communication starts from the assumption that the public is ignorant or uninformed about a topic, and that with enough effort from academics ‘the public can be brought to greater knowledge’ (Irwin, 2008: 201). It is an example for a top-down and one-way communication that ‘takes little account of the diversity, nor the possible knowledgeable, of publics’

³ That is, the communication of scientific results to the wider society or stakeholders, in difference to scientific communication that targets the academic community, see also Bonfadelli et al. (2017)
(Irwin, 2008: 202). A second order would instead describe the communication effort of an academic to get into a dialogue with external stakeholders, the general public, or interested non-academic experts. A second-order thinking is, however, still limited in its understanding of the ‘weight’ of non-academic expertise. A third order communication and engagement would describe a situation in which there is an open and transparent public dialogue on a topic with no pre-defined legitimate speaker, and where the contributions of various speakers is considered indispensable for social and political change. Third order communication may question the way decisions are taken, and thus may request a re-design of decision-making institutions.

Describing the main feature of each order with just one action verb, one could say Irwin’s first order communication is best described as lecturing, the second order is listening, and the third order is collaborating. Building on Irwin’s idea of a different relationship with, and a different role of, those outside the academic community, in the following we propose to distinguish three steps to describe the online-ization of the School (Table 10.2).

<table>
<thead>
<tr>
<th>First step – Knowledge sharing</th>
<th>Second step – Knowledge editing</th>
<th>Third step – Co-creation of knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making knowledge open and accessible through language, channels, formats</td>
<td>Edited knowledge for self-directed learning and contribution to the building of expertise outside academia</td>
<td>Blurring the boundaries of expert/instructor and learner/public</td>
</tr>
</tbody>
</table>

Source: Authors.

Table 10.2 Three steps of online-ization of knowledge sharing and creation at Florence School of Regulation

The three steps describe the level and depths by which knowledge is not only communicated to those outside (as well as inside) the academic community, but the extent to which multiple non-academic audiences (including students and a wider set of learners from within the academic institution) are perceived as valuable or indispensable actors in the knowledge creation process. While non-academic audiences are assumed to have a passive role in the first step, in the second step these are perceived as self-directed learners, and in the third step they are considered indispensable contributors to the process of knowledge creation.

In contrast to Irwin’s model, whose focus is on the role of knowledge for decision-making processes, the three steps we propose limit the focus on the way knowledge is created and shared by an academic project. In further contrast to Irwin, the three steps proposed here take a broader view of academic practices, as we focus on all three academic core activities discussed in this book’s Introduction, that is, teaching and learning activities, knowledge exchange and research practices (see Figure 0.1 in the Introduction).

Step 1: Knowledge Sharing at the School. Giving Access to Research Output and Discussions

When the School set up its research strand in 2008 and attracted a team of researchers to join the School, it started to produce research outputs in the form of working papers, research reports and peer-reviewed journal publications. These were the common formats and ways of sharing research output within academia and certainly did prove the academic robustness of the School’s research. With a relatively small team of researchers, in the first five years after its research strand had been set-up the School had published more than 60 peer-reviewed journal articles, published 14 books and edited six issues of academic journals (Florence School of Regulation, 2013) (Figure 10.2).
Yet, as the School was set up as a space to communicate with a wider set of experts and policy makers, instead of forming a closed and exclusively academic dialogue, there was an interest in making the research outputs accessible to a wider audience. That is, instead of feeding the research outputs only into the usual academic channels (through, for example, academic conferences and peer reviewed journals), we discussed at the School what could be done about the often inaccessible academic language, the lengthy formats, limited dissemination channels and the slow-paced delivery of outputs that made the knowledge inaccessible or untimely for many interested professionals. Some articles were not even accessible to many of the School’s own stakeholders, as research results were published in journals for which an institutional or personal subscription was needed.

<table>
<thead>
<tr>
<th>Publications 2010-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal Issues</td>
</tr>
<tr>
<td>Peer-reviewed Journal Articles</td>
</tr>
<tr>
<td>Books</td>
</tr>
<tr>
<td>Research Reports</td>
</tr>
<tr>
<td>Working Papers</td>
</tr>
</tbody>
</table>

Source: Authors.

Figure 10.2 Number and range of academic publications (2010–2017)

The School thus started to discuss its own practices, involving all the different team members (researchers, management, project assistants, and a new team of multi-media professionals and knowledge workers) looking for additional and alternative ways to better share its research output.

For example, so as to encourage the School’s researchers to make their academic publications available to experts without access to journals with paywalls, a series of discussions on open-access was organized. Researchers of the School investigated the pros and cons of publishing academic articles in open-access journals, at the start most of them not even aware of the open-access movement and the various options available.

Around the same time, the School took advice from a senior policy maker saying that it would be unlikely in his professional routine to have the time to read through a 50-page research report (or for that matter a 15-page open-access peer-reviewed journal article), no matter how important the topic dealt with might be for his area of expertise.

We learned that it would make the life of any decision-maker much easier to get a short summary in the form of policy briefs of the main take-away messages – even without necessarily containing directly implementable policy recommendations (Figure 10.3). Policy briefs were short formats, written in an accessible language and freely available on the School’s website, and widely distributed in its digital format to the School’s stakeholders and interested experts. The policy brief, apart from its more accessible language and format, also had the advantage (compared to a journal article) of making research findings available in a relatively short time span – usually a few days after a research report had been published. The briefs provided digital links to the longer research reports for those interested in getting an in-depth discussion of the subject.

Roughly at the same time as we started to discuss open-access publications and policy briefs, we started to run one-hour live online seminars (or webinars) during which researchers presented their research outputs. These were usually attended by 80–150 professionals and academics and provided
a possibility to share the School’s latest research outputs. It allowed participants to update their knowledge on a topic without having to leave their offices in Brussels or Ljubljana (seat of the EU Agency for Energy) and to get in touch with the researchers who had carried out the research.

The School also started to open a crack in the doors of the dozen closed door workshops taking place in Florence. Each academic year hundreds of academics, regulators, private sector professionals and policy makers come to Florence to discuss and update their knowledge at one of the School’s many activities (e.g. conferences, policy workshops). To let other interested people know what was being discussed in Florence, short statements of the speakers on what was their main contribution to the workshop were video recorded. Thus, anybody interested in getting a glimpse of, for example, the latest development on organizing the internal energy market, could do so easily shortly after the workshop (usually 1–2 days) by watching these five- to ten-minute workshop highlights.

In 2011 the School started to publish short summaries of the research outputs in the form of open-access policy briefs. To do so, the School hired a part-time researcher who investigated the language, formats and style of policy briefs and then translated the research reports into four to six pages summaries. The policy briefs were finalized in a close forth and back between the author of the brief and the researchers who had carried out the research, as to ensure no major finding got ‘lost in translation’, and both, the editor of the brief and the researchers were recognized as authors of the policy brief. Since then, the School has published more than 50 Policy Briefs.
Also, conferences or events that were not held under Chatham House rules\(^5\) were live-streamed and the recording made available after the event. Ideally these were offered in various lengths (thus again offering a summary of the discussion points) as seminars or conferences are rarely watched in full length online.

The School, however, not only opened the doors to what was happening in Florence. The director of the School spent at least half of his time speaking at academic conferences, contributing to policy discussions, attending high-level meetings, or discussing new projects elsewhere. To share what the experts he was meeting around the globe had to say, he started to record short audio interviews feeding into the School’s podcast series (see Box 10.2). With the workshop highlights, conference streaming and podcasts, the School was therefore able to share timely insights and contributions of academics, policy makers, regulators or other professionals.

The School thus had started to experiment over the years with a series of formats and different dissemination practices, which spanned blogs and policy briefs, online seminars, video highlights, video interviews, podcasts and video lectures, just to name a few. After a few years, the School’s YouTube channel (thus one of the many new dissemination channels used) had gathered more than 170,000 views and more than a 1000 people had subscribed to the channel as to get alerted when a new video was uploaded. The School was thus reaching out to many more people than what would have been possible with its activities in Florence, making content more easily accessible, open and timely (Figure 10.4).

Each format responded to the different preferences of professionals as to how they wanted to access the School’s debates at any moment in time. To do all this the School had hired a team of communication professionals (graphic designer, multi-media specialist, film editor) guided by a knowledge editor (an academically trained professional with an understanding of the topic). The team constantly experimented with new and more engaging formats (such as, for example, infographics to visually provide condensed information), language and channels to better share what was discussed and produced at the School. For example, the School elaborated different ways that would allow a listener or learner to quickly and easily decipher information based on insights from cognitive science on how attention is raised and how information is most easily accessed and stored.

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**BOX 10.2 PODCASTS AT FLORENCE SCHOOL OF REGULATION**

Even though the School had invested a substantial amount of resources in a multimedia team, shipping a filmmaker with equipment to every conference venue the School’s director was attending as to record discussion highlights was not an option. The multi-media team then came up with the idea of starting a podcast series. The one-minute conversation and ten-minute training went somehow like this: ‘Jean-Michel, why don’t you simply use your phone to record interviews with people you are meeting?’ ‘My phone? What do you mean? What could I do with just a phone?’ ‘You could use an app to record interviews, use the camera to take photos, send all to us via email with one click and we can make a podcast series!’ ‘Mmmm. Me, producing podcasts . . . on my own? Why not, we can try!’ ‘I’ll show you how it works, it is very easy! . . .’ It took a few minutes to test the technical aspects and even less to make it work for real a few days later when the director was meeting a high-level civil servant at the European Commission. Today all researchers at the School are trained to produce podcasts from the events they attend. They even started to take selfies for the podcast cover and to analyze the metrics. The

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\(^5\) ‘When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed’, Chatham House, the Royal Institute of International Affairs, retrieved March 2018 from [https://www.chathamhouse.org/about/chatham-house-rule](https://www.chathamhouse.org/about/chatham-house-rule)
School’s playlists feature speakers from the European Commission, Nobel Prize winners and CEOs of energy companies. Rapidly the School became an on-demand energy web radio to feed the current debate.

The experimentation with new ways to share its research output and what was discussed at the School also fed into the development of the School’s online course, such as the new video lectures formats and a variety of tools to engage learners in online events (see also Chapter 4).

**Figure 10.4** The School’s efforts to share its activities and output and engage with multiple audiences (since 2011)

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**Step 2: Editing of Knowledge. Florence School’s Role as Guarantee of High-Quality Knowledge**

The School had thus started to develop numerous information ‘bricks’ that could now be accessed by a variety of interested experts who were not participating in the regular on-site activities of the School. As these ‘bricks’ were stored online, many more practitioners and academics could access what was done at the School from wherever they were and when they wanted, in the form they wanted.

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6 We would like to thank Matt Langthorne, multi-media specialist at FSR who has been an innovative and indispensable colleague in our effort to better share the School’s output over all these years.
Yet, while the School regularly informed its audience about the latest discussions through well-designed dissemination efforts, the knowledge ‘bricks’ were in the end no more than an untidy pile of disconnected pieces. Simply giving access to the information did not necessarily allow interested experts to find what they were looking for, to learn about topics they were potentially interested in, or to be able to feed the knowledge created at the School into their work.

After some time and experience in developing different formats of communicating its research, the School then had to tackle another challenge: How to find your way through the enormous amount of pieces of information by combining it into coherent sets of knowledge? Similar to the policy maker who would not have the time to find her way through a 50-page report, how was it possible for anyone to find what they were looking for in hundreds of pieces stored on a website or spread across a series of social media channels? What was the incentive for someone to look through an enormous amount of disconnected pieces, potentially interesting but where most of the material was not of immediate interest? The technical and cognitive access to stored information was not sufficient to learn about a topic, to gather the key dimensions of a problem, and to find the relevant evidence when working on a policy proposal, for example.

Indeed, one of the main ambitions of the School as an academic project was to challenge taken-for-granted conceptions and definitions of problems in the energy sector, not simply to provide information on energy regulation. The organization and editing of knowledge in the field was thus considered as – or eventually more – important as the provision of the information.

To do so, the School firstly published an online encyclopedia. This online encyclopedia provided a short one to two page introduction to dozens of concepts in energy regulation and policy. In the bibliography of the encyclopedia entry the reader could then find core academic readings from the various disciplines, as well as all knowledge ‘bricks’ produced at the School. The articles were written by researchers at the School and peer-reviewed by other experts in the respective field. The online provision of these articles made it possible to update the content relatively easily and to add any relevant additional material produced at the School. These articles offered an organized access to a variety of key concepts and could be accessed on the website of the School, but instructors of the School could also use these articles when assembling their reading material, and course participants could use it to look up terms or concepts they were not yet familiar with. The encyclopedia was introduced at all training courses of the School as a free online learning resource, and was also presented at the policy events of the School as a tool that could be used by practitioners to get access to key terminology and the latest research in that area.

Further, and most importantly, the School organized its web content around a set of keywords and tagged content. All activities, such as training courses, policy events, publications and the wide array of multi-media content of the School were organized around six core areas of energy regulation stored within the same database or repository, allowing people with a specific interest in one area to find all other outputs or activities of the School (Figure 10.5).

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7 Even though it looked similar to the Wikipedia, the project was authored only by scholars of the School.
The School also developed its dissemination strategy around organized items that would already offer a selection of connected knowledge ‘bricks’ to the readers.

Third, the School designed online courses around specific research topics to guide learners through a set of outputs and discussions produced at the school. Researchers translated projects into several week-lasting online courses where participants were led through a variety of activities, online material and also attended live events (see more in Chapter 4).

The dissemination strategy of the School was thus designed to not simply share the latest thinking on a topic, but it selected, edited and organized the knowledge in the field. It provided a comprehensive database containing everything from classic academic (open-access) publications to the whole range of multi-media material output and all sorts of activities done at the School (including online courses). Further, the School offered organized access to this content, as a ‘ready-to-use’ container within an email or on specific topic pages so as to give readers the possibility to ‘trip over’ items that are potentially interesting to them.

Not only did this organized access within a knowledge gallery allow experts all over the world to quickly find what they were looking for, but it also made it possible for the instructors and researchers of the School to access and use the content for the various activities of the School. That is, for example, instructors could easily compose learning material, or researchers could make sure they were on top of the latest discussion on a topic. The School thus made its knowledge storable and accessible but also became a knowledge editor on EU energy regulation and policy. If you wanted to dig deeper into a topic you could do so easily on your own by getting access to organized knowledge lasting from few minutes of reading (policy brief), or watching video series (5‒20 minutes), or attending several week-long online courses.

Step 3: Knowledge Creation at The School

When the School started changing its practice of sharing its research findings (language, formats, channels, organization of access to knowledge), as well as the way in which this knowledge was ‘transferred’ and edited, soon the model of how the research process was designed (as well as how
its executive education was designed, see Chapter 4) was questioned as well. The research model at
the School was originally based on a traditional linear design, starting from the research question and
ending with the final research finding and its publication and dissemination. The traditional model was
composed of periods when researchers engaged with colleagues to discuss their research (for example
reactions to research proposals at the start of the research process, or presentation of findings at
conferences at the end of the research process), and longer periods of retreat when evidence was
collected or during the write-up phase (see also Bonfadelli et al., 2017).

However, using the new practices described above to share their findings, researchers increasingly
had started to open-up the end-of the research and one-way dissemination. For example, when
presenting their research findings in the School’s online seminars to dozens of academics and experts
working on EU energy regulation across Europe, researchers got useful questions, feedback and ideas.
Instead of disseminating their research one-way (from the academic to a wider interested audience)
researchers had started to engage with their audience and communication had started to flow both

This two-way communication was appreciated by both researchers as well as the energy regulatory
experts. One the one hand, it gave researchers recognition, feedback and visibility for their work. They
could experience first-hand the meaning (and possibly the impact) their research had for other
professionals working in their area and could test their findings with a critical audience composed of
academics and practitioners. On the other hand it gave experts a say on the relevance, accuracy or
timeliness of the research findings.

With the move away from one-way dissemination to two-way communication the research process
was, however, transformed in other ways as well. Indeed, the whole research path was opened up to
other experts from the early stages of the definition of a research question to the questioning of ‘final’
findings. Using online seminars or virtual meetings one could engage with experts easily at various
stages of the research process in a relatively short time span and with relatively little resources
(compared to, for example, organizing a workshop with people travelling to Florence from all over
Europe). This allowed researchers to invite experts during the early stages of the research process to
get input and advice as, for example, to check the accuracy of the information, or the timeliness or
relevance of their research question. Online seminars were indeed starting to be used not at the end
of the research process but during the whole cycle of the research process. As it was online, even high-
level experts were easily convinced to contribute to these online meetings, as it did not require them
to travel or being away from the office for several days.

Also, policy briefs that had initially been published towards the end of the research process as to
summarize the outputs from a longer report were now used as a short briefing during a first phase of
the research process. These policy briefs were discussed with a group of stakeholders during a high-
level expert meeting composed of academics, policy makers, regulators, and regulated companies. A
process of communication loops had started where researchers engaged with potential users or
interested experts, also questioning what previously had been considered ‘final’ findings that would
then lead to a continuation of research in the form of new research projects.

Another important tool for the research practice of the School was the fact that the School’s Director
had started to use Twitter. Encouraged by his young team members, he started setting-up an account
(albeit initially half-heartedly) to soon discover the potential of Twitter and becoming an enthusiastic
and most active tweeter at his university, being followed by thousands of academics, policy makers,
regulators and other professionals from around the globe. Not only did he start to connect to, and discuss with, other experts across Europe, he was also able to enhance his own academic practice:

Twitter really is how we spontaneously think and interact in academia: you typically do this at conferences where you have no time to discuss at length with your neighbour and you ask about a recent paper and the two to three most important ideas [to get you colleagues evaluations and insights]... Also, all information is stored in Twitter, it is very similar to keywords and abstract we use in academia. (Interview with Jean-Michel Glachant, Director Florence School of Regulation October 2016)

Twitter can also be used to screen whether a topic is of interest, the same way abstracts or references are used, screening a topic and, in a case of potential interest, digging deeper into the content provided (links to papers, to conference slides, and so on):

You first check whether there is a possible interest, the likelihood of interest, you can very quickly check, then you can dig in deeper and deeper as there are hundreds of stored documents you can access via Twitter. (Interview with Jean-Michel Glachant, Director Florence School of Regulation October 2016)

Most importantly though, it allowed the director of the School to constantly monitor the policy landscape, following emerging topics and discussions:

... You enter into things you did not know five seconds before, the core of Twitter is that everything is posted ... it’s a fantastic tool to discover and monitor [potential research questions]. (Interview with Jean-Michel Glachant, Director Florence School of Regulation October 2016)

One the one hand, the School’s research agenda could thus be inspired by the ongoing discussions on Twitter. On the other hand, research questions and findings could also be tested for their relevance and accuracy by feeding them into the discussions and receiving feedback from a community of experts build around the Director’s Twitter account. The sometimes fast-paced development of how a topic was tackled in the policy context, thus allowed researchers to stay at the forefront of thinking. Being connected with this community, and the debates happening within that social media community, allowed the School on the one hand to screen potential topics for investigation, and on the other hand to test assumptions or the relevance of a topic.

Twitter was also used at the School’s (live streamed) conferences. Researchers of the School summarized the main discussion points in Twitter feeds and participants (in the room or attending from elsewhere) intervened in the discussion, shared their views and provided additional information (arguments, papers, evidence), thus allowing for a parallel debate online, accessible and open for anybody to contribute.

At the School, we also reached a point where the boundaries of research communication or the sharing of knowledge, research activities, and teaching and learning activities at the School (delivered in the form of executive education) became fuzzy. This happened, for example, when ongoing

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8 Knowing that websites are usually not the primary tool to give access to information any more (The New York Times, 2014) but that tools were needed to direct people to the School’s website, the Director’s personal Twitter account was an excellent tool to guide people to the School’s website.

9 This s not to say that researchers should not and have to come up also with research questions that are not even on the horizon of the policy debate. It is probably about finding the right balance with wanting to have an impact for the better and long-term conceptions and discussions on how we want to live.
research or preliminary results were discussed during online courses, but also when research was shared so as to continue to explore new areas of investigation. As discussed in more detail in Chapter 4, an online course that discussed ongoing issues addressed by EU policy makers, allowed a variety of people to connect: Researchers willing to share their research and interested to test their reasoning or exploring new areas of investigation, learners that wanted to get a deeper insight into one aspect of the topic but were knowledgeable in another area and contributed their expertise, policy makers giving details on the policy process, but willing to get new ideas, feedback on their way of tackling an issue and so on. It sometimes was difficult to clearly distinguish who was the ‘sender’ and who was the ‘recipient’ of information. These online courses are best defined as a collaborative learning experience involving a multitude of actors.

WHAT DID THESE THREE STEPS ALLOW THE SCHOOL TO DO?

As the three steps discussed above illustrate, the School has changed its practices over the past years as to how its research is communicated outside the academic community, how the knowledge at the School was edited and organized, and how knowledge loops and collaborative learning changed the way knowledge was created at the School.

In a first step, the School made an effort to use a broad variety of available communication formats, channels and language to make its academic activities accessible to more and different professionals outside the academic community. It describes the School’s efforts to share knowledge more openly and making it more accessible also by tapping into insight of how information flows and how people absorb new and complex information, and in formats that trigger and support understanding and learning. The second step describes the efforts by the School to propose a meaningful organization of the knowledge in the field of energy regulation and policy, allowing learners (here understood as anybody wishing to get additional insights on a topic) to self-guide their learning. The modular and organized knowledge could also be composed and re-organized by instructors and researchers of the School. The second step (editing of knowledge) taps into the privilege of a higher education institution to being widely recognized as the legitimate gatekeeper of reliable information and trustworthy knowledge. The third step describes how the School moved from a linear research design and ‘transfer of knowledge to learners’ towards experimenting with collaborative learning and co-creation of knowledge, and a research design being based on knowledge loops. In the third step, knowledge creation is understood as a collaborative process, where continuous knowledge loops between academics and non-academics, between teachers and learners, and various actors (and where boundaries between these different roles are often blurred) is perceived as a necessary condition to advance knowledge.

What do these steps describe with regard to the move online, and what did it allow the School to do? Each step describes a different level and depth of seizing the opportunities that an online-ization offered to the School. Using the four lenses offered in the Introductory chapter, a move online made the knowledge creation and sharing more accessible, open, timely and communicative:

**Accessible** as the School made efforts to chunk and organize its knowledge and make it available in formats that allowed learners with different preferences or styles to access the material. Putting learning material and teaching units online, such as registered webinars, recorded video lectures, and modularizing the content into pre-organized and searchable units (defined areas and tagged content), also allowed instructors of the School to access each other’s material and integrate it into learning units.
Open, as the School opened the doors of what was happening at the School, for example by putting ajar the doors of closed-door workshops to share the discussion with a wider audience, by making its research more openly accessible by sharing early results and allowing feedback and input, and by moving towards open-access publishing formats, just to name a few.

The online-ization of the School also allowed information to flow timely, as in the case of live streamed events, or in the case of video highlights published shortly after workshops have taken place in Florence. Digital publications such as the policy briefs and blogs also meant that research outputs were available within days instead of months or years, as is typical for the academic publication process.

Finally, the online-ization allowed the School to get in touch with a wide community of experts so as to discuss its thinking. Also, the possibility of gathering people from many distant places who are happy to share an hour of their time during an online seminar, but not able to join a physical meeting in Florence or elsewhere, allowed the crowdsourcing of expertise and thus enhanced the communicative and collaborative efforts of the School to have a dialogue with a wide set of actors.

The move online allowed a bridge to be opened to the public and any interested expert, moving knowledge and expertise from one place to the other. It thus made the knowledge accessible to more people, but also more relevant and timely as more people were able, then and there, to contribute their knowledge.

MAKING ONLINE-IZATION HAPPEN

The three steps described above did not evolve in a linear or sequential path. Instead, there was a back and forth and overlap of these three dynamics, accompanied by constant discussions, pilots and steep learning curves for all involved in the activities of the School. Moving up the ladder of online-ization also did not imply abandoning the practices of the first and second steps: The first and second steps were meant to stay. Indeed, many academic institutions would benefit greatly from tapping into the potential of the first and second steps of moving knowledge online, in particular by providing an edited and modular access to their thinking.

While the School, importantly, built on pre-existing networks, and physical encounters and traditional academic practices continue to play an important role at the School, the extent to which practices have changed and allowed for the School to become a leading thinking hub in its area would not have been possible without its online-ization.

What were the resources on which the School could build to make this online-ization happen? In the beginning, no clear picture of where we were going existed, nor did we have a roadmap. There was simply a discomfort with the existing practice of the School, as we knew we could do better. In addition to investing roughly one-third of the School’s resources into the creation of a professional multi-media team and knowledge editors, we think the nurturing of three cultures were essential to move the school online.

First, the School nurtured a culture of constant questioning. For example, when the first online course had just been completed (see Chapter 4), the multi-media team and course editor started pondering how the course could be further improved, for the learners, the instructors and the team. There were learning activities that did not work out the way we had anticipated (sometimes for unknown reasons), the work load for instructors or course participants had to be adjusted, expectations of both had to be managed differently, or technical features of the platform were an obstacle to certain forms of collaboration and communication. While we did not address all issues at the same time, each edition
was considered an opportunity to improve the course further. In a similar vein, dissemination practices were constantly questioned on the basis of data analytics, or by discussing the researcher’s and the multi-media team’s feedback of what seemed to work and what worked less well.

This constant questioning avoided new practices simply becoming institutionalized, without questioning ‘why are we doing things this way and not differently’. Certainly, there were also limits as to how much we could question and improve. The culture of questioning was not necessarily a daily practice, but it was about finding the right balance between getting familiar with new practices and the set-up of regular meetings where we fundamentally questioned the way we were doing things: A form of institutionalized disruption.

Second, the School nurtured a culture of mutual recognition of expertise. Over the years the School had grown into a team with a diverse set of skills in addition to the academic faculty. A strong emphasis was given to creating a link between the various expertise available at the school: The content knowledge of the instructors, the experience the multi-media team had gathered from a variety of online activities, to insights into how learning and sharing of knowledge works of the knowledge workers. Importantly, while each member of the project had some ownership of his or her area of expertise, all were invited to comment or criticize each other’s work and to provide support and insights at the same time. This was important, as we all faced different constraints that needed to be taken into account. For example, concerns of (young) researchers were taken into consideration when discussing the move to more open and less traditional publication forms. The concrete support and training of researchers by the multi-media team, for example, how to get more visibility for their work, was crucial here.

Third, and perhaps most importantly, the School nurtured a culture of measured risk taking and learning. The School’s management did not only allow but encouraged anybody working for, or with, the School to experiment with new tools or to propose new ideas. With time, this became a working habit. While being constantly challenged to re-think their area of expertise, this was happening in an environment of psychological safety (Delizonna, 2017; Senge, 1990), where learning from mistakes was strongly valued and presentation of new ideas valued in common meetings attended by all members of the School.

Certainly, Florence School does not (yet) address areas of higher education where it faces some major challenges, such as mass education of young adults, transferable accreditation of (lifelong) learning, or increasing tuition fees. However, the School did respond to some typical challenges of higher education institutions by moving its activities online, such as, for example, helping to redefine the relationship between research and teaching (Fung, 2017), the pressing demand to constantly update knowledge, responding to the request to higher education to play an important role for lifelong learning, making the process of knowledge creation more open and transparent (European Union, 2017).

The School also faced many challenges on its way to online-ization. Years of trial and error, and the willingness to constantly question practices and learn from each other, were needed to make this work in practice. Not only the School’s researchers needed to be trained as to acquire, for example, the necessary skills for engaged research (see for example Holliman and Warren, 2017), but also the audience and learners had to learn how to attend and participate in webinars.

One important lesson when engaging in online practices is certainly to accept that there are tensions that cannot easily be resolved. To communicate research results better, scholars have to take time away from those activities that they assume will bring them the best credentials for an academic
career (most importantly peer reviewed journal articles, but also attendance at academic conferences and so on). However, it turned out that the visibility the researchers got through the online practices, allowing them to become visible experts and getting feedback on their work and seeing the tangible impact of their work in the policy discussion, were much welcome by young scholars. Being able to rely on a team of experienced knowledge workers that would help them get acquainted with new practices, as for example, how to write a blog that sounds and looks good, was important for researchers to try out different practices for sharing their research. The extent to which online practices contribute to define meaningful academic work might be an interesting area of study here.

Briefly, the online-ization’ of the School first allowed for a deep and systematic integration of the School’s three core activities (policy dialogue, training and research) by making knowledge circulate among these activities and thus ensuring the accuracy and timeliness of all its thinking. Second, moving activities online allowed constant knowledge updates among academics and practitioners working in the field: on the one hand the move online has permitted the School to feed robust academic thinking into the wider expert discussions, and on the other hand it receives constant feedback on the relevance of its thinking. This chapter argued that the move online encompassing all of the School’s activities and being today a core element of its strategy allowed the school to build a relevant, robust (and busy) bridge that was a necessary for it to become a leading academic thinking hub in the area of EU energy regulation and policy.
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Conclusions

Annika Zorn, Jeff Haywood and Jean-Michel Glachant

Moving online offers many different opportunities to higher education institutions and academics. As the examples discussed in this book show, a move online offers the opportunity: To academics to create a professional profile and prestige outside institutional hierarchies and more supportive (academic) networks (Chapters 7 and 8); to university teachers to re-design their seminars and rethink their role as educators in higher education (Chapters 2 and 3); to departments and centres as to transform their educational and communication strategy (Chapters 2, 4, 8 and 10); to universities and research institutions to define visions and manifest their role within the sector (Chapters 1, 2, 5, 8 and 9); and last but not least to rethink the curriculum of an entire discipline (Chapter 6).

Yet, moving higher education online has far-reaching implications for teachers and researchers in universities and research institutes. Moving online not only makes education and research output more transparent, open and accessible to more and different people (inside and outside the institution) – each with its own challenges. A move online also has the potential of blurring the boundaries of what is ‘in’ and what is ‘out’, of radically transforming the role of researchers, teachers and learners, and in consequence to challenge many taken-for-granted assumptions about the role and core practices of universities.

Through the expansion of lifelong learning, we will have learners with professional and subject expertise of their own who can now be involved in the process of knowledge creation and sharing, as teachers, peer-to-peer as well as learners, especially in the more democratic space of online education. These knowledge loops (see Figure 0.1 of the Introduction), where knowledge is continuously created, updated, tested, questioned and shared, by merging what traditionally has been inside and outside the academia, allows for different experts and others outside the academia to get involved. It is the collaborative and communicative effort that brings relevance and ideas, connects dispersed information, and ensures timeliness, that finally outplays the exclusive individual academic of the ivory tower. In research, the new open-ness of creating, publishing and data-sharing is bringing a wide community into the research process. Open data offers the opportunity for anyone with the skills and computing power to do basic research (‘4th Paradigm’, Hey et al., 2009) and the open-ness of blogs and peer reviewed journals allows anyone to publish to the world. Universities and research institutes need to embrace this change, and help to shape it in positive and constructive ways.

Taking just one of the many examples shared here, of how the role of academics and higher education institutions is transforming through online scholarly practices, is illustrated in Birdi’s chapter (Chapter 6) on the CORE project. The distributed and cooperative creation of a radically new curriculum in

1 Further, online tools seem to be particularly well-suited to enhance constructivist ways of learning (Carlile and Jordan, 2005), that is, a learning that is happening ‘in the making’.
economics across institutional and disciplinary boundaries offering a multiplicity of viewpoints – thus shying away from an understanding of academia as providing the ‘right answer’ or ‘truth’. Nevertheless CORE provides guidance to find better answers to explain the world in which we live, based on latest evidence and reasoning.

Thus, CORE created a new curriculum in a collaborative effort, and is bringing together a different set of people, allowing for the continuous updating of knowledge, making the result openly accessible to all. This new curriculum also, and importantly, gives guidance into the ‘unknowing’. This guidance into the ‘unknowing’ could indeed be understood as the key role of academia in today’s knowledge societies where knowledge can be produced, stored and accessed by anybody. Further, as knowledge is abundant and constantly evolving for learners and multiple audiences, higher education institutions need to ensure that knowledge is accessible for a diverse set of learners/audiences (inclusiveness) and gets heard where it matters most. Online learning, open research practices and new communication strategies have taken a giant stride over the past years, be it for the new technical possibilities that have emerged, or more importantly, be it for the creative use that has been made of these – some of which we have shared in this book. Yet, despite the many efforts that are being made, the digital journey in the higher education sector is only at its first stretch. We believe it is no coincidence that after having been a leader in distance education for 50 years, the Open University launches a new educational strategy on how learning is designed in 2017, ‘as to be disruptive and revolutionary as in 1969’ (see chapter 1 by Marr) or as Haywood concludes the online education of the University of Edinburgh, while being a leading example in the UK, as ‘still (being) fragile’ (see chapter 5 by Haywood).

While many higher education institutions might think they can simply ignore the ‘digital hype’, policymakers already have concrete proposals on the table as, for example, how to link the financing of research projects to open scholarly practices (see European Union, 2017). The move online then offers a still to be explored set of answers to the challenges faced by many universities in re-defining their role in the 21st century (see for example UNIKE, 2016; Crow and Dabars, 2015).

Higher education institutions are still far from fully seizing the opportunities offered by moving online. To respond to the various challenges traditional public universities face today, but also to define their role as a leading actor in the knowledge society of the 21st century, the higher education sector will have to fully integrate online practices in its core business, complementing existing academic practices in some cases and replacing these in others: In the area of education and training, in the area of knowledge revision and production (research), and in the way it communicates its research and engages with experts and citizens – and importantly in the way these three areas interact, integrate and inspire each other. The examples shared in this book highlight different dimensions of moving online as to enhance academic practices, and the forms this has taken to make it work in practice, with its various tensions and obstacles (typically) found when aiming for change.

HOW TO LEAD THIS CHANGE?

Certainly, it is possible that these efforts to recognize and credit different forms of scholarly practice, (unintentionally) change digital practices so that they might lose some of its beneficial characteristics. As Stewart describes in Chapter 7, the open space follows different patterns to establish leaders in a field of expertise. In particular early career academics benefit from these channels of communication taking place outside institutional hierarchies being described as more supportive and less competitive.

2 Certainly, it is possible that these efforts to recognize and credit different forms of scholarly practice, (unintentionally) change digital practices so that they might lose some of its beneficial characteristics. As Stewart describes in Chapter 7, the open space follows different patterns to establish leaders in a field of expertise. In particular early career academics benefit from these channels of communication taking place outside institutional hierarchies being described as more supportive and less competitive.
As Haywood points out in Chapter 5, learning from other universities and having access to case studies has been influential for leading change at his university. We hope that simply by making different experiences and lessons learnt in other contexts available in this book it will give ideas and guidance to academics, university leaders and others willing to lead change in the higher education sector.

Moving higher education online means to lead change, taking into account resistance, challenges and tensions that often – or necessarily? – accompany this change. The examples shared in this book tell many different stories of how this change was led at different levels: Introducing online practices on the course level, moving a whole project online, a university implementing a digital strategy, or even the online creation of a new curriculum across institutional and disciplinary boundaries.

When starting from the course or project level, a common challenge is the real or perceived restrictions that early adopters face when taking the lead in moving online. Attempts to centralize initiatives where no clear institutional visions guide this process (see Senge, 1990) and without offering the (financial) support, prevent these initiatives from scaling to a broader level. Instead, concrete support that is offered to academics or projects to enhance scholars’ visibility or that of their project with a careful approach when common central standards could be applied, and when, at other times, it is best to simply share ideas and solutions, seem to be a promising way. Very important here seems to be the support by new professionals entering the university, such as media creators, instructional designers, digital librarians, and other knowledge workers (course and knowledge editors, course facilitators), who work alongside the academics.

It seems, when leading change as an institutional strategy, a lot of effort has to be put in to get scholars, staff, and students on board and ownership of this change has to be given to the various internal stakeholders. Experienced academic managers at all levels, as well as a clearly communicated vision, are necessary for change to take place at the wider institutional level. In this context, enough room for informed discussions as well as workshops and training opportunities, is necessary, allowing early career as well as more advanced scholars to share practices and to address concerns. This is vital as to get a broader set of potentially interested professionals and academics involved than just the ‘early adopters’.

An interesting alternative to top-down or bottom-up change is what Bryant describes in Chapter 2 as ‘middle-out’: Having the institution’s mission clearly in mind, this approach seeks to support those initiatives that have a possibility to be scaled more broadly and sustained over time. What most experiences shared in this book point at is the high level of flexibility and responsiveness that is vital for leading digital transformation in universities. Whether to be open to grasp innovative approaches by colleagues or the constant need to adapt one’s communication approach, rigid plans seem to be a hindrance rather than a useful guide.

To lead change, institutions will need an institutional vision that gives academics, staff and students a frame for their action. They will need academics that have a mind-set of managers being able to lead people through this change and a university management that not only tolerates, but strongly encourages and supports those willing to lead change. A culture where learning and mistakes are not only permitted but form part of the institution’s very essence, where learning from mistakes is highly valued. Last but not least, room to share practices and knowledge on moving higher education online, as well as concrete support for academics by experienced ‘knowledge workers’ who are willing to try out new things or can be encouraged to do so ensures the growth of an online culture in the academy.

We end this book with an Epilogue, a short forward look to the kinds of students, and hence young researchers, who will be entering our universities and research institutes in the coming years, and who
will challenge us to re-shape the way we offer education and conduct research, and who will also contribute to that process, if we embrace them as partners.
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Epilogue

Salla Sissonen

THE PUPIL OF TODAY – THE STUDENT OF TOMORROW

In this book, you have read about various approaches to the pedagogical change – perhaps we can call it a revolution – in higher education. As a final step before you continue on your way, I would like you to meet Anna, a 12-year-old girl from Finland. Anna is actually just a figment of my imagination, an idealization and a generalization of a student just out of primary school in the Finnish system. Although she is still a tween she will likely be knocking on the door of higher education in less than ten years – if she joins the approximately 160,000 students roaming the halls of the Finnish universities or countless others in Europe or anywhere else in the world (Statistics Finland, 2015).

Finland adopted a new national core curriculum for basic education (grades one to nine) in 2014. Since 2016, all primary schools in Finland (ages seven to twelve) have added their local twist to it and applied it in teaching. From the autumn 2017 also secondary schools started on their path on the new curriculum (Finnish National Agency for Education, 2014).

As an afterthought to what you have already read in this book, this chapter will give you a glimpse into the lives of the Annas in the Finnish educational system of today. By opening this window I hope to awaken curiosity, interest and anticipation: When Anna joins the ranks of higher education in about six years how can her individual skillsets be supported and helped to further flourish? Can we anticipate the skills and expectations she will arrive with?

ANNA AND THE FINNISH NATIONAL CORE CURRICULUM 2014

Anna’s teachers have worked for a long time on how to empower and better engage the children in their studies. Hands-on approaches with exploration and practical problem-solving have been encouraged throughout her school years, and maker culture – where things are designed, crafted and analyzed – is very familiar to her. Since first grade Anna has been taught in a variety of creative arts and crafts.

While it has always been a part of her studies, since the 2014 curriculum even more emphasis has been put on helping Anna in setting her individual learning goals and evaluating the steps she has taken in that direction. She was given an increasingly significant role in choosing the most efficient ways for her to learn. Working in collaboration with other students, she was directed to find meaning in her studies, and her teachers work hard to take her personal traits, feelings and interests into account – as well as awaken a lifelong love for learning by showing her that succeeding is always possible. On her path towards self-directed, lifelong learning, Anna is supported in all the steps she
takes, whenever necessary: If she comes across difficulties in learning, they are faced with an elaborate, multidisciplinary support process.

By the time she graduates from upper secondary school, she will have had a decade of practice in finding the learning methods that suit her best. She will have learned to assess her own progress in a multitude of ways and received feedback not only from the point of view of final assessment at the end of a learning block but also throughout the learning process – from the point of view of promoting learning and reaching the learning objectives set for her as well as the ones she has set herself. Anna’s parents are often in contact with the school regarding how Anna is doing and they take part in the assessment and support processes.

While Anna’s studies are based on subjects, Anna’s teachers and other school staff are also cooperating to create multidisciplinary learning modules, collaboration between subjects as well as helping Anna develop transversal competences such as thinking and learning to learn, interaction and expression skills, multi-literacy, managing daily life, ICT skills, entrepreneurship, citizenship, cultural competence, participation and competence in building a sustainable future.

Anna has always had the opportunity to visit and collaborate with companies, museums and libraries. Directed by the curriculum, Anna’s teachers have tried to give her an active but friendly and calm learning environment – also outside the school classroom. For example, Anna’s reading skills have been honed in collaboration with the library: She has made video and audio introductions at school that were glued as QR codes on library books; now any library goer can listen to her input on their phone before deciding on a book. When Anna thinks of a learning environment, she does not only see a classroom let alone a solitary desk and a chair: She sees a mobile, versatile learning space that can be modified and transformed in accordance with the pedagogical insight of the teacher and the lesson or project – a space that encompasses and embraces the wood around the school, the library, the home, the digital environment and the world as a whole. In short, Anna is very much used to employing a wide diversity of methods, varied approaches and environments to learning.

The use of digital environments has become increasingly important over Anna’s school years. She started with light robotics already in pre-school as well as practicing drawing letters and numbers on the surface of a tablet computer and on paper. She has started learning with the help of collaborative games and has already programmed her own small-scale computer game. Next year, her school will lend every student in her grade a device to give equal opportunities for everyone to practice digital skills at home. She will also continue to work on programming, is already storing her school work in the cloud and operates the school’s Learning Management System on a daily basis. Anna is also heard when the school is deciding on digital environments, and her skills are used in developing them. Because Anna knows her ICT, she asked to become a ‘student agent’ – a student specialist that helps out if teachers or other students come across technical issues in teaching and learning. To Anna, computers, tablet computers, other mobile devices and 3D-printers are tools just like paper and a pen; sometimes they are the best tool to choose for a certain task, sometimes something else works much better. She, along with her teachers, has learned to assess which tool to choose for which task. The ‘Iron Age’ where technology came first is long gone, where Anna is concerned.

Anna is very much aware that it is in fact quite likely that the occupation she will have when she grows up might not be invented yet. But she is there, at school, ready and eager to learn, believing in the power of education and knowledge-building – and knowing that no matter what the future brings she can succeed: All it takes is knowing how to learn.
WHAT CAN WE PREDICT OF THE ANNAS OF TOMORROW? SHOULD WE PREPARE FOR HER?

Fast forward six to seven years: Anna is about to enter higher education. Looking at even an imaginary student like Anna is as frightening an experience as it is exhilarating. It is likely that the Annas of tomorrow would find it bizarre to be taught in the traditional methods where absolute objectives or learning tools are presented to big groups of students at a time – or where lecturing is the main method of information delivery. It will probably be difficult for Anna to imagine how knowledge can be delivered in the first place (as opposed to it being built).

As you have seen in this book, steps are taken and changes are made all over the world. However, educational changes and reforms take different shapes in different parts of the world, and major differences between countries, institutions, departments and individual teachers exist in how digitalization or other new methodology is applied to learning (overall views in for example, WDR, 2018; OECD, 2004). It is likely that in a few years as the Annas first start to walk in the international halls of higher education, the diversity between the students will be increasingly pronounced – schools and cities, not to mention countries, move at a different pace and even in somewhat different directions.

Educating the Annas of tomorrow does not mean that the role of the teacher will become insignificant as the learner can just go online and find things to learn on their own. Nor does it mean that each learner automatically has highly-developed competences in understanding the way they themselves learn best, or that all the wheels will have to be reinvented, and all the good old methods thrown out. We will continue to need skilled teachers and instructors, educated pedagogical thinkers with the ability to critically analyze what steps and methods would be ideal for the optimal guidance of each learner. In academia, the balance between teaching and research is another significant point of view when discussing the professional development of the instructors: Is good teaching valued and respected as much as good research? Does the respect show in for example, funding and strategy? Do we communicate in ways that promote equal access to knowledge?

The change that we are seeing in schools and institutions does not happen on its own – it requires leadership, devotion and motivation. We need to be able to answer complex questions like ‘why do we educate’ to find motivation to change teaching methods. We need professional development and training. We need to be able to write and communicate the new ideas in a persuasive way to the right people. We need to find a community of change-makers who help us do it (more ideas for example in Sahlberg et al., 2017).

As an afterthought to this afterthought, it is worth mentioning that the ongoing discussion does not only revolve around the how’s and why’s of teaching, but there is certainly also the essential question of what should be taught. In a world that seems to change and develop at lightning speed, what remains fundamental and unchanged, worth investing our learning time in? What should we teach? In January 2018, Jack Ma, the founder and executive chairman of Alibaba Group, spoke in the World Economic Forum suggesting that with the future of artificial intelligence, we should teach our children in human ‘soft’ skills like values, independent thinking and care for others (World Economic Forum, 2018). Also Ken Robinson, voicing the thoughts of many other educational thinkers, talks about creativity and love for learning as significant targets in learning (for example, Robinson and Aronica, 2015). It makes sense to teach our future professionals to be able to adapt to the changes in their field and the world as a whole, to develop approaches and competences that do not compete with the efficiency of digital systems.
If we accept creativity, adaptability, love for learning and efficient teamwork as something for our students to strive for, should we not extend the same expectation to our teachers and instructors? Indeed, studies suggest that creating coordinated support to allow collaboration and knowledge sharing between teachers is an important piece in improving the quality of teaching (Quintero, 2017). Could this be an approach to be taken when it comes to driving change in teaching and communicating? If educators from across the educational field found ways to collaborate in increasingly efficient ways, would we not speed up the benefits for each learner? At the same time, collaborating with teachers from previous levels of education would enable the higher education staff to meet the Annas they will teach in a few years. And find out if any preparation will still be needed.
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