

# How MOOCs Can Make a Difference

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**Abstract** Universities in Europe are seemingly under pressure from their stakeholders at the societal, corporate and institutional level to respond effectively to the needs of the new global knowledge economy and to the challenges and affordances of the new technologies. As MOOCs entered the scenario they seemed set to revolutionize or replace university education as we know it, undermining the value of university degrees and so threatening the traditional credentialing role and core business of universities. This did not happen. The evolution of MOOCs has demonstrated that MOOCs can play a key role in a rebranding of universities that is designed to increase the potential student uptake of Higher Education and to increase the number and type of services offered. MOOCs thus contribute to a repositioning of universities within the education market in line with a strategy of forging stronger links with the local context and its industry networks, which university governance reforms and reductions in government funding seem to suggest. This paper sets out to identify the emerging trends as universities seek to find a sustainable response to this challenge. It explores the role of MOOCs in addressing some of these policy issues and how they might be included in strategic planning at the University level. The paper is written in the context of recent benchmark analysis at the Federica Web Learning Centre<sup>1</sup>, which has led to the redesign of a new-look interface for the Federica MOOCs platform (federica.eu) that reflects the strategic role of MOOCs at Federico II University, Naples.

**Keywords.** MOOCs, university business models, HE stakeholders

## 1 Introduction

This paper sets out to explore the emerging trends in MOOC uptake and delivery and how these seem to reflect some of the major challenges that Higher Education Institutions (HEIs) in the digital knowledge economy are facing in Europe. The

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<sup>1</sup> Federica Web Learning started life in 2007 as a European Project – Virtual Campus – to research and deliver Open Courseware. It became a fully-fledged University Centre in 2016 supported by European structural funds.

main question posed by this paper is whether the implementation of a wide-reaching MOOC policy at institutional level provides a possible response to the specific challenges identified. The study comprised a literature review of recent articles (2016 – 2018) with keywords MOOCs, MOOC policy, and education innovation as well as Online Learning Reports; close observation of all leading MOOC platforms, including Coursera, edX Udacity and Futurelearn as well as FUN, MiriadaX, Canvas and D2Learn for course type, collaborations, monetisation, and credentialing; analysis of MOOC online press e.g. Edsurge, Edtech; the Chronicle, and relevant newsletters. The context for the study was the redesign of the Federica Homepage to provide specific navigation pathways for a wider target audience and to better reflect the University's MOOC policy. This benchmarking study was done at Federica Web learning (Federica), the University Centre for innovation experimentation and dissemination of online and open learning at the University of Federico II, Naples. Federica is one of the leaders in open-access course production and delivery in Europe, hosting over 300 courses and nearly 100 MOOCs on its two platforms, and a growing portfolio of courses on the edX platform. Although the context was to identify challenges and responses coming from MOOC providers in order to reshape and redesign the MOOC offer within Federica, the results of the benchmarking studies can be useful for other HEIs who are developing a MOOC strategy.

## 2 Background

According to the European University Association (EUA), Higher Education Institutions (HEIs) are under increasing external pressure due to increased importance of higher education for the economy and R&D, because of Europe's need to compete successfully on the global stage, and because of market demands for more quality and quantity education at a lower cost in the current economic crisis [1]. Despite alarm bells from certain authors about the dangers that non-academic players in the Higher Education (HE) MOOC market represented for the quality and reputation of MOOC courses, growing numbers of European HE Institutions (EHEIs) seem to be embracing the MOOC phenomenon. According to the data provided by Class Central, more than 70 European Universities have over 10 MOOCs in their portfolio, but only 30 have more than 20, with a significant concentration of 25 Universities providing over 60% of the total number of MOOCs produced in Europe. Thus it would appear that many institutions seem to invest in a very limited number of high-investment MOOCs in an obvious communication and positioning exercise, preferring to restrict access to the high-volume, online learning content that is designed for on-campus use. For the same reason, most of the University MOOC players in Europe choose to deliver in the English language on one of the big American platforms. Class Central has signalled an emerging trend towards credit-bearing MOOCs, but out of 24 European MOOC Master degrees currently on offer, 12 of these are on Futurelearn, hence a European platform. The major MOOC platforms offer diverse forms of professional certificates including micromasters and nano-

degrees, and most of the platforms have adopted a freemium model with an optional fee-paying verified certificate track alongside the free audit track.

A majority of institutions have a strategy for e-learning and include it in their governance plan, even if the current level of efficacy in policy implementation is in most cases insufficient, as the reports published by the EU JRC clearly showed [2]. Weller discussed the potential benefits of MOOCs in terms of Reputation; Innovation; Delivery; Infrastructure and Student outcomes [3]. We would like to suggest that, although maybe undersubscribed, there are emerging trends regarding the benefits of uptake and use of MOOCs and these can be grouped into four main areas which represent the challenges, opportunities and responses identified. One is associated with harnessing new modes of learning and teaching to modernize and reinforce the traditional core business of universities – which we have termed Multimedia degrees - and the others associated with the changing needs of society and the university's third mission including outreach to schools, addressing local issues, industry collaboration and the global talent market. We have termed these Orientation, Lifelong Learning and Internationalisation. There are indications that the scope and reach of MOOCs could be much broader and that reinforced branding could be a positive consequence of MOOC initiatives designed to address other issues.

### **3 Identified Challenges and main directions**

In the following chapters we will analyze these four challenges and the MOOC response based on the benchmarking results.

#### **3.1 Degrees – Multimedia degrees improve the performance of core business**

Since the early 1900s, university bachelor degrees have been “cemented in the minds of business and government as a hiring tool”, as the basic currency in the job market, and therefore “*the foundation of the academic business model*” [4]. The rise of the new knowledge economy has only served to highlight the importance of bachelor degrees as the basic requirement for the majority of jobs and the main pathway towards a better salary, with the differential between High School graduates and Bachelors graduates going from 42% in 1983 to 80 per cent today [4]. It would seem a good strategic decision for universities to hold on to this core business of preparing students to bachelor degree level. Although authors have suggested that MOOCs may represent a threat to traditional business models, there are other indications that the integration of online learning and curricular MOOCs can help HEs improve the performance of their core business in three fundamental ways:

- **Innovation of teaching and learning models.** Many institutions across Europe are experimenting with mixed modes of delivery via MOOCs used as interactive textbooks, and the EU Institutions have shown support for Blended models with, for example, funding of the Erasmus+ project EMBED<sup>2</sup> a “reference model for the development and implementation of blended learning”. Recent literature has also introduced the idea of “flipped MOOCs” [5] refining MOOC design to “*incorporate gamification and learning analytics as a way to provide more engaging, personalized, interactive, and community-oriented learning experiences*”. Technological innovation matches academic content to student expectations in a digital world, fostering digital and other soft skills. In Italy, where the dropout rate is very high, with only 45% of University registrants continuing to degree level according to data from Anvur (National Agency for Evaluation of University and Research systems) experiments are afoot to provide remedial solutions for undergraduates struggling with particularly difficult “make or break” modules via online components to address this dropout phenomenon, saving the HEIs significant amounts in lost funding and providing a more reassuring picture for the students of tomorrow.
- **More inclusive educational offer.** Curricular content online can provide more flexible study options for working students and overcome personal, physical and geographical constraints. In certain faculties the student-to-staff ratio and number of contact hours required is expensive for the HEI, enforcing number-capping in many of these publicly-funded institutions. Online delivery of certain components could broaden access to larger numbers of students. On the other hand, certain degree courses are over-subscribed with consequent classroom over-crowding, which could be eased by the offer of online courseware and study groups.
- **University governance.** Online delivery allows for new forms of data collection that could inform future evidence-based policy at classroom and Institution level. Cross-referencing online and on-campus data allows: optimization of logistics, administrative organization and accommodation capacity; prediction of success rates and reproduction of best practices; providing better knowledge about their students in order to profile them and facilitate their entrance in the job market [6].

Curricular MOOCs prepare students for credit-bearing exams and, at scale, comprise the building blocks for micro-bachelors, micro-masters or even full degrees. Exams are currently available on-campus but could be made available via proctoring or in examination centres in other Universities in the same country or abroad. The Kiron refugee project<sup>3</sup> is experimenting with online degree preparation and final exams in a choice of partner universities. And other experiments are afoot to

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<sup>2</sup> <https://www.kuleuven.be/english/international/impact/embed>

<sup>3</sup> <https://kiron.ngo>

award credit for MOOCs taken with partner universities within strategic alliances<sup>4</sup>. The new “Degree” section on the Federica.eu platform guides learners to curricular courses comprising full degrees in four of the University’s main subject areas. The first cohort of learners to experiment with this portfolio will launch in Fall 2018 and analytics will allow for comparative analysis, amongst other things, of conversion rates from online course to exam success, and from MOOC engagement to on-campus enrolment.

### 3.2 Orientation – making the right choices

Massive Open Online Courses are emerging as a powerful multimedia tool for orientation. If MOOCs mirror on-campus courses, then signing up online can reproduce the experience of walking into a lecture theatre and following a lesson. Exploring the different subjects on offer, and understanding what is required, makes it easier for potential students to choose the specific university and degree course that best suits personal skills and aspirations. This contributes to better completion rates and reduced dropout rates at the end of the first year, a pressing objective in countries that identify successful study as one of the central issues on their national agenda: 16 of the 35 countries included in the Report 2016 published by the European Commission [7]. If, in the United States, the threat of a student debt crisis of similar proportions to that of the mortgage crisis of 2008, has forced leading universities to address the problem, in Europe the governing and university institutions have only started to experiment solutions designed to maximize inclusion in higher education. Systems like the Italian one have been left behind mainly because university reforms are too slow and incomplete [8].

If national frameworks provide a blueprint for institutional action then France seems to be leading the way in strategic orientation policy, with several actors involved. The FUN platform, the French Ministry of Higher Education initiative to promote online education and digital approaches at a national level<sup>5</sup>, currently offers 5 orientation MOOCs in 4 subject areas that are popular degree choices but are not taught at High School - Health Science, Sport Science, Law and Psychology<sup>6</sup> - as well as a guide to University Institutes of Technology. FUN also provides collaboration workshops with schools to introduce and encourage use of the

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<sup>4</sup> For example <https://uclouvain.be/en/digital-university/moocs/credits-moocs.html>; TU Delft-led Virtual Exchange project retrieved from <https://www.class-central.com/report/delft-virtual-exchange-program/>

<sup>5</sup> Launched in 2013, a public organisation called GIP-FUN-MOOC is now responsible for the FUN platform and its evolutions, and for developing new partnerships in the context of lifelong learning.

<sup>6</sup> <https://www.fun-mooc.fr/news/orientation-cinq-mooc-pour-se-projeter-dans-lensei/#>

MOOCs. The RENASup (National Board of Private Higher Education) also offers MOOCs to help “Choisir l’Université” and to inform students about specific aspects of University study, like recent administrative changes, study plans, online learning components<sup>7</sup>. The benefits of a successful orientation initiative are both direct and indirect, with potentially reduced dropout rates on the one hand and positive repercussions on brand on the other via higher student satisfaction rates, better learning outcomes and improved graduate profiles. Orientation may be of value to HEIs in attracting the right calibre of under-graduate applicant, as indicated by The European Union Personnel Selection Office’s (EPSO) creation of its own 4 module orientation MOOC, designed to provide potential candidates with an extensive guide to EPSO’s selection procedures, an explanation of competency-based assessment, and an overview of eligibility requirements.<sup>8</sup>

Another important aspect of orientation in the school-university continuum is to ensure that high-school students develop the digital and soft skills necessary to perform in the academic context, including research, comparative analysis and digital literacy skills. And this can only be successfully mainstreamed if HEI staff have the skills and attributes necessary to use these in their own teaching and foster them in their students. The MOOC revolution and availability of open and free courses has multiplied continuous professional development (CPD) opportunities for teachers, as well as learning opportunities for their students, offering the possibility of international collaboration and exchange as well.

In view of these findings, Federica.eu has developed an orientation section which includes a representative range of taster curricular MOOCs. Collaborations with local schools to encourage uptake of these digital orientation opportunities include school visits and workshops, presentations at university Open Days, and social media presence. And negotiations are under way to offer preparation courses and simulations for university entrance exams. The section also includes the CPD offering for teachers.

### 3.3 Life Long Learning

By 2030, according to OCSE, half of today’s jobs will have disappeared, and 35% of today’s European workforce is employed in jobs unrelated to their studies. The main MOOC audience in today’s world are lifelong learners, who are using the new learning technology to improve their educational and cultural profile, and upskill or reskill in line with the changing job market.

While Universities need to accept that a one-off in depth education might not be sufficient for today’s students, and find ways of creating more lasting relationships with their students on a drop in – drop out basis. HEs can offer a wide range of professionally-related MOOCs, including digital and soft skills. Some Universities offer ECTS for their MOOCs via fee-paying on-campus exams, the leading

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<sup>7</sup> <http://www.mooc-renasup.org>

<sup>8</sup> [https://epso.europa.eu/content/welcome-epsos-brand-new-mooc\\_en](https://epso.europa.eu/content/welcome-epsos-brand-new-mooc_en)

MOOC platforms (Coursera, edX and Futurelearn) offer verified certificates for a fee, and others offer Open Badges. All have the potential to demonstrate learning and achievement. MOOC-based credentials and their recognition has been the subject of recent investigation by the European Commission [9]. Findings suggest that more robust forms of assessment are associated with more formal credentialing and that these can lead to wider recognition if the providing institutions ensure, amongst other things, quality and supervised assessment. The value of university credentials – degrees, recognition of competences – has not been undermined on the job market, but they are being accompanied on individual CVs by an increasing number of certificates – that recognize skills – whose value is more or less part of the higher education framework. The development strategy for the American Universities on the big MOOC platforms suggests that the tendency is to reinforce and multiply the credentials offer based on the traditional pathways of post-graduate education. Making them more accessible, flexible and economical, and as professionalizing as possible, also thanks to the collaboration of industry players in the creation and delivery of the courses. There is nothing new as regards the training itself, but a sea-change in terms of the flexibility of the tools available, which is leading to an equally radical revolution in the professional training market, which in Europe is slow to take off.

There are important experiences using MOOCs as part of company staff training, and sometimes the courses are created in collaboration with industry partners e.g. the partnership between MIT, Boeing, and NASA to develop a set of professional development training courses on the topic of “Architecture and Systems Engineering: Models and Methods to Manage Complex Systems.” Collaborations including Federica.eu are provision of educational benefits for staff of the FS (National Rail) Network and for employees within the Regional Public Administration. These represent an important step forward in consolidating a culture of training within the country. For companies of the future, it will become ever more important that continued learning be an integral part of their employees’ working and non-working lives, and employees will require an ever-broader spectrum of learning opportunities that they can use to improve their professional skills or simply their own cultural profile. For both Public Administration and small businesses, key players in the development of local industry and commerce, MOOCs allow for personalization of in-house training, drastically reducing costs and increasing the number of available channels. For Cultural Attractions, MOOCs represent a form of publicity as yet unexplored, which could play the role of trendsetter on the international stage.

Federica.eu has created sections addressed to national and local businesses to showcase potential collaborations and educational benefits, as well as sections – jobs and curriculum - addressed to workers themselves who wish to reskill or upgrade their educational profile. There is an Open learning project with the Italian Rail network, whereby the main objective is the culture of transversal and mixed knowledge, so that engineers get to study Dante, for example, as well as the habit of lifelong and self-directed learning, rather than direct profession-related input.

### 3.4 Internationalization

MOOCs can be a powerful driver of Internationalization, and Internationalization is likely to play an increasingly important role in University governance in the future, competing for global talent and as an attempt to fill existing capacity as national student numbers dwindle, as in Germany<sup>9</sup>. Many European HEIs choose to deliver their MOOCs on the big, global platforms like Coursera, edX and Futurelearn to showcase their academic offer to a potentially massive student audience worldwide and boost their institutional profile. This could impact favourably on the numbers of international students attracted to European campuses: The University of Derby, for example, reports that 200 of their MOOC learners subsequently enrolled on an on-campus course, with an enrolment impact of over £1.15 million.

To attract students and researchers to foreign institutions, MOOCs can open up market avenues and be used as a complex form of advertising and dissemination. Online courses, in fact, allow universities to demonstrate:

- **The quality of the teaching.** Students from all over the world have access to the teaching and can judge for themselves if the academic offer matches with their expectations. With the added value of improved language skills. MOOCs produced in bilingual versions can constitute preparation for a study trip abroad, enabling students to reinforce their language before they leave. MOOCs offer students and teaching staff alike the opportunity to interact within a global, culturally diverse classroom and to practice foreign language and trans-linguaging skills.
- **The quality of the research.** MOOCs are a form of dissemination of the scientific research in a specific field, which encourages the growth of a related international research community. At the same time a MOOC reinforces and extends awareness and knowledge of the local context. The lack of awareness as regards the potential linked to dissemination of research is very clear if we look at ERC programs. The most important – and richest – grants in Europe have exceeded American Standards for high-level research, such that they have overtaken the USA by 1% in the top ranking publications. Notwithstanding this, the attention devoted to dissemination currently still stops at the level of guidelines for use (references in websites etc.).
- **The quality of the experience.** MOOCs seem to offer opportunities for glocalisation, combining institutional branding with branding of the local context in a mutually beneficial way. A MOOC that explores a local cultural interest, like Early Music, or Renaissance Architecture, represents a high-quality product from a local university that can be readily exported.

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<sup>9</sup> Retrieved from <https://thepienews.com/news/germany-surpasses-international-student-target-three-years-early/>

This latent objective is particularly significant in Europe where the university citadel has, throughout history, broken down its walls to live in a closer relationship with the city it belongs to [10].

## 4 Conclusions

Universities today are facing the challenge of finding new business models given the crisis of traditional models. Based on trends emerging from the benchmarking study, we concluded that the core business is not in doubt as the MOOC explosion seemed to predict. Furthermore, new players have consolidated their position within the market of traditional under-graduate and post-graduate degrees, while at the same time traditional universities have proved unable to consolidate their leadership position within the lifelong learning sector. At the same time, investment cuts, along with insufficient growth in the relationship between HE and the corporate world, risk increasing the divide between public and private education, and leading to failure of the goal of inclusion, which is at the heart of public education in Europe. With this paper we suggest that the four areas for development identified in this brief reflection represent possible lines of strategic development for universities, that operate separately and in unison to widen their offer – and consequently their market and revenues – and strengthen their branding based on quality and inclusion.

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