MOOCs and other educational resources at the University of Porto

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1 Summary

This document describes how MOOCs and other educational technologies are used at the University of Porto (U.Porto). It is presented as work-in-progress, not only because technological innovation happens quickly in this area, but also because the overarching higher education (HE) policy is influenced by hardly predictable extrinsic factors, such as public financing. All IT-related matters at central level are handled at U.Porto in a division called UPdigital (http://up.pt/updigital), which comprises an educational technologies unit with 7 persons (http://elearning.up.pt). The main role of this unit is to support the e-learning infrastructure used in our 14 schools (30.000+ students in total, c. 2.300 researchers and teaching staff), namely training and support for Moodle, Panopto (video platform), Turnitin (plagiarism detection), and online exams. U.Porto's educational technologies unit started to support the development of MOOCs by the end of 2014, and our first course was launched a year later. A second MOOC is due to start in June of 2016. MOOCs are but one piece in our portfolio of teaching and learning resources, which – besides Open edX, MiriadaX, and the aforementioned platforms – also comprises Office 365 and Google for Education. This portfolio continues to increase as new technologies and trends are identified [1,2].

2 Introduction

Mass delivery through the Internet is the main distinctive feature that sets Massive Open Online Courses (MOOCs) apart from other educational content prepared for distance delivery. The HOME project offers a formal definition of MOOCs as "courses designed for large numbers of participants, that can be accessed by anyone anywhere as long as they have an internet connection, are open to everyone without entry qualifications, and offer a full/complete course experience online for free" [3]. Online courses were available long before the term MOOC gained wide acceptance, namely through learning management systems (LMS) like Blackboard or Moodle. The main differences between a traditional LMS platform and a MOOC platform are essentially the following: 1) The number of participants in a single course is usually much higher in a MOOC; 2) The pedagogical features and administration and assessment modules are usually in higher numbers and more sophisticated in a traditional LMS platform; and 3) Educational content is largely based on video clips in the case of MOOCs. Additionally, LMS platforms are mostly used for blended-learning in formal education, while MOOC platforms currently take a leading role in informal education. As these two scenarios overlap over time, the differences indicated will fade away, and Moodle HQ has recently announced that it will come up with a MOOC hosting service "very soon, may be in June 2016" [4].

MOOCs may be seen as "Open Education" resources, defined by the European Commission Joint Research Center (JRC) as "a mode of delivering education, usually via information and communication technologies (ICTs) or blended learning, which offers alternative ways of building competences and skills, and enables less restrictive access routes to formal and non-formal education, as well as to opportunities for lifelong

learning (with or without formal recognition of learning achievements)" [5]. One important aspect in this definition is the reference to non-formal education — which represents the main educational scenario of MOOCs —, since the European Council recommendation of 20 December 2012 on the validation of non-formal and informal learning asks the EU member states to "have in place, no later than 2018, (...) arrangements for the validation of non-formal and informal learning which enable individuals to have knowledge, skills and competences which have been acquired through (...) open educational resources" [6]. The educational technologies unit at U.Porto supports distance and blended-learning across our 14 schools, comprising a total of over 30.000 students and approx. 2.300 researchers and teaching staff. The teaching and learning resources made available to faculty members are centred on Moodle and comprise additional content-related tools such as Panopto and Turnitin. An internal Open edX server is also available, as well as Office 365 and Google for Education. U.Porto offers two MOOCs that were produced by its educational technologies unit in cooperation with faculty staff. The two courses are offered in the MiriadaX platform, and the second one is scheduled to start in 20 June 2016 [7]. The data available in the European MOOC scoreboard [8] until February 2016 shows a relatively low number of MOOCs developed in Portugal, which is certainly related to country size and funding issues.

3   Problem description / challenges

Our institutional policy concerning educational technologies in general and MOOCs in particular addresses a variety of challenges that are certainly common to a wide range of other European HE institutions. Due to their relevance for U.Porto's strategic plan, it is worth mentioning those that are related to teaching and learning activities, and to internationalisation.

The transformation of student profiles is an important challenge faced by HE institutions worldwide. As stated by G. Kahn in an article explaining how the Southern New Hampshire University reinvented itself through online education, "college is still designed for 18-year-olds who are signing up for an immersive, four-year experience replete with football games and beer-drinking. But those traditional students make up only 20 percent of the post-secondary population" [9]. The flexibility of MOOCs in terms of space and time is able to accommodate the needs of new student profiles. At the same time, when used in blended-learning contexts, they enable a much necessary transformation of pedagogical paradigms. Progressive implementation of flipped classroom methods decrease the number of plenary classes and other instructivist methods that are yet deeply rooted in HE systems. The teaching and learning models where MOOCs are being used can be of great importance to promote student-centred learning, teaching and assessment, which was recently emphasised in the 2015 edition of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (std 1.3): "Institutions should ensure that the programmes are delivered in a way that encourages students to take an active role in creating the learning process, and that the assessment of students reflects this approach" [10, p. 120].

The accreditation of MOOCs is another challenge worth mentioning, and it will remain so while standardised quality assurance and large-scale reliable assessment methods are not commonly used. It is interesting to refer that academic recognition seems to proceed at a slower pace than market recognition, since the 2015 Global University Employability Survey and Ranking carried out by Emerging unveiled that "48% of respondents have recruited candidates due to qualifications they acquired via MOOCs" [11].

Achieving international visibility is another challenge that is worth mentioning, particularly because the cost of joining a higher profile network such as the edX consortium can be prohibitively expensive in the current financial context (one-time membership fee and annual maintenance fee). There are however alternatives to increase visibility — our two MOOCs were released in the MiriadaX platform, which offers an excellent window into the Ibero-American world.

4   Policy options applied / recommendations

Several factors are able to influence the pace at which an institution develops its own MOOCs, and there seems to be a wide consensus about the benefits of investing in this area. MOOCs offer open access to informal education, enable unprecedented opportunities for data analytics on teaching and learning, contribute to student recruitment, promote the transformation of pedagogical paradigms, enable partnerships with industry and other external stakeholders, and are important for institutional internationalisation. U.Porto, like most other universities, recognises these reasons, which are fairly standard across the HE sector. What differs from one institution to another is essentially how they are prioritised, and how to address the underlying challenges. As the e-learning autonomy of teaching staff increases, it becomes possible for the educational technologies unit to spare time and resources that can be used to support the development of MOOC content.

An internal Open edX server was made available for faculty members that are willing to develop MOOC-like content to be used internally in flipped classroom experiments. This server is currently available only within the university intranet, but the effort required for setting up such experiments and the difficulties of producing content have so far limited the impact of this infrastructure. MOOCs that are to be released to an external public are launched in the MiriadaX platform, which is available to the HE institutions belonging to Universia network. Universia is the most important network of HE institutions in Ibero-America, comprising 1.400+ universities in 23 countries, and reaching 19+ million students and lecturers.

We are currently setting up a second Moodle server to split e-learning support to degree-awarding programmes and training programmes. The new server will also host SPOC-like courses with tutoring and accreditation, and three such courses are under development in cooperation with the universities of Minho (U.Minho) and Trás os Montes e Alto Douro (UTAD) to be launched in the beginning of 2017.

5   Recommendations

Being a means to an end, and not an end in itself, the development of MOOCs proceeds in parallel with several other initiatives supported by U.Porto's educational technologies unit. Faculty members are encouraged to use and develop this type of courses, but they are also encouraged to use Moodle, and all other resources and tools comprised in the portfolio supported by this unit. It should be noted that the transformation of pedagogical paradigms needed to improve student success and to cope with new student profiles can benefit from MOOCs, but it can as well benefit from Moodle or even by simpler setups such as Google Classroom and Google Hangouts.

The European Commission Joint Research Center report on HE institutions and openness recalls that the integration of open education into HE systems is a policy objective [5, p. 4]. "Open education" may indeed be seen in a much wider context than just MOOCs (which are normally closed in what concerns permissions to reuse content), and we should not forget that SPARC (the Scholarly Publishing and Academic Resources Coalition) defines "Open Education" as "resources, tools and practices that are free of legal, financial and technical barriers and can be fully used, shared and adapted in the digital environment" [12].

It is important to say that most MOOCs belong to the category of xMOOCs, which follow well-defined learning routes and milestones. Such MOOCs may at first sight seem to promote an instructivist approach, since the students do not have the freedom of defining their own pace of learning, and tutoring is normally restricted to peer-support. Pedagogically-minded faculty will however be able to explore student-centred models, particularly when students are required to collaborate on the production of educational resources (in which case cMOOCs or truly open educational resources are probably a better choice).

The potential of MOOCs to address the mismatch between the skills of young graduates and the needs of their potential employers is not new [13], and the 2015 Global University Employability Survey and Ranking carried out by Emerging has already shown that the informal qualifications acquired through MOOCs are helping companies to overcome this problem [11]. Accreditation of studies made in this form, even if restricted to a small number of credits, and appropriate on-campus tutoring, can go a long way to improve student employability.

Disruptive innovations, which are by definition difficult to predict, will of course continue to happen in this field and will change the premises that we use to develop and align strategies. A few months ago, an Inside Higher Ed essay speculated on whether the acquisition of Lynda by LinkedIn, representing "a marriage between an online learning platform and a social network committed to enhancing and marketing its users' professional skills", could be as disruptive to higher education as Uber was to taxicabs [14]. The recent agreement that led to the acquisition of LinkedIn by Microsoft may certainly be one step further in that direction [15].

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