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# A Retrospective Feedback of MOOCS in Morocco

## What is the Best Scenario for the Moroccan Higher Education?

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The integration of MOOCs into the Moroccan Higher Education (MHE) took place in 2013 by developing different partnerships and projects at national and international levels. As elsewhere, the Covid-19 crisis has played an important role in accelerating distance education in MHE. However, based on our experience as both university professors and specialists in educational engineering, the effective execution of the digital transition has not yet been implemented. Thus, in this article, we present a retrospective feedback of MOOCs in Morocco, focusing on the policies taken by the government to better support the digital transition in general and MOOCs in particular. We are therefore seeking to establish an optimal scenario for the promotion of MOOCs, which emphasizes the policies to be considered, and which recalls the importance of conducting a delicate articulation taking into account four levels, namely environmental, institutional, organizational and individual. We conclude with recommendations that are inspired by the Moroccan academic context that focus on the major role that MOOCs plays for university students and on maintaining lifelong learning.

## 1 Introduction

By following the path of foreign universities, the Moroccan Higher Education (MHE) is being part of a policy plan to normalize the integration of the digital transition as a potential lever of the great transformation of higher education. Being aware of the scope and the importance of the digital transition, MHE is committed, on one hand, to numerous projects and partnerships aimed at training and accompanying teachers and, on the other hand, providing the necessary means and resources to establish the development of this transformation.

Being aware of these changes, many academic initiatives have begun to emerge. The first experiences were mainly marked by initiatives taken by university pres-

idents through the creation of centers dedicated to university professors, where they can design and develop online courses. The first university to be involved in MOOCs is the Cadi Ayyad University of Marrakech (UCA), that in 2013 created a “*Pedagogical Innovation Cell*”, a very well-equipped center that provides the necessary equipment to design online courses (Computers, recording studios, software...). In this context, we mention the UC@MOOC project of UCA, launched in March 2013 with the creation of the <http://mooc.uca.ma>, a platform dedicated to online courses for students with totally open access.

In addition, in 2017, a partnership between the French agency “*Agence Universitaire de la Francophonie*” (AUF) and the Mohammed V University in Rabat aimed to train teachers on designing and implementing MOOCs and to support and encourage researches on topics related to pedagogical innovation and digital technologies. In fact, experiments carried out in the context of the cooperation between higher education institutions and the AUF, in particular by participating in the financing of scientific events on pedagogical innovations, have helped to set the stage for innovative digital practices in general and MOOCs in particular.

Also, the different national meetings known as “*Rencontres Universitaires du Numérique*” (RUN), which started in 2015 in Marrakech and were then held annually in several Moroccan cities, gave rise to the “*Maroc Université Numérique*” project, which was materialized by the creation of the platform “*Maroc Université Numérique*” by the Ministry of Higher Education, “*France Université Numérique*” (FUN) and the French Embassy. The purpose of this agreement was to set up a Moroccan white label platform to enable Moroccan universities to develop MOOCs and SPOCs or any other form of online courses.

At the same time, and with a view to promoting MOOCs and SPOCs within higher education institutions, a partnership under Erasmus+ was launched in 2017. The project involved 14 Moroccan and European partners in a consortium. The interest of the project was to pool the different experiences of Moroccan universities conducted within the framework of the MOOCs and SPOCs courses in a single national platform which will be accessible to a large number of learners/ students.

Reflecting on the above, it is obvious that there is a willingness to promote MOOCs in MHE. But the real finding is that the digital transformation is just beginning to emerge taking an important place in the higher education system. The report of the Higher Education Council [6] states that: “*What marks the current digital situation in the Moroccan higher education is the disparate nature of existing projects and experiments at universities that have developed, with their own means, internal digital environment applications and platforms.*” (p. 69).

## 2 Covid 19: A Real Accelerator of Distance Learning

There is no doubt that the Covid-19 health crisis has challenged the effective integration of digital practices in education. On the Moroccan side, decision-makers have taken the opportunity to reinforce the digital education in the higher education scene, allowing a rapid and real integration of distance education.

### 2.1 A change of posture among teachers

Before elaborating on the various decisions taken by the government, it is crucial to underline the change in attitude observed among teachers. The adoption and implementation of digital practices in the university context is primarily a motivation act of teachers. However, and we quote here our experience of designing a SPOC within our institution at the Faculty of Science of Rabat (FSR), university teachers were very reluctant to take part in the SPOC experience. They have often expressed that they are neither interested in nor willing to change their practices, which they consider to be efficient enough to be replaced by new practices beyond their capabilities. Indeed, this reluctance is explained in their relationship to ICT, because they are not convinced of the pedagogical usefulness of these technological tools and only use them for pedagogical management and exam preparation [1, 12, 3].

However, this “forced” immersion, during the Covid-19, to use platforms such as MOODLE, Classroom, Zoom, Meet etc to ensure the pedagogical continuity has positively impacted the teachers to reconsider their practices and to open up more about what the digital transformation could bring to their pedagogy. For example, some teachers have maintained regular use of educational platforms such as Moodle and Classroom. In addition, requests for online course design, including MOOCs, has raised. We cite as an example: a call for projects launched in 2022 by the “*University Mohammed VI polytechnique*” (UM6P) to develop an or the online course (MOOCs). This project has succeeded, for the first time, in bringing all public universities together and in attracting teachers to join. This was demonstrated by the number of projects selected, representing 73 submissions from all the Moroccan public universities.

### 2.2 A more “open” ministerial vision

In July 2021, the former government established the legal framework for distance education. In fact, the regulatory text to set the measures and conditions related to distance education provided by framework law N°51.17, has been adopted. The decree on distance education N°2.20.474 stipulates the importance of developing

distance education in addition to face-to-face teaching. The decree, composed of 18 articles, provides a precise definition of distance learning and its types by establishing a list of measures relating to the structuring and organization of distance education. Some of the statutory measures are:

- Teacher's training
- Creation of administrative structures for distance education
- Integration into training programs of introductory modules for the use of ICTs and computer programs in distance education
- Creation of a national committee and regional monitoring, development and evaluation committees
- Creation of studios, in particular in institutions of higher education dedicated to the production and recording of audiovisual digital educational resources according to current standards.

In the same vein, the current government relies on digital technology as an important pillar in the new architecture of the Moroccan University. Indeed, decision-makers have become aware of the urgent need to modernize the Moroccan university to be at the level of the so-called 4.0 universities. In the ministerial program, we talk about an open and connected university a "smart university" where MOOCs are an integral part of the Moroccan education system. The university is moving towards a learner-centered mode of learning that seeks to offer a faster training which is better and more accessible at a lower cost, in a more practical way and in a new approach that reconsiders time and space.

Thus, the University 4.0 highlights a hybrid pedagogy in addition to the face-to-face one, where learning is also done in a flexible and mobile way by MOOCs and SPOCs. In a testimony of the Minister of Higher Education, Scientific Research and Innovation, he calls for more openness to MOOCs by testifying to the observed benefits of the Moocs at the University Cadi Ayyad of Marrakech (Morocco). According to the experiences of Cadi Ayyad University, Moocs enable students to learn and comprehend a particular aspect of the course at their own pace, or to quietly prepare for the next course in person for improved communication with the teacher.

Indeed, this pedagogical choice becomes more persistent in an educational system marked by massification. It should be remembered that the human and material resources available in Morocco are not able to meet the needs of learners, so institutions must highlight a dematerialized teaching by MOOCs and SPOCs as an alternative to massification. In this sense, the Report of the National Council of Education states that "The Mass University creates new requirements and skills

for the research teacher, such as teaching large numbers of students using new technologies. . . using new digital means to counter laboratory deficits, teaching students remotely and designing MOOCs.” [6]

Thus, digital education can be a solution to massification insofar as the scheduling of distance courses could lighten the face-to-face ones. Replacing a lecture course that takes place in a crowded amphitheater, where interaction with the teacher is almost non-existent, with an online course developed in an active pedagogical approach, would increase the performance of students [8]. In fact, this new model of education would be aided by combining classic face-to-face learning with online learning, since it has been shown that students can learn more efficiently online, with an increased retaining rate of 25–60 % for online study versus 8–10 % in a physical environment [4]. This best performance will be possible thanks to the advantages offered by the online course (flexibility, freedom, time, unlimited viewing of videos. . . etc), allowing each student to consider learning at his own pace.

It seems clear that Covid-19 was a catalyst and a driver for the deployment of distance education. In his article [14], Michael Trucano discusses the importance of “tipping points” for the expansion of educational technologies. A reality we have experienced and which is perfectly applicable to the context of the MHE.

### **3 What Is the Best Scenario for Moocs in the Moroccan Higher Education?**

From all the above, it is clear that Morocco has made considerable efforts to improve teaching practices related to distance education. This is reflected in the Ministry’s ambitious policy. However, and based on our feedback as both a university professor and a specialist in educational engineering, the tangible implementation of these decisions has not been yet implemented. We are already in the middle of the 2022/2023 academic year and yet in our classes, no change has been observed. So, through this article, we are trying to create a scenario, which focuses on policies and learners, and which we think could make this digital implementation more concrete.

#### **3.1 Policies**

First, all the conditions needed to deploy innovation in the university education system must be taken into account. Each level must be articulated in a complementary hierarchical logic. Bédard and Pelletier (2004) (cited in the report [2])

are interested in these conditions. They highlight several organizational elements that, to give rise to innovations, require a delicate articulation between four levels, namely environmental, institutional, organizational and finally individual. Thus, in the following, we present our vision for an optimal scenario that draws inspiration from the Moroccan university context and can be applied in a national scale.

**Environmental level:** We have made it clear, above, that the government has put in place the foundations of distance education, on one hand through projects and partnerships with other countries and on the other hand through the adoption of laws and legal framework for structuring distance education. Nevertheless, it would be necessary to go beyond the texts on paper to translate them into concrete acts and decisions on the ground. All government actions must be implemented and made concrete.

In this sense, we propose the creation of a national official open platform that offers a rich and varied catalog of MOOCs that take into account the specific needs and expectations of Moroccan learners (disciplinary courses, foreign language courses, soft skills courses, etc.) as well as ensuring life-long learning for all. In addition, the government must allocate a budget assigned to the promotion of digital technology, in particular by funding projects led by research teachers. For its part, the Ministry of Higher Education must give accreditation to the trainings/courses that include MOOCs and SPOCs in their programs.

**Institutional level:** In the absence of a hierarchical will, teachers who are the real actors and agents of change within universities do not feel concerned or motivated to convert to digital. Thus, the institution must have a well-considered strategy for the deployment of distance learning [7]. Its role is to provide leadership in promoting the design of MOOCs and SPOCs. Partnerships with other institutions should be encouraged in order to share different experiences and create a competitive environment. In addition, funds dedicated to departments are also required to provide the necessary funding to project teams. The position of the Open University of Brussels, for example, in promoting MOOCs within its institutions testifies the commitment of the institution which has been reflected in actions such as “promote innovation in teaching and improve the quality of student learning, support the professional development of teaching teams in order to contribute to the dissemination of knowledge to a wider audience than the one of the university as a way to develop an open access and to study a new field of research in the field of education.” [11]. It is certain that without the commitment of the institution, any personal and isolated initiative of the teachers will not lead to the expected results and risk being marginalized by the students.



**Organizational level:** For the organization component, the digital strategy must be accompanied and supported by logistical, material and human resources (equipped studios, a technical and techno-pedagogical team, etc.) [3]. Teacher training is a critical component that needs to be prioritized. This would create a framework to make them aware of the digital revolution and would open up the possibility of making them reconsider their practices while discovering new ways of teaching offered by the digital technology. For students, they must have access to the internet by ensuring a good network on campus. Morocco has, of course, put in place various strategies in collaboration with Moroccan telephone operators to diversify their offers in order to make the Internet accessible to the whole population, but it turns out that a lot of work remains to be done in this sector. In fact, statistics from the “The Global Information Technology Report 2016 – Innovating in the Digital Economy” (Table 1) reveal that Morocco is below average when it comes to individual usage. We can read that Morocco is ranked 60/139 concerning “Individuals using the Internet”, 63/139 for “Household Internet access” and 69/139 for “School Internet access”.

**Table 1:** The Networked Readiness Index: 6th pilla: Individual usage.

INDICATOR	RANK/139	VALUE
<b>6th pillar: Individual usage</b>		
6.01 Mobile phone subscriptions/100 pop.....	42	131.7
6.02 Individuals using Internet, %.....	60	56.8
6.03 Households w/ personal computer, % .....	61	52.5
6.04 Households w/ Internet access, % .....	63	50.4
6.05 Fixed broadband Internet subs/100 pop.....	94	3.0
6.06 Mobile broadband subs/100 pop.....	93	26.8
6.07 Use of virtual social networks* .....	77	5.5

Since a lot of individuals, who can also be students, don't have access to Internet at home, it is then up to the institution to remedy to that problem. Indeed, “The institution’s material support is then perceived as facilitating the implementation of the digital transformation when it is existing, and as an obstacle to the implementation when it is absent” [2, 3].

**Individual level:** the implementation of a successful digital strategy is primarily related to the motivation of the teacher to share his knowledge and to adopt a position of openness. Thus, strategies must be developed closely with teachers in order to involve them. Note also that the design of a MOOC takes an average of eight to nine months, which is not easily perceived and accepted by teachers. As a result, it becomes necessary to support the professional development of the teaching teams engaged in a MOOC project by the recognition and appreciation of the work by the hierarchy. Also, the integration of designing online courses as a means of promoting and advancing the visibility of courses in a national platform that would put forward the expertise of professors and create a competitive dynamic between institutions.

### 3.2 A student-centered scenario

We recommend that the integration of MOOCs and SPOCs into the universities' curriculum should be done in a learner-centered approach that takes into account the specificities of the Moroccan university students. Indeed, based on our experiences within the FSR, the new students need to be guided and assisted at every stage, especially in the first year that marks the transition from high school to university. Also, our students care more about the grade than the skills/competences. That is, they are interested only in the compulsory courses that will allow them to validate the module and they will not seek to go beyond what is requested by the professor. Given their young age, they have not yet acquired this awareness in relation to their academic developments.

Therefore, in the first year, the MOOCs/SPOCs must be integrated as mandatory and accredited courses, otherwise, the online course will always be perceived by students as a second category course, therefore, it would not achieve its objectives. In a second step, gradually from the third year of the "license cycle", the students will have grown and matured to understand the importance of self-learning and to seek information on MOOCs platforms beyond what is provided by the professor so as to enrich and develop their knowledge. This should also be enhanced by an official recognition granted by the university through the system of credits, certificates or micro-credentials allowing the validation of new skills. All these measures would be perceived positively by the learner who will be able to rethink his university experience and be eager to explore knowledge beyond the offer of his formal education. In this way, he becomes interested in learning in order to further improve his skills/competencies and then transfer them to his future career.

The integration of MOOCs and SPOCs has already proved its worth in the academic world [5, 11]. We cite in our context the example of our SPOC ITS course that was conducted in real-world with students enrolled in the FSR. The SPOC was

scheduled for three sessions (2017/2018/2019), which brought our students closer together to better understand their relationship with the online course in general and with the SPOC in particular. The results obtained have revealed that the SPOC has positively influenced the motivation to learn, the engagement and the flow of students which has resulted in a better academic performance [13, 10].

## 4 Discussion and Conclusion

It is obvious that the Moroccan higher education has certainly succeeded in charting the path of the digital transition in the educational scene. This has been possible thanks to the adoption of decrees and legal texts underlining the importance of distance education as a complement to face-to-face teaching. These decisions have been structured and framed by a list of measures related to the structure and the organization of distance learning. The current new policy converges on the same strategy that paints a picture of a modern university where MOOCs and SPOCs will be part of the university of tomorrow. Note also that international cooperations, meetings and scientific events (symposiums, seminars, conferences, etc.) are actions that have made it possible to enhance the digital transformation and to bring together all efforts of stakeholders so that the digital technology is finally a lever for the development of higher education and the modernization of universities. However, there is still much to be done. What is currently missing is that this transformation reaches our classrooms so that it becomes part of our pedagogical practices in a spontaneous and obvious way. This would be possible if it is carried out in a top-down approach where each actor ensures its role in the success of this implementation.

Therefore, based on our experience, we are making the following recommendations: the first action *sine qua non* to the deployment of the digital transformation in the education sector is the investment in the IT infrastructure by devoting a budget dedicated to the implementation of the digital transformation, this will be achieved through access to facilities and the Internet within institutions for all students. Secondly, programming MOOCs/SPOCS training should be designed in such a way as to respond to the specific problems of the Moroccan students. This should be done in a student-centered approach aiming to support students in their learning and academic achievement. Third, the promotion of MOOCs should be conducted by supportive policies, through their institutional integration in the accredited programs. This would ensure credibility and follow-up by students and provide opportunities for sustainable models of lifelong learning. Fourthly, MOOCs should firstly be in a hybrid form in order to keep that physical contact with learners to gently get them to accept and appropriate the digital in their learn-

ing. For their part, teachers will need to be trained on digital tools and introduced to take advantage of the benefits digital brings in their teaching practices. The motivation of teachers must go through the recognition and appreciation of their work by the hierarchy, the integration of online course design as a means of promotion and advancement. In addition, national strategies must be conducted to encourage them to change their teaching practices so that they are more socio-constructivist and supported by ICT as a communicational, educational and learning tools.

Finally, while considering national guidelines on distance learning, MOOCs have the merit of being integrated into teaching-learning practices. It is time to carry out a major transformation of MHE, both nationally and internationally. MOOCs have the potential to strengthen face-to-face learning for students and make knowledge more accessible for lifelong learning. This spirit of sharing should cross borders to collaborate with other universities all over the world (e.g. integration with EduGAIN [9]). We can imagine an inter-African network allowing a student enrolled at the University of Moundou in Chad to follow a MOOC designed by a team from Mohammed V University in Rabat and *vice versa*. But the success of the digital transition can only be achieved through a real willingness to share and through efforts led in a collective synergy with the main objective of moving forward together.

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