

# Using a MOOC to enhance learning in higher education blended programs: University of Padua

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## 1 Introduction

There has been growing international interest in the use of Massive Open Online Courses (MOOCs) in blended curricula [1, 2]. They have been used to harness the potential of blended learning, which is the “thoughtful integration of classroom face-to-face learning experiences with online learning experiences” [3].

As a part of this trend, in 2020, the University of Padua developed a MOOC titled “Innovative Teaching: Engaging Adult Learners with Active Learning”. In line with constructivist principles, this MOOC was designed to promote active learning [4], enhance cooperative engagement [5] and develop communities of inquiry [6]. Attention was given to providing a variety of resources with the aim of “addressing diversity of learners” [7] and in giving prompt feedback [7, 8]. The MOOC was proposed as an optional activity in the second year of the master’s course in Adult and Lifelong Learning during the 2020/2021 academic year. It was launched on the FutureLearn platform, and it spanned four weeks.

Previous research reported that MOOCs are generally teacher-centered and learning outcomes could be compromised [9]. Moreover, in most MOOCs, little “value is placed on participation and/or student’s interaction with peers and teachers[...] [and] the course content is not innovative or interactive in comparison with new technology” [10]. In response to these concerns, greater “levels of student engagement” are considered relevant to successful learning in MOOCs [11]. Therefore, the purpose of this study was to address the challenges found in fostering student engagement in MOOCs by exploring the learning experience of the participants. The guiding research questions were:

- How satisfied were the participants with the MOOC based on their learning experience? To what degree did the MOOC meet their expectations and was useful in terms of improving their learning?
- How did the Masters’ degree students perceive the proposed MOOC in terms of engagement, learning results and suggestions for improvement?

## 2 Methodology

A case study methodology was chosen because it allowed the researchers to narrow down the units of analysis, with their own structure, delimited in terms of space, time and actors, and characterized by unity and specificity [12]. The researchers attempted to investigate the learning experiences of the participants in all its complexity using a variety of data sources [13], with a specific focus on the master's degree students. This was based on the idea suggested by Bali [7]—that it makes more sense to investigate MOOCs individually, as the perceived success of a MOOC is relative and depends on a wide variety of factors. A multitude of variables and complexity occur in a MOOC; therefore, a limited picture of that is offered when it is compared to certain standards.

During the analyzed run, 1067 people from 109 countries joined the MOOC, with ages ranging from 18 to 65. In terms of employment status, 46% were working full-time and 21% part-time. Twenty-four percent of the joiners completed at least half of the steps of the MOOC and the 18% completed at least 90%. This last portion of MOOC participants was analyzed more closely; in particular, the opinion of those who completed the course and responded to the final survey (n. 86), including n.31 students of the master course, was considered. The analyzed data were:

- a) quantitative data from the FutureLearn platform, related to all the participants and correlated to the level of satisfaction expressed in a final survey composed of four closed-ended questions and two open-ended questions;
- b) qualitative data collected through a critical incident questionnaire [14] submitted at the end of each week of activities by n. 31 students of the master's degree course;
- c) detailed quantitative data concerning the activities carried out by the same students on the hosting platform, such as the average score of the weekly quizzes and the number of comments posted. A statistical analysis was conducted for the quantitative data from both the portal hosting the course (FutureLearn) and the Excel. Qualitative data was analyzed with AtlasTi.08 software.

## 3 Findings

The results of the final survey helped the authors to answer the first research question; conversely, the information in the second subsection allowed them to investigate the learning experience offered by the MOOC to the students at the University of Padua, answering the second question.

### 3.1 Final survey results

This section demonstrates the quantitative data from FutureLearn and that relating to all the respondents, including students at the University of Padua. A total of n. 86 participants completed the final survey. Almost all the learners who completed the MOOC seemed to be satisfied. They declared that the course met their expectations (49%) and that it was even better than expected (48%). They also agreed that new knowledge or

skills were gained by taking the course (94%). Furthermore, most of them acknowledged that they applied what they learned (74%) and they shared their learning with other people (68%).

### **3.2 Critical incident results**

The qualitative data reported below refer to UNIPD Master's students (n. 31). Through the critical incident questionnaire, the students revealed that the most engaging activities involved videos, case studies, reflection on real-life situations, knowledge application, discussion, and comparison among learners. The students stated that they always felt engaged, except when they faced their inexperience in the subject. This was reported only in one activity of the first week, which focused on the identification of their teaching philosophy [15], and another one of the fourth week, which required the students to share examples of their teaching strategies, having in mind real situations. The declared learning was mostly related to: assessment and feedback, teaching planning, active learning strategies, and the importance of learning through knowledge sharing and reflective practices. In addition, the students declared their interest in deepening some topics like: educational philosophy, teaching and planning strategies/tips, and additional features of feedback and assessment. Further videos, examples, infographics/concept maps, and optional in-depth material were suggested to be added.

### **3.3 Students' activity report**

In this case, the quantitative data shown are related to UNIPD Master's students and provided by the FutureLearn platform. Looking in detail at the report of student activity in the MOOC it reveals that they posted an average of about 58 comments and achieved an average score of 92% in the weekly quizzes over the four weeks.

## **4 Discussion and conclusions**

Answering the first research question, almost all participants were satisfied with the MOOC, which enabled them to acquire new knowledge and skills, even exceeding their expectations. The master's students from the University of Padua were very active in the discussions. In fact, they reported greater engagement when they carried out activities related to real-life situations and when they were able to interact and learn from others. Students were pleasantly surprised by the topics covered, but also by the possibility to interact with people with different professional and cultural backgrounds. They enjoyed learning interactively and from the experiences reported by professionals. In addition, students learned new knowledge and skills about active learning, teaching planning, as well as assessment and feedback, and the scores recorded during the weekly quizzes also confirm the positive learning experience. Based on students' reported experience, the second question was also addressed. In other words, the MOOC presented offered engaging activities and interesting topics, leaving space for students to learn interactively, cooperatively, and actively. The intended learning outcomes were achieved, and the MOOC proved to be a positive resource within the blended program,

overcoming challenges reported in the literature. The interaction and the international dialogue between students and professionals are important aspects that emerged in the research, which could be further explored in the future.

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