# Accommodating MOOCs into HEI: is blended-learning the solution?

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## 1. Summary

MOOCs are without discussion one of the key changers in education, and in particular in higher education. They affect both on-Campus universities and on-line. Advisory boards in Universities face the need to accommodate a new player in the learning process arena. The MOOC tsunami affects Universities, forcing them to offer MOOCs assuming costs. On the other side, MOOC platform managers need to convince Universities that creating and offering MOOCs is a must, generating revenues at the same time.

This article tries to solve the dilemma: Universities need MOOCs - which means assuming the costs of creating them -, or at least that's the impression. MOOC providers need Universities to create them but cannot offer clear revenues in return. In the perfect world, MOOC creation would be free for universities, and could be offered through MOOC platforms to increase visibility. MOOC providers would look for their own sources of financing to get revenues - and generate benefits-.

We will focus on the University point of view. Universities need to bear costs to create MOOCs. The paper will quantify these costs, and analyse how they can be assumed. Our work hypothesis is that the MOOC model can be sustainable if we create MOOCs not for MOOCs themselves but as a way to improve on-Campus teaching. That means the MOOC will not be generated from scratch, but based on a previously SPOC course. If we do so, traditional teaching can partially accommodate the costs of creation.

After the cost analysis is done, we will verify if the model fits into university strategy. The case exposed in the article will be based in a real subject offered to on-Campus students, which has also been offered as MOOC. The subject has been taught both as SPOC model and as MOOC course. We will try to show lessons learned from the experience.

## 2. MOOC Costs

In order to compute costs, we have accounted the different profiles involved in MOOC creation. The profiles we have in our working schema are:

- Instructor: who is a teacher of the University
- Teaching assistant: normally a student enrolled in Doctorate programmes or granted-students.
- Staff: who deal with the platform-related issues and link to the platform provides. In our case analysis, it's the Coursera platform.
- Other technical support: for instance, audio-visual managers, producers and post-producers.

In addition we compute the amortization of technical equipment. We don't assign costs for renting facilities, when they belong to the University (which is true for most cases). With this in mind, our experience shows that direct costs of creating a MOOC range 35k€-75k€ for an 8-week MOOC depending highly on audio-visual complexity.

As a remarkable point, MOOC requires an initial effort (almost 70% of cost) to create and around 30% - even less - to run further sessions.


## 3. Comparing costs: classical teaching vs MOOC model

Is the MOOC cost expensive? From an economical perspective, it depends on the basis of comparison. With this idea in mind, we have tried to evaluate the costs of teaching a University subject. In order to have comparable magnitudes, we have assumed the proportional part of a 12-week subject (so, computing ⅔ of the costs to compare with an 8-week MOOC).

Universities have factors to compute teacher dedication when computing costs. Our university splits costs into two main blocs: preparation and teaching. While the second one is straightforward (depends on the number of teaching hours), preparation costs are based on the ratio defined in this university teaching model. This ratio depends on factors such as group size, complexity and typology of the subject. For the general case - and in fact, for the subjects of MOOCs we are analysing - it's around 1.5. Costs are highly dependent on teaching staff (in our model, as unique factor).

Our analytics show that it's easier to prepare a classical course than a MOOC – and that means lower cost- . On the other hand, it's more expensive to teach, as more instructor hours are required, and also more expensive to repeat. For simplicity -and coherence with the MOOC model -, we have not considered costs such as space allocation or teaching equipment for the classical model. If the MOOC creation could be computed beginning 35k€, teaching an 8-week subject, with around 400 students, distributed into 4 groups with lecture and problem solving / practice sessions has a cost in the range [12k€-27k€] depending heavily on teacher profile.

However, the most important point is that - according to our model - running the course for a second time requires same university - economic - effort. In other words, although it can be easier for a teacher to run a subject for second time, there is no bonus for it. So, costs remain the same independently of the number of iterations of the subject. Compared to the MOOC approach that's a key difference, as successive courses are cheaper to teach.


## 4. A word on strategy

The above considerations were taken into account by the managing team in the university. In fact and prior to them, the University decided to enter the MOOC world by offering three MOOC courses from scratch and just offered public. The idea was to gain knowledge and decide where to put effort strategically and answer one simple question: MOOCs yes, or not?

In our opinion, it's critical to analyse the question and to be able to justify the answer. In our case, two main reasons appear as motivators for 'yes'. The visibility and internationalization opportunity MOOC platforms provide and - even more important - the potential impact on the learning process this kind of technologies can provide.

As cons to the decision, there were the costs of creating MOOCs. In a moment when university budgets are –let's say- 'under pressure', costs need to be even more justified.

## 5. Thinking blended

After analysing the above data, the University tried to assign priority to courses offered on Campus. That means, offering the instructors the possibility to prepare the courses as a MOOC testbench - in fact, SPOCs - which will be first offered inside the University. Doing it this way, we can accommodate much of the creation cost of the MOOC inside the preparation costs of the on Campus subject.

The experience we analysed in deep considered changing the teaching model. The subject had an initial workload of 3 hours per week (2 lecture, 1 problem solving). This model was changed to 1 hour lecture plus one hour problem solving, in addition to MOOC materials to follow explanations. While this model can be used to reduce costs (finally, there is a reduction in teaching hours from 3 to 2 per week), instructors agreed to offer same total amount of hours, but splitting groups to provide better support. As we see, we can decide whether to reduce costs or to increase quality – not only by providing MOOC materials but also by creating smaller groups.

There was an effort to compute how students value the MOOC change. The survey carried out showed these points as the most important to students (rating 1-5, being 5 the higher value):

1. Ability to review explanations (mean 4.6, with 74.9% rating 5)
2. Be able to watch videos anytime and on different platforms (mean 4.6, 74% rating 5)
3. Be able to get immediate responses to quizzes (4.6, 75.8% rating 5)

The survey provides also interesting data for non-valuable items for students. Forums were poorly rated (3.2 with 24.2% 3 or under) and - more shocking - the possibility of having smaller groups was also not really valued (3.4 with 19.4% 3 or less). In our opinion, this result has to be contextualized, and re-evaluated when specifically-designed small-group activities are defined and implemented. Anyhow, if the University could make the effort, students clearly prefer the MOOC version (81%) with almost same percentage rating 4 or higher the experience.

If we measure quality based on student results there is a slight increase in success ratios. We think this data is not statistically relevant yet (it has been analysed for only one semester), but we see a clear increase in people engaging and following the subject.

At the same time, we decided to take the cost analysis one step further. If doing so, we see that the costs of creating a MOOC could be absorbed in the long-term when using the blended approach, if we decide to reduce number of on-Campus hours. In our case, we have decided to keep the number and increase teaching quality, but flipping the classroom could provide also a way to absorb the costs of MOOC creation.

## 6. Conclusions

Managers of higher education institutions, and in particular Universities, have to face what to do with MOOCs. They have costs - that's undoubtable- and a cost-benefit analysis has to be performed. We tried to simplify the model in order to analyse which costs were direct costs, and how they could be absorbed in an on-Campus environment.

Strategic considerations should be made prior to playing the MOOC game. In our case, we decided to offer MOOCs, shifting from an initial 'standalone MOOC' to a 'MOOC from SPOC' model where MOOCs are created based on on-Campus teaching. MOOC platforms provide worldwide visibility and at the same time force a renewal in the way of teaching which can have high impact in the quality of teaching, concepts we would not like to give up.

The analysis of the points above should also provide guidelines for higher education institution managers, who will need to explain the bottom line of MOOCs projects. Having a clear vision of costs and benefits can also help to take management measures to fit costs. In our opinion, the blended learning approach is a way to keep costs controlled, increasing quality at the same time and providing the benefits of being part of a MOOC platform.

As a final word, and with independence of the numbers we offer, Universities – and in particular public institutions – should return value for society and – no doubt – MOOCs can play a role. In addition, there is also the opportunity cost, and in particular for institutions deciding not to enrol. Putting together strategy and numbers should allow managers to evaluate the proper impact of MOOCs in their institutions, and that means answer the first - and not so simple - questions: MOOCS: yes or not? And if so, why and how?

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