



# Understanding the faculty perspectives influencing their innovative practices in MOOCs/SPOCs: a case study

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## Abstract

Learning in environments such as Massive Open Online Courses (MOOCs) and its variations have become a turning point in the design and range of university courses offered, although there is some difficulty in transforming their pedagogical discourse. Additionally, flexible and skillful faculty are required to respond to the diversity and continuous social changes to ensure quality teaching. Understanding the transformations that emerge from the innovative experiences supported by these new learning environments requires an understanding of the faculty who perform them as well as their previous experiences, because it is they who interpret, filter and redefine the proposed changes. Using a pedagogical discourse-based approach, this paper analyzes the backgrounds of the faculty who participate in MOOCs, Small Private Online Courses (SPOCs) or other projects, and interprets the factors that influence their understanding of the practices in these environments. We have found that despite the ignorance of the pedagogical issues of the MOOC phenomenon, faculty with traditional beliefs are compelled to transform their practices using this kind of course design. However, their interests are more focused on the social value of learning by promoting their research areas in an entertaining way, than on the pedagogical value of online education through innovating their practices.

**Keywords:** MOOC, SPOC, Innovation, Faculty's perspective, Pedagogical discourse

## Introduction

In the twenty-first century, universities have lost their monopoly of the production and transmission of knowledge. They face the challenge of adapting to the demands of society, which can be summarized in three key aspects: economy, technology and faculty development. Firstly, the university model is based on economy. It is trying to educate more students, and to improve learning outcomes at a lower cost (Daniel et al., 2015; Mehaffy, 2012). This occurs with contextualized, personalized and collaborative learning designs for students (Ertmer and Newby, 2013). Secondly, technological advances affect universities both through digital transformations and the new generation, the so-called 'millennials' (Bozu and Canto, 2009). The use of ICT changes didactic situations and the teaching-learning process (Salinas et al., 2008: 11). The use of ICT is also the main element in university strategies to face international challenges (Daniel et al., 2015, Chinkes et al., 2015). Thirdly, universities are approaching the professional

development required to provide the quality of education that society demands (Bozu & Canto, 2009). Faculty must adapt to a new profile based on professional competence (Salinas, 2004; Zabalza, 2009). The role of faculty continues to be to support students during their learning process. However, they need to change the kind of learning experiences that have been created. In this new profile, faculty are a student support. Faculty act as a counselor who is flexible and polyvalent. They should also address social changes, to attain quality teaching. Faculty need to be innovative, and practice new and active didactic methods. Learning methods should take full advantage of the current technology and engage students in ways that best fit their needs (Ertmer & Newby, 2013). In this regard training and engagement are also necessary. In addition, it is also necessary for the university to invest in educational resources e.g. space, hardware, and faculty training. This could lead to frustration and make their jobs more difficult. Universities are more concerned about producing innovative research, and their social presence and influence. Teaching and faculty are not their first priority. An institutional strategy is necessary to implement change. Institutions must reflect a change of attitude towards their practices and values (Salinas, 2004).

In this context, the recent phenomenon of Massive Open Online Courses (MOOC) and its variations, such as Small Private Online Courses (SPOC), has been a turning point in the design and provision of university courses (Cabero et al., 2014; Conole, 2013; Daniel et al., 2015; Hollands and Tirthali, 2014; Román-Graván et al., 2015; Zapata-Ros, 2013). MOOC technology uses collaborative methods based on building knowledge with students worldwide to enhance their learning. Universities could also use this knowledge to reach out to a greater audience through the MOOC. Universities could also introduce more participative methods on campus through similar environments such as SPOCs. Universities should implement this because it represents an innovation in learning methods, their network presence, and students' enrollment. It would also generate new university aims in teaching i.e. adults, continuous training, and competence development (Gea, 2015; Hollands and Tirthali, 2014). In the same way that it has aroused academic interest by its disruptive power, the need to investigate the scope and benefits of the practices of extended education and to reconsider the university model grows (Cabero et al., 2014; Chiappe-Laverde et al., 2015; Román-Graván et al., 2015; Zapata-Ros, 2013).

The disruptive and transformative power of MOOCs/SPOCs is in the organization of learning activities which are open to mass participation by the students enrolled in these courses. Distant education could also support face-to-face teaching. It involves free access, collaboration, reuse, remixing, redistribution, inclusion, and adaptation (Cabero et al., 2014). However, this is not a straightforward process. More scientific research is needed to counter the criticisms and overcome their limitations (Liyaganawardena et al., 2013). In addition, it is necessary to analyze the benefits of educational practices using MOOCs/SPOCs to create spaces that are more interesting to learn. In these spaces, real innovation could be fostered changing the way in which learners and faculty interact (Chiappe-Laverde et al., 2015).

Online education offers new possibilities for open and flexible learning (Salinas, 2004), which can promote new hybrid models of teaching practices, with teaching methods that require new types of learning experiences (Anderson and Dron, 2012; Ertmer and Newby, 2013; Hollands and Tirthali, 2014). However, there is great

difficulty in transforming pedagogical discourse into sustainable processes (Alemán et al., 2015; Chiappe-Laverde et al., 2015). Innovation processes tend to be located in the zone between the didactic tradition and the need to adapt to the present (Salinas et al., 2008: 10). In addition, a transferential, flexible and multipurpose faculty profile is required. A profile that is capable of adapting to diversity and continuous social change to ensure quality teaching (Bozu and Canto, 2009). Finally, research is needed to deepen the pedagogical perspective and identify those processes and practices that could foster more active and participatory roles among faculty and students (Baldomero et al., 2015).

On the other hand, the conceptions of the teaching-learning process, to a large extent, depend on the way in which the different educational agents interpret, filter, re-define, and shape the proposed changes (Salinas, 2004). From this perspective, it is important to study these innovative projects not only to observe and analyze what they do but also to penetrate their meaning, to reconstruct their motives and establish the possible contradictions between faculty thought and behaviour (Baudouin and Friedrich in Salinas, 2004). Therefore, in order to understand the transformations that emerge from innovative experiences in pedagogical discourse such as the design, creation and delivery of courses supported in these new learning environments, it is necessary to understand how the faculty are interpreting them.

The main objective of this study is to understand the background and experiences of these faculty and the way that this influences their innovative practices in open and massive learning environments. The final-purpose of this study is to understand how the mutual enrichment between ICT innovation and faculty could work. In particular, to explore whether the innovation with ICT can change teaching practices. Or, conversely, if teaching beliefs and practices can enrich the design and platform implementation of MOOCs. In this way, universities could understand how the policy they have implemented works. In addition, it could also enrich their teaching development policies, driving their faculty to link with a MOOC program.

## **Methods**

A case study with an interpretative methodological approach was carried out with faculty participating in the design, creation and delivery of MOOCs (edX platform) or SPOCs (Open edX platform) of the Program of the Technologies for Education Unit (UTED) of the Universidad Autónoma de Madrid (UAM). The study investigates how these programs have influenced faculty and students and incorporates the previous knowledge and experience of faculty, the resources and material aspects of the MOOC project, the behavior and practices enhanced by the project, and the conceptions and beliefs that emerge from the project. This study is a part of a wider research into how a MOOC strategy works in a university. It also reflects its policies, activities and results. The data have been collected through documents, a platform record and others.

The case study is based on the research into the practical and personal knowledge of faculty (Elbaz in Marrero, 2010). Consequently, the research was carried out in three consecutive phases: (1) Access, (2) Fieldwork, and (3) Analysis and interpretation. All data were collected using a protocol and script of the semi-structured face-to-face interview with faculty which was designed and validated by ten experts. It consisted of 32 questions (See Appendix). Seven were about their background in MOOCs/SPOCs,

and ten about their pedagogical beliefs. The present study is focused more on the faculty perspectives than on their behavior or practices.

The individual interviews were conducted with 15 volunteer participants from a pool of 30 faculty who participated in the eight MOOCs at UAM in the edX platform, published between the period of 2014 and 2016 (See Table 1). They included at least one representative from each thematic area i.e. Arts and Humanities, Social Sciences, Natural Sciences, Health Sciences, Engineering and Technologies.

Previously the faculty had all attended a course about MOOC practices and how to design and offer them. The main contents related to the workflow, the tools and utilities of the edX and Open edX platforms. They also participated in area teams to promote their own MOOC. Some of the faculty also took part in a SPOC project during the same period, which was used to support face-to-face teaching on Campus.

Faculty took part in this UAM course through a team with a grant from their own University who provided technical support to develop materials, to manage copyright, to offer guidelines, and to solve technical problems relating to the platform. Faculty designed the courses and built the contents, playing the role of instructors.

The background of the faculty interviewed relate to their own area of knowledge. They did not have any initial pedagogical training. They learnt to teach by practicing in their own classes. Some faculty discussed pedagogical solutions with their departmental colleagues. And two were participants in faculty training courses. Most of the faculty support pedagogical innovations as a part of a team. The volunteers participating in the study had a variety of teaching experience i.e. novice, mature, or expert; and ICT knowledge i.e. basic, intermediate, or high, (See Table 2). In all cases, they were interested in the MOOC innovation.

**Table 1** MOOCs offered by UAM (2014–2016)

Title	Area	Subject	Length	Faculty
<b>La España de El Quijote</b> (The Spain of Don Quixote)	Arts and Humanities (AH)	Art & Culture	7 weeks	2
<b>Trasplante de órganos - Desafíos éticos y jurídicos</b> (Organ Transplantation - Ethical and Legal Challenges)	Social Sciences (SS) and Health Sciences (HS)	Law / Medicine	9 weeks	2
<b>La Química Orgánica, un mundo a tu alcance</b> (Organic Chemistry, A World At Your Grasp)	Natural Sciences (NS)	Chemistry	6 weeks	1
<b>Jugando con Android - Aprende a Programar tu Primera App</b> (Playing With Android - Learn To Program Your First App)	Engineering and Technologies (ET)	Computer Science	7 weeks	5
<b>Fisiopatología renal y enigmas de la vida cotidiana</b> (Renal Physiopathology And Riddles Of Daily Life)	Health Sciences (HS)	Medicine	6 weeks	3
<b>Idealismo Filosófico: Cómo hacer mundos con ideas</b> (Philosophical Idealism: How to Make Worlds With Ideas)	Arts and Humanities (AH)	Philosophy & Ethics	5 weeks	6
<b>Educación de calidad para todos. Equidad, inclusión y atención a la diversidad.</b> (Quality Education For All. Equity, Inclusion And Attention To Diversity.)	Social Sciences (SS)	Social Sciences	6 weeks	4
<b>De la granja a la mesa: La seguridad alimentaria en la Unión Europea</b> (From Farm To Table: Food Security In The European Union)	Social Sciences (SS) and Natural Sciences (NS)	Law / Food & Nutrition	6 weeks	7

**Table 2** The Backgrounds of the Faculty Interviewed

	Area	Initial pedagogical training	Share pedagogical solutions	Participants of faculty courses	Support pedagogical innovations	Faculty experience	ICT knowledge
Faculty 1	AH	No	Yes	Yes	Yes	Novice	Intermediate
Faculty 2	SS	No	No	Yes	Yes	Novice	High
Faculty 3	NS	No	No	Yes	Yes	Novice	High
Faculty 4	HS	No	Yes	Yes	Yes	Novice	High
Faculty 5	ET	No	No	Yes	Yes	Novice	High
Faculty 6	AH	No	No	Yes	Yes	Novice	High
Faculty 7	SS	No	Yes	Yes	Yes	Mature	Intermediate
Faculty 8	NS	No	Yes	Yes	Yes	Mature	Intermediate
Faculty 9	HS	No	Yes	Yes	Yes	Mature	Basic
Faculty 10	ET	No	Yes	Yes	Yes	Mature	Intermediate
Faculty 11	SS	No	Yes	Yes	Yes	Mature	High
Faculty 12	NS	No	Yes	Yes	Yes	Mature	Basic
Faculty 13	SS	Yes	No	No	Yes	Expert	High
Faculty 14	NS	No	No	Yes	Yes	Expert	Intermediate
Faculty 15	HS	No	No	Yes	Yes	Expert	Basic

All the interviews were conducted in Spanish using colloquial language. In the translation processes to English it is possible that some of nuances may have been lost.

The analysis and coding of the pedagogical discourse presented in the interviews was carried out according to the categories that emerged from them, for example: experience and strategies in teaching, experience in educational technologies and eLearning, experience in teaching innovation, and experience, motivation and expectations with MOOC, SPOC or others. All pedagogical conceptions, doubts and uncertainties that emerged, and how they were received and answered are highlighted below.

**Results**

During the development of the study, we firstly sought to identify the period of teaching experience and a general definition of teaching practices, in order to understand the previous conceptions of faculty discourse. Secondly, we identified the extent of the use of ICT and the faculty’s experiences of online teaching. Thirdly, we tried to identify their previous experiences in innovation and collaboration that is required by these teaching projects. Finally, we analyzed their prior knowledge about open and mass learning environments, as well as the motivation to participate in such innovative projects and their expectations prior to their involvement with MOOCs/SPOCs.

**Teaching background**

Regarding their teaching background, which was mainly face-to-face, the definition of the characteristics of the participating faculty can be analyzed by looking at the differences between the three groups. The groups were analyzed based on the number of years teaching and in relation to their management of educational technologies.

It is interesting to note that the composition of the teaching teams participating in a MOOC/SPOC innovation project comprised at least one faculty from each experience

group i.e. novice, mature, or expert and consequently they could complement the shortcomings of the others in their group.

In general, they mixed theory and practice. There was a concern that their lessons had a practical sense and would be able to offer a variety of activities, both individualized or collaborative, as well as a variety of materials i.e. audio-visual, documents, exercises, although this entails much more planning and constant review.

“I try to bring to the classroom the reality that can be found later in their work, not only to explain the theory but with the instruments and jurisprudence and the practical cases that appear in the newspapers, so that the students see these sentences from the prism of a lawyer.”(Faculty 7).

“Before the Bologna Plan obliged us to divide the classes into theoretical and practical, I had already combined them using all kinds of materials: handwritten, iconographic and visual sources. And then, the resources for each of the topics included: a summary, contemporary documents, literary documents, cartography, music, film, bibliography and electronic resources.”(Faculty 6).

In addition to avoiding final exams, they also give more focus to the mentoring, guidance and interaction with their students.

“I try to do a follow-up which implies continuous evaluation, for example, small exercises that are not exams, done by means of tutorials, this results in continuous work.”(Faculty 1).

### **Use of ICT background**

With regard to their experience using educational technologies, most faculty identified themselves as having a high level of knowledge and use of ICT in their teaching. This means that they strive to develop the variety of multimedia materials available in the platform, and understand its pedagogical goals by including them into the design, although they have difficulties implementing them.

Some of the faculty have an intermediate performance and feel able to use ICT in their teaching. However, while they are competent, their use of ICT in their teaching is moderate.

However, for a few faculty, the level of their performance is low, although they make use of, and strive to learn about each tool:

“I don't have a very strong performance (laughs), but I try every year to learn a little more. I am not an expert in ICT, but the truth is that I see its functionality and I strive [...]. But I do, I do and I feel more and more skilled.” (Faculty 12).

In addition, those faculty that find it difficult to keep up to date usually rely on their peers:

“[...] I have a lot of support from my colleagues, I also have a husband who is crazy about these things and he helps me a lot. I am learning when I need to: if there is a task to be done, then I learn it. But I do not ask myself how I can make more use of these technologies [...]” (Faculty 7).

Finally, some of the faculty who have a high performance are constantly testing and innovating with ICT as a teaching support:

“Of course, we use everything, not only Moodle as a repository, but Moodle as a tool that allows us to integrate many more tools in turn, such as video, presentations, images, animations, questionnaires, that is, we try anything that we believe may be of some use and if it convinces us we continue with it [...]” (Faculty 13).

Relating to their experience of online teaching, we discovered that most of the interviewees did not have any. Therefore, it is a much greater challenge to develop teaching using a network. A couple of the faculty were somewhat familiar with online teaching as a result of their experience in teaching blended master’s programs.

A few faculty have experienced online teaching, but without effective tutoring and follow-up of students:

“Yes, it was probably 12 or 13 years ago when I joined a project called “ADA-Madrid” and it was a very innovative project in which the six public universities in Madrid participated. I went there to create a course, and that’s when I was introduced to online teaching [...]; the truth is that it has been successful. [...] it was very instructive because [I felt] aware of the beginnings of something, [...]” (Faculty 14).

#### **Innovative teaching background**

The results of the faculty’s backgrounds in teaching innovation revealed that all the faculty had had some previous experience. In fact, many of them acquired this through grants from the University with endowments to support innovation projects. They were not as disruptive as the MOOCs, SPOCs or other courses not only with respect to their mass involvement, but also for the change in the teaching strategies demanded by the environments of these platforms which are centered on the students’ experiences.

“[...] I think that’s why I like innovation, you always learn when you do something new. Then, I have had this all my life, I love learning and when I suddenly see a new idea, something different, I enjoy it [...]” (Faculty 7).

Another important aspect is that innovation processes are carried out through collaboration with other faculty. Consolidated teaching teams are formed for collaborative work, whether in teaching, research (they work together in R & D + I) or innovation, with or without the use of ICT. In addition, some of these innovation projects are multidisciplinary, working with faculty from other fields of knowledge.

#### **MOOC background**

In terms of knowledge and previous experience of the MOOC or SPOC phenomenon, it transpired that this subject was completely unknown by some of the faculty. Many of them justify this as a result of the lack of time to keep up to date with the latest technological trends in the academy and having learned about the subject through these grants.

However, some faculty did have some previous knowledge these kinds of courses, but only superficially. They had used them to try to improve the subjects they teach:

“I did one of the Coursera. About networks... Another of MiriadaX, also about networks but using big data technology. It was to train myself [...], to prepare a related topic. I've used it for how they teach, and what it teaches. Rather than 'how,' I was interested in 'what,' It helps to prepare you. Instead of looking at a book, you prepare yourself with a course like this.” (Faculty 10).

The interest in networked learning has allowed faculty to be very aware of their pedagogical philosophy and the difficulty it entails.

“I had participated as a student in a Coursera course. I finished it because I was very interested in the course, well, it was a part (...), I finished it because I use it in my job. It was difficult for me to finish it. [...] It was too long. I thought that the course would only take the time to watch the videos, but in the end there were a lot of tasks that I had to do on my own [...]” (Faculty 4).

One faculty stood out for their remarkable interest in exploiting in depth all the possibilities of these environments, both for personal and professional use:

“[...] When I discovered the MOOCs, I found it very interesting for me as a faculty member, because it allowed me to acquire knowledge in other areas of faculty training [...] Once you participate in one, you start to take all kinds of courses, some simply focused on personal hobbies. I have finished those that have been interesting, including some with verified certification [...]. I started some MOOCs but then left after the second or third week when I realised that were not contributing to my personal training or that the contents were superfluous [...]” (Faculty 13).

With respect to the motivation and interests that led the faculty to sign up for the grant for the MOOCs/SPOCs courses, the factors can be summarized as follows. Firstly, they were intrinsically motivated on a personal level to learn something new, to update, and to transmit or make public some academic knowledge of their specialty as a result of a research project. In addition, some wanted to be part of a group, and to work together on other academic projects.

Secondly, they had an extrinsic motivation at a professional or institutional level to produce a novel piece of academic research and to make a compilation using a variety of materials, or to give visibility to their own area of research and teaching.

“[...] The university has invested in us as faculty through all the time we train students with a high level of quality. [...] I thought it could be a good way for the university to expand its activity, and we could make ourselves known in an increasingly internationalized context.” (Faculty 12).

Finally, the vast majority of the participating faculty did not have any expectations. Some faculty were interested in teaching a large number of students from all over the world. Overall, their expectations with regard to what would be learned by the experience



were very low, but were all exceeded. In addition, some of their personal expectations were closely linked to the motivations described above.

“My expectations were twofold, on the one hand, well, I’ll see if I am able to, then once I know, and I have participated in mixed activities, I’ll see if I can create a useful course for our students. On the other hand, it was to work with those potential students across the world, and for them to know our way of teaching and the subject on which we had focused this MOOC. A specialized subject in which, previously, we had a group of faculty that obtained a research project, funded by a public grant. What we wanted was to make the fruits of our research known.” (Faculty 13).

However, some faculty expected that the project would be easier to do i.e. something closer to the usual teaching process. However, they were surprised with the effort that planning the course demanded.

Finally, some expectations were based on teaching in an entertaining, fun and attractive way because it is a more creative and unusual way of teaching than formal university education.

“Most of it, [...] for the students, to make it attractive, another way to get to learn in a multidisciplinary way” (Faculty 15).

## Discussion

The results have revealed many similarities among faculty who experiment with designing and implementing MOOC. Faculty, despite having some established traditional beliefs, seek to update, reflect and innovate their teaching practice supported by ICT.

In relation to the didactic strategy, faculty presented a very varied and personalized self-definition that can be located in a continuum: from traditional strategies i.e. direct teaching, memorizing, and the passive student; to student-centered strategies i.e. active, participatory, interactive with faculty, peers or content, (Salinas et al., 2008). Most faculty define their practices as traditional, justifying their benefits by the direct interaction that face-to-face teaching provides. That is consistent with their background, built in the classroom, without training and theoretical references.

The few previous experiences of online teaching reported were like traditional teaching. Nevertheless, some faculty recognize the advantages of virtual teaching as a complement to face-to-face teaching. Many others are aware that they can take advantage of both methods, and see them as a trend in a near future.

In addition, these faculty have a teaching strategy with very common traits in the three groups of teaching experience i.e. novice, mature, and expert. It is characterized as more traditional and conservative in design (masterly) than a more innovative (collaborative) strategy. The difference in the perception of teaching among these groups is essential to understand the teaching itself (Marrero, 2010: 232). Faculty are trying to introduce themselves in the learning process of the students. On the other hand, they are recognizing the importance of open spaces for the participation of the students, although they tend not to promote.

Finally, it appears that the growing interest of faculty about MOOCs, SPOCs or other variations is accompanied by ignorance about the phenomenon. However, the faculty

motivations were consistent with the objectives of innovative projects. They are interested in the following goals: the social value of learning, the dissemination of specific knowledge for a general audience, or the opportunity to teach a relevant subject in an attractive and entertaining way.

### **Conclusions**

This study has been able to identify some of the common traits of faculty who are interested in the new multimedia and digital learning developments in Higher Education. It is remarkable that a dual intentionality in the faculty's motivations: either personal by receiving something such as recognition, credits, or training, etc.; or professional by contributing something or giving visibility to something in their area of research.

MOOC learning design tends to address more an individualized learning than a collaborative learning process. It is addressing the difficulties of managing the diversity of the public who form the networked learning communities. For this reason, there is little experience of the possibilities of using ICT to foster new pedagogical models.

In spite of the use of a traditional strategy, there are traits in their pedagogical discourses that contradict this perspective by speaking of a teaching centered on 'the student's learning process'. This demonstrates the effort to adapt to the current reality, which is also consistent with their innovative background.

Finally, this scenario of the contradiction between discourse and practice on the future of higher education related to ICT indicates that the initial experiences will be very difficult. The university must provide the support required for creating teaching networks, specialized technical services, training courses, and practical examples, etc.

### **Appendix**

Protocol and script of the semi-structured face-to-face interview with faculty

#### **A. PREVIOUS KNOWLEDGE AND EXPERIENCE:**

1. What is your area of knowledge or university department? How many years of teaching experience have you developed in them?
2. How would you define your work in face-to-face teaching?
3. How do you classify your level of knowledge and use of ICT?
4. Did you participate, as a faculty member, in any kind of on-line teaching before the innovation project?
5. Did you participate, as a student, in an online course of the MOOC/SPOC type? How would you define your didactic potential for university education?
6. What motivated you to do a project of innovative teaching in these new platforms MOOC/SPOC?
7. What were your initial expectations for teaching supported by virtual learning environments and educational technologies?

#### **B. MATERIAL ASPECTS AND RESOURCES OF THE PROJECT:**

8. What is your MOOC/SPOC innovation project about?
9. How have you planned and conceived the contents, resources and infrastructure of your MOOC / SPOC project?

10. What ICT resources have you used in the project and why? And what ICT resources didn't you use, and why?
11. How effective is your teaching using the platform? How effective is learning implemented?
12. What has changed in the content design, the training process, the material or resources used and the use of the learning spaces due to the innovation project? And how has it changed?
13. What do you think about the support services of UAM's Educational Technology Unit?
14. How does the training and structure offered and recommended by UAM to implement these innovations affect the design of your project?

#### **C. BEHAVIOR AND PRACTICES ENHANCED BY THE PROJECT:**

15. How have you planned and conceived the teaching activities, assessment, mentoring and communication approaches for your MOOC/SPOC project?
16. What experiences or learning activities have been implemented in your MOOC/SPOC innovation project, and why?
17. What has changed in the way teaching materials, communication with students, activities and evaluation have been put into practice? And how has it changed?
18. What aspects of teaching practice do you think are modified, and in what sense?
19. What have you learned from the other faculty with whom you have set up your MOOC/SPOC course? Do you keep in touch with them?
20. What personal and professional skills have developed or emerged from organizing your MOOC/SPOC course?
21. Are the competencies required for the MOOC/SPOC participants the same as for the university students in face-to-face or other classes?

#### **D. BELIEFS AND CONCEPTIONS UNDER THE PROJECT:**

22. What led you to explore the MOOC/SPOC learning environments?
23. What do you think of online teaching (MOOC/SPOC) and its opportunities to generate new pedagogical models?
24. At present, what role do technologies have in university teaching?
25. Has your experience with MOOC/SPOC changed your way of conceiving the processes of innovation of face-to-face teaching supported by online teaching?
26. Do faculty who support their teaching by new learning environments, such as the MOOC/SPOC, play the same role as those faculty who use exclusively traditional teaching methods?
27. Do students who participate in MOOC/SPOC require the same autonomy and diversity in the learning process as other college students?
28. Has the experience with MOOC/SPOC changed your conceptions about how it works in the classroom and the didactic processes of face-to-face teaching?
29. Has the experience with MOOC/SPOC changed your conceptions about your identity as a faculty member and your interaction with students?
30. Has the experience with MOOC/SPOC changed your conceptions about the possibilities of ICT and the aims of university education?

31. Has the experience with MOOC/SPOC changed your conceptions about the role of the university and the public service they offer?
32. What ideals do you think are behind the new pedagogical approaches supported by ICT?

#### Authors' contributions

AF participated in the design of the study and performed the qualitative analysis. JP conceived of the study and participated in its design and coordination. Both authors read and approved the final manuscript.

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The authors declare that they have no competing interests.

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