

Comparative analysis between different pedagogical approaches in (M)OOC – an institutional case study

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Abstract – The purpose of this work is to make a comparative analysis between different approaches to MOOC that are developed in the Polytechnic of Leiria. We compared 4 course formats created by our institution based on classifications and taxonomies that have been proposed by several authors as a way to understand the diversity of the MOOC format. The main goal of this comparison is, on one hand, to classify our typology of courses, both in terms of learning design and institutional investment, and notice if parameters that distinguish these approaches affect the student's path and consequently the course completion rate. We used the table compiled by Major & Blackmon (2016) adding new aspects such as technical and human resources, teacher's role and content types. Results have shown us that there is no significant variation relative to the completion rate, although there is a variation regarding the institutional effort.

Keywords - MOOC, pedagogical approaches, institutional goals, comparative analysis.

INTRODUCTION

At the end of XX century, higher education institutions assume internationalization as a strategic goal (Potočnik & Verheugen, 2007), in order to broaden areas of influence and uptake new students, teachers and researchers, to promote multiculturalism and to increase quality, innovation and development. Online education has emerged as the ideal vehicle to achieve this goal. With the evolution of the web and the technologies surrounding it, new learning approaches have been developed, demonstrating the capacity of institutions to innovate and simultaneously move scientific knowledge closer to society, especially with MOOCs (Dillenbourg et al, 2014; Anderson et. al, 2014; Conole,

2013). Based on this premise, the Polytechnic of Leiria develops, since 2013, courses in the MOOC format. By allowing open access to these courses we share our competences, our scientific knowledge, our resources and practices (Cadima et al, 2016). This enables, sensitise, trains and develops transversal competencies in the participants, while being an adaptable tool able to serve different contexts and an ideal scenario for new learning experiences.

In terms of methodology, the courses we develop are based on a variety of formats that fall into the widespread offer of MOOCs (Zhen et al, 2018; Major & Blackmon, 2016; Anderson et al, 2014; Pilli & Wilfried, 2017). This typology is characterized by the duration, types of activities, structure, types of content and the underlying pedagogical model. Contents are developed in HTML format, including text, image and video, following an instructional design that facilitates learning and ensures access to different profiles of participants and different assistive technologies.

If from an institutional standpoint the MOOC seems to respond to a set of objectives, can we ask if, pedagogically, the goals are achieved? Can the different typologies affect the level of involvement of the participants and their motivation to complete the course? What effectively distinguishes the formats of the courses? What are the technical and human resources allocated to the different formats? These are some of the questions we intend to answer through a comparative analysis of 4 different approaches developed in our institution.

METHODOLOGY

Based on the MOOCs classification table proposed by Major & Blackmon (2016) that compiles the characteristics highlighted by Conole (2013), Clark, (2013) and Moessinger (2013) we created a new table so that we can make a

comparative analysis between our course typologies. This table includes the 12 elements proposed by the authors (ibid): degree of openness, scale of participation (massification), amount of use of multimedia, amount of communication, extent to which collaboration is included, type of learner pathway (from learner centred to teacher centred and highly structured), level of quality assurance, extent to which reflection is encouraged, level of assessment, how informal or formal it is, autonomy, and diversity. We also added: technical and human resources, teacher's role, the underlying pedagogical model, types of content and their compliance with the WCAG. Based on a similar research (Major & Blackmon, 2016), 4 courses were analysed, one from each typology, to compare what effectively distinguishes them. These courses were also compared based on the data obtained from our LMS platform, regarding the number and type of activities, participation rate in the different activities, completion rates and level of satisfaction related to the course.

FINDINGS

Looking at the characteristics, we found that there are aspects that clearly distinguish the courses, those being the duration, the type of activities, the type of content, the structure and the underlying pedagogical model. These differences allow us to categorize them by the main characteristic that distinguishes them: 1) flash MOOC – short-term courses that quickly clarify or introduce a subject; 2) standard MOOC that employs the design of traditional online courses by duration, structure and type of activities; 3) oer MOOC courses based on open educational resources and often containing automatic feedback activities, with an informative or exploratory character; 4) pbl MOOC or problem-based learning courses, presenting a case that requires students' commitment towards finding a solution. In terms of data comparison, the results are similar between courses with different approaches.

CONCLUSIONS

Although the non-conclusive data we gathered, we can consider that regardless of the approach, it is the student motivation that dictates his success, as has been said by several authors (Barak, Watted & Haick, 2016; Shapiro et al, 2017). We may have a tendency to consider "OER" and "flash" MOOC as the most effective approaches, from the learning outcomes point of view, if we only take into account the completion rates. However, these numbers are based on the course completion certificates obtained by student, which emission benefits from broader and less strict conditions in relation to longer courses or courses with activities requiring more effort from students. In institutional terms, the "PBL" courses are the ones that require fewer resources and the "OER" and "standard" the ones that require more resources, with this not necessarily meaning a greater investment or being a factor for the level of sustainability we can obtain from said courses.

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