Article

The Challenge of Teaching Mobile Journalism through MOOCs: A Case Study

Laura Cervi * , José Manuel Pérez Tornero and Santiago Tejedor

Department of Journalism and Communications Studies, Autonomous University of Barcelona, 08193 Bellaterra, Spain; josepmanuel.perez@uab.cat (J.M.P.T.); santiago.tejedor@uab.cat (S.T.)

* Correspondence: laura.cervi@uab.cat; Tel.: +34-93-581-4473

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Abstract: Smartphones have become a key social tool: They have changed the way people consume, receive and produce information, providing potentially anyone with the opportunity to create and share content through a variety of platforms. The use of smartphones for gathering, producing, editing and disseminating news gave birth to a new journalistic practice, mobile journalism. Incorporating mobile journalism is, thus, the current challenge for journalism educators. Our article aims at discovering whether new models of education, such as massive online courses, can help mobile journalism training. The research focuses on the first pilot project of a massive open online courses (MOOC) on mobile journalism, the Y-NEX MOOC. By assessing structure, functioning and participants' opinion, the objective is to discover if MOOCs prove to be useful tools in mobile journalism training. Results show that this model of distance open learning can be helpful for mobile journalism training, providing some recommendations for improvement.

Keywords: MOOC; mobile journalism; MoJo; education; training; information and communication technologies

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1. Introduction

Every great technological invention has led to a change in the communicative paradigm, but few moments in the history of humanity have been so revolutionary, in terms of consumption and distribution of information: nowadays we live and interact in a digitally enriched environment, in a kind of digital bubble [1].

The commercial birth of touchscreen-enabled mobile devices, offered with flat-rate subscriptions for mobile internet [2] (p. 7), transformed smartphones into a key social tool, a crucial part of people's everyday lives [3] (p. 22), changing the way they live, and how they receive and produce information.

As Mark Briggs effectively explains, mobile devices have become like "electronic Swiss Army knives, arming anyone and potentially everyone with all-in-one media tools that can view, capture and publish or broadcast" [4] (p. 137). On the one hand, the number of people with mobile phone-equipped cameras dwarfs the number of journalists around the world, therefore a huge transformation in news production hierarchies is taking place [5] (p. 966) and the norms of journalism are being redefined [6] (p. 11). On the other, most media are embracing mobile journalism, considering it "a groundbreaking way of doing journalism" [7] (p. 2).

The literature focusing on new newsroom models [8–10] stresses the importance of this new technological dimension of journalism, and how going mobile significantly boosts newsgathering potential [11] (p. 9).

Information and Communication technologies also inevitably changed the education landscape, creating, for the first time, spaces of knowledge beyond the walls of the classroom, enhancing ubiquitous learning [12] (p. 71) and providing an enormous range of opportunities for innovation.

One of the most revolutionary aspects of this technological shift is the appearance of massive open online courses (MOOCs), aimed at unlimited participation and open access via the web (Daniel, 2012), first introduced in 2006 and popularized in 2012.

Our article focuses on the first MOOC on mobile journalism, the Y-NEX MOOC held from 23 January 2017 until 11 June 2017. By analyzing the first MOOC on mobile journalism, we aim at discovering whether MOOCs can be successfully applied to mobile journalism training, taking into account Romero-Rodríguez, Ramírez-Montoya, and Valenzuela González' suggestions regarding the urge of finding a sustainable and durable model [13].

2. Theoretical Background

2.1. Defining Mobile Journalism

Journalism has always been influenced, constrained and structured by technology [14] (p. 54), and the relationship between technology and journalism has been analyzed by many authors [15–19]; nonetheless, there is still a certain debate and disagreement about the definition of what mobile journalism is.

We divided scholars among those who emphasize the journalistic values, defining them professional journalism-oriented, those focused on technology itself as technology-oriented, and the ones that see mobile journalism as the beginning of a "new era in newsgathering" [20] (p. 213), those we named holistic-oriented.

The professional journalism-oriented believe that "mobile journalism is a ridiculous title, like camera journalism", since it is journalism, so it is ridiculous to define a genre based on its workflow [21] (p. 1).

Many media professionals, instead, seem to be technology-oriented, viewing mobile journalism (MoJo) as a process of shooting, editing, writing and publishing video stories using a smartphone [22] (p. 56).

This approach, focusing on technology, hinges on mobile gathering and on simple platform production (the recording, editing and disseminating content using one single device), underlying the rapidity that this process entails and its capacity of immediate sharing through social media.

Mark Briggs, for this reason, sees mobile journalism as the perfect complement for breaking news [4] (p. 97).

The holistic-oriented scholars, on their side, often label the previous perspective as the "purist view", since they believe mobile journalism goes far behind, being "about empowering the individual storyteller to use whatever consumer technology they have available to them to make the best possible visual story that they can" (Glen Mulcahy, founder of the MoJoCon, mobile journalism conference, quoted by Burum and Quinn) [23] (p. 2).

According to this vision, Burum and Quinn define MoJo as a combination of digital storytelling skills and tools used to capture and "transform raw user-generated content into complete user-generated stories" [23] (p. 2). Thus, mobile journalism is conceived as a sort of holistic approach that, combining journalism, videography, photography, writing, editing and publishing, offers endless possibilities to create content across a range of genres, formats and platforms, creating new digital communities where user-generated content is created and new ways of storytelling are shaped (2016: 63).

That being so, in the current media environment, journalists should develop essential skills and abilities to properly use technology and face the challenges it brings. Specifically, journalists need mobile phones and other gadgets, but more important, they need what Stephen Quinn calls a "multimedia mindset" (2009: 67), which is only achievable through proper training, teaching them how to optimize the use of technology, but also how to do good journalism with it.

In fact, as stressed by López-García et al., according to journalists themselves, the technological dimension is not considered "so much a question of knowing this or that tool, but understanding the

rationale" [24] (p. 87), meaning journalists prioritize knowledge and the dialogue with interdisciplinary teams rather than simple skills acquisition.

2.2. Mobile Journalism Education and Training

Wenger et al. found that, in 2010, references to mobile skills were mentioned in just a little more than 2% of television job postings in the US; by the end of 2012, mobile was mentioned in more than 27% of all TV and newspaper job listings, and this trend is growing year by year [25] (pp. 133–138).

Notwithstanding, a sort of "two-speed" scenario [26] can still be appreciated: While young journalism students know how to use their mobile phones for information-gathering and news consumption, they don't have the advanced skill set for doing MoJo, that employers demand [25] (p. 140).

The challenge for communication and journalism educators is, thus, to incorporate mobile journalism in their curricula.

Overview of Existing Experiences

Due to the relative newness novelty factor of the topic, there is no comprehensive and exhaustive research on MoJo training practices around the globe.

Kovačević and Persin [27], focusing on European higher education, determined that MoJo is almost never a subject of study in itself; Becker, Vlad and Desnoes [28], examining journalism and communication programs in the U.S., calculated that only one in four journalism and mass communication programmes is teaching students how to create content for mobile devices; author (2017) findings about journalism curricula in the best-ranked universities of the world portray a similar picture.

Moreover, when MoJo training is implemented in universities, it appears to be often organized as a workshop in cooperation with trainers from media organizations, and tends to focus only on the mobile side, that is to say on the technological aspect of mobile journalism.

The cases of media organization providing in-house trainings for their staff seem more frequent: also, in this case the training appears strictly based on the technological and practical side of doing MoJo [27].

In addition, sometimes media organizations produce and disseminate some kind of MoJo tutorials for their contributors, within their user generated content platforms, and, again, they mainly deal with the technicalities of how to properly use the devices [29].

Finally, currently there's a growing interest on behalf of civil society and associations to develop MoJo courses, mainly as a tool for citizens' empowerment, but, once again, even if studies are even scarcer, they seem to suggest the same technical focus [30,31].

In other words, according to the current researches, apparently there is no curriculum dedicated exclusively to mobile journalism training that covers both the technical and the journalistic aspects, together with a discussion about the wider implications that mobile journalism may have on journalistic practices and on society.

3. Y-NEX MOOC

The piloting edition of the Y-NEX was held from 23 January 2017, until 11 June 2017, on Eliademy, a free platform. The MOOC is still open for self-paced learning.

The main goal was to train at least 150 young people in mobile journalism, understanding it as a tool for "people to become more digitally literate and powerful across a wide range of media" [23] (p. 11), ergo a way to enable them to be both more active in society, and more employable.

The curriculum was conceived following the above-mentioned holistic approach to MoJo. The course has been divided in 7 parts: one introduction and six modules.

Module 1, "Media Literacy and Human Rights", is dedicated to contextualize mobile journalism in society and the role it plays in empowering people.

Module 2, "Mobile Journalism Technology", provides the necessary technical skills to use different devices and platforms.

Module 3, "Mobile Journalism Storytelling", focuses on experimenting with different possibilities of expression that this new form of journalism offers.

Module 4, "Mobile Journalism Production", gives students the chance to produce content using their smartphones.

Module 5, "Copyright and Ethics", aims to raise awareness of the ethical and legal implications (mainly regarding copyright and privacy protection) that the immediacy of mobile journalism implies.

Module 6, "Digital Entrepreneurship", sets its bases on the assumption that new technologies may help creating new, usually more flexible, forms of labour relations, and provide the necessary skills to manage autonomous work.

Each unit is offered in English and, where applicable, in the native language of the project partner developing it.

During the pilot phase, the MOOC was a timed learning programme, in which each module ran for four weeks, with weekly lessons posted on the platform, allowing the learners flexibility in accessing the course materials and submitting the assignments at their own pace.

Each lesson, or unit, contains video lessons, links to online learning resources and practical assignments, for evaluation of the learning outcomes (composed by of 13 hands-on tasks and 4 quizzes).

Video lessons, composed of a mix of recordings of expert lectures, interactive webinars, short films and video tutorials, comprise a total 98 videos hosted on Y-NEX's YouTube account and on Vimeo or other platforms. Video duration ranges from less than half a minute to over 21 min, being on average 5:11 min long. Besides, learners are supported in the process through an interactive forum dedicated to the unit and through e-mail correspondence with tutors.

During the pilot, each module was assessed individually, so participants who successfully completed one module received a badge via the Y-NEX's own Open Badges provider instance.

On the other side, participants who successfully completed all six modules, as well as the final comprehensive assessment, received a certificate of completion of the MOOC from the Y-NEX Consortium.

4. Materials and Methods

In this article, we will analyze the Y-NEX MOOC to evaluate this pilot experience with the aim of understanding whether MOOCs can prove to be a successful tool for mobile journalism training.

Research and evaluation of open online courses always present significant methodological and interpretive challenges, mainly regarding the treatment of qualitative and quantitative data from disparate sources, and the selection of the criteria to determine the course's success [32].

As Reich states, "the story of MOOCs is not going to be told with conventional statistics borrowed from brick-and-mortar classroom models" [33] (p. 35). MOOCs, in fact, emerge as learning ecosystem where enrollment can be casual and nonbinding, learning happens asynchronously, and registrants may come from all over the world, with diverse intentions and patterns of learning, so the metrics have to be different.

Following Maartje et al. [34], and Romero-Rodríguez et al. [35], we acknowledge that the primary instrument for evaluation is a proper triangulation of data between original goals, log-file analysis and on line surveys.

In our study, we examined the data collected during the MOOC, both from the analytical services in the platform itself and the content services (Eliademy and YouTube) and the ones collected during the final survey.

Most research insists on metrics that takes initial student intentions and educational backgrounds into account [35–37]. In this case, the profile template of Eliademy platform did not allow identification of the participants in detail, so we broadened these data using the data collected through the post-evaluation survey.

The survey, held at the end of the MOOC, on 2 June 2017, and hosted on Survey Monkey, consisted of 332 data entry points, with an average duration for completion of 22 min and 56 s. As Appendix A shows, it was divided in three sections. The first one was aimed at retrieving personal information (country of origin, occupation, education level, motivation and previous knowledge, etc.), to complement the data from the platform. The second part was dedicated to the quantitative analysis of users' effort (in terms of hours dedicated), and to the qualitative assessment (through an open question) of drop out. The last part made of a series of statements regarding participants' satisfaction, level of understanding, perception of difficulty, etc. both for the entire MOOC and module by module. Students indicated how much they agreed with the statements using a classical five-point Likert scale.

In addition, open questions about what they liked the most and the least, together with a space for suggestions were added. This section was analyzed qualitatively.

By adapting the criteria proposed by Cross [38] and complementing them with the ones proposed by Ho et al. [36] and Yousef et al. [39], we created a framework for interpretation that takes into account: (1) learners' numbers, profile and motivation; (2) learners' compliance with the design (drop-out, course completion and participation rates); and (3) achievement of the MOOC's expected goals.

Finally, we proved our measurement against established criteria, that is to say we observed our MOOC performance against quantitative measures describing learners' experience and satisfaction in other courses and in existing specialized literature.

5. Results

5.1. Numbers and Participants Profile

The total number of enrolments was 472 over the whole period, but during the course of the MOOC, some participants unenrolled, and a number of double or fake enrolments was detected and consequently deleted, resulting in a total participation of 452.

Most of the participants came from Croatia, followed by Ireland, Spain and Belgium (that is to say from the same countries of the organising institutions), but also from Nigeria, Turkey, Egypt, Bangladesh and Finland. These results are fully understandable through the survey: when asked about where they heard about the MOOC, respondents said that word of mouth and social media played an important role, while the platform itself (Eliademy) attracted only a limited number of participants.

As for their occupation, the aggregated data shown in Figure 1, show a majority of students and teachers, followed by other media or communication related professions (including designers, sound engineers, communication officers, etc.) and other education related professions (youth workers, non-formal education instructor, etc.).
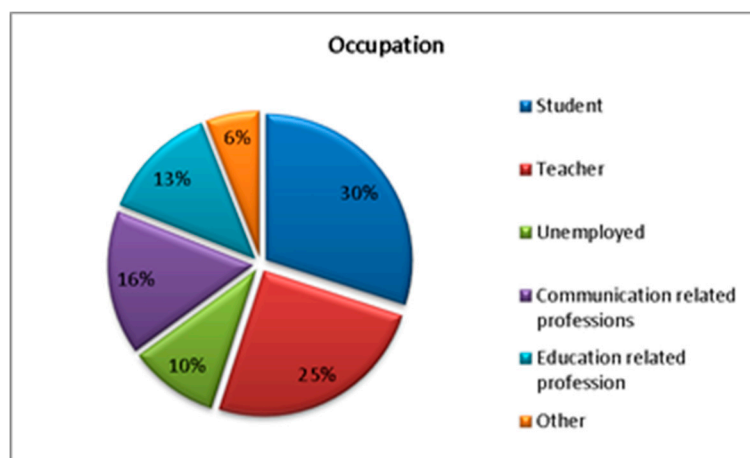

Figure 1. Participants' occupation. Source: Elaborated by the authors.

As for their education level, it was impressively high: 72% of the enrolled students declared having a Bachelor's or a Master's degree, 12% some kind of post-Secondary education, and 16% Secondary education. None declared a basic education level. Considering that 30% of the participants were students, it is possible to presume that all the audience had a high education level.

This result confirms what has already been proven in existing literature: MOOCs appear to be more popular among highly-educated people [40,41].

Figure 2 indicates their motivation: besides the minority that enrolled for fun or for acquiring general mobile production skills, most of the participants were interested in the journalistic side of MoJo.
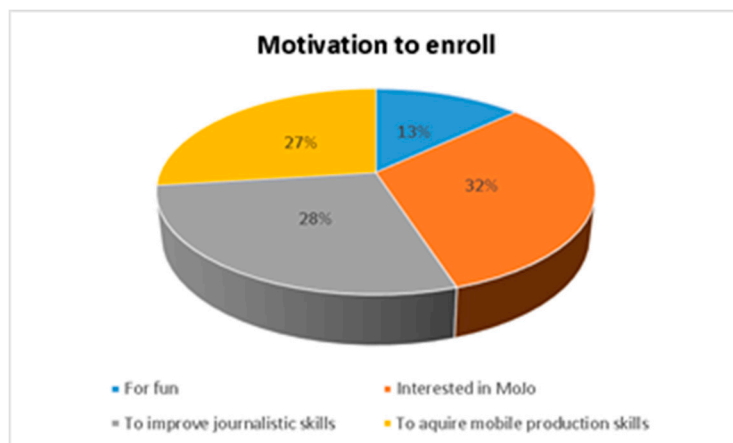

Figure 2. Motivation to enroll. Source: Elaborated by the authors.

Finally, we asked the respondents about their previous knowledge about mobile journalism. As shown in Figure 3, a great majority of them declared having a basic, little or even no knowledge at all about Mojo: Only 3% assessed their knowledge as advanced. This is an expected result considering the novelty factor of the topic.
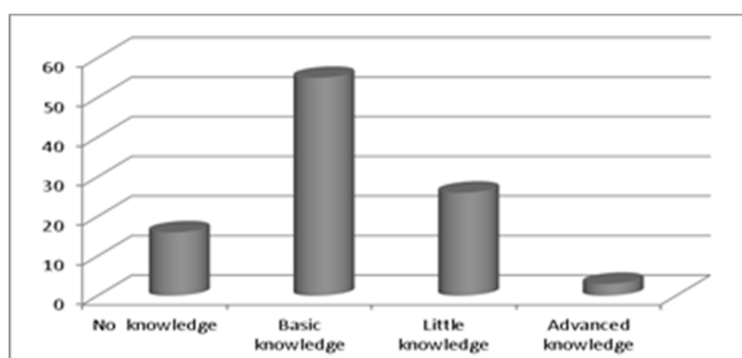

Figure 3. Previous mobile journalism (MoJo) knowledge. Source: Elaborated by the authors.

5.2. Enrollment, Course Completion and Participation

The final completion rate, or certification rate, measured as the number of participants that have taken all modules, completed all the assignments and reached the end of the course, as Figure 4 indicates, was 3%. Compared to MOOCs' general certification rates, that is within rates observed for a MOOC of this length (20+ weeks) [42].
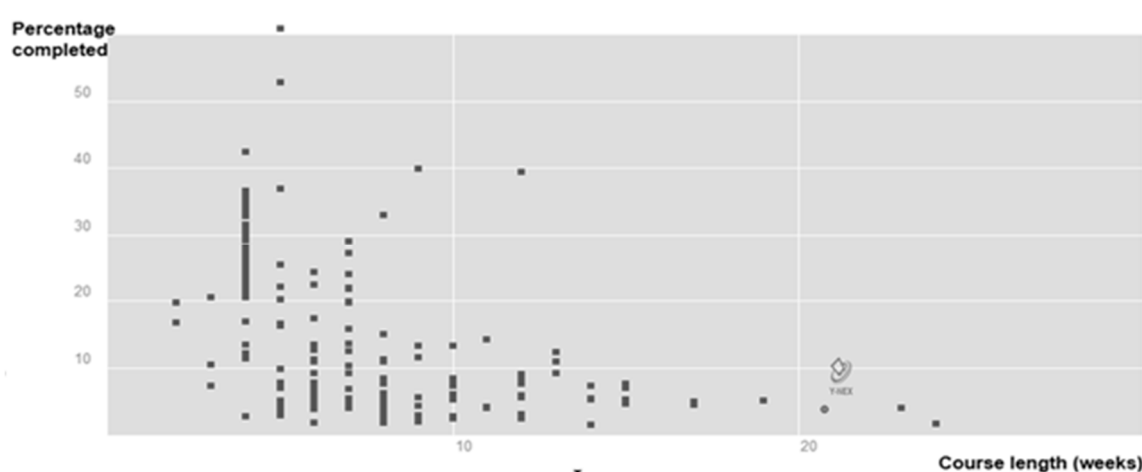
Figure 4. Completion rate over duration (after Jordan, 2015). Source: Elaborated by the authors.

This rate typically ranges from 2 to 10 percent, being naïve certification rate of 245K certificates/4449K participants, or 5.5% [33] (p. 88).

However, many authors [33] argue that this way of calculating MOOCs completion rate is misleading, because it does not take into account student intentions, such as the fact that, for instance, many students have no intention at all of completing the courses, others only sign up out of curiosity, etc.

Nevertheless, if we compare Y-NEX MOOC's percentage of completion to Katy Jordan's [42] module completion assessment, considering the duration and degree of hands on involvement, it scores quite positively.

The most important moments of participant attrition in the MOOC were after week 3 (end of Module 1) and after week 5 (first practical assignment). This data may suggest that participants did not feel comfortable with the assignments.

Participation was measured matching available user statistics on Eliademy (data about enrollment and activity on the MOOC platform, return of assignments and tasks during the MOOC and participation in discussion forums), with viewing statistics on YouTube. The total number of interactions on the MOOC (all activities including reading a text, watching a video, submitting a task, etc.) was 13,249.

This theoretically means that, on average, every participant interacted 29 times. This figure, of course, does not represent a true picture, as not all participants were equally active during the whole period. Considering the real active participation, that is to say the time spent on the MOOC as a whole reported by the survey respondents (average 158 min, with a standard deviation of 104), we got an average time of about 23 min per learning activity.

Applying the new model for measuring MOOCs proposed by Hadi and Gagent [43], based on participation without completion of all assignments and/or modules, the MOOC degree of activity (around 10%) compares to what we see in MOOCs in general, as displayed by Table 1.

Table 1. Comparison between massive open online course (MOOC) platforms.

	Y-NEX	edX (Average)	Coursera (Average)	Various (Average)
Completion rate (Enrolled)	3%	5%	3%	6.5%
Completion rate (Active)	10%	8%	5%	10%

Note. Elaborated by the authors, based on Hadi and Gagent [43].

As for the reason not to complete all modules, none of the drop out participants complained about the quality or other issues of the MOOC; rather, the element of time availability clearly emerged as the major issue. 50% of the respondents, in fact, declared that the lack of time was the main reason to leave the course.

5.3. Participant Evaluation

The survey was completed by 31 participants, that is to say, 7% of all participants.

In general, participants' satisfaction was quite high: focusing on the last four questions represented in Figure 5, most of the respondents agreed or strongly agreed that they acquired new skills and they will be able to implement them in the future.
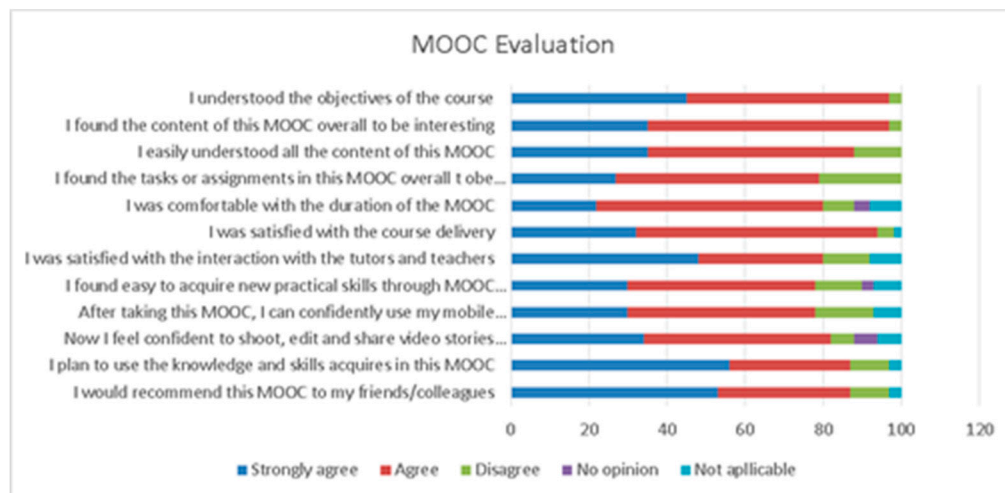

Figure 5. Participants' satisfaction. Source: Elaborated by the authors.

That suggests that the course' main objective was fulfilled.

5.4. Results Per Module

The respondents were asked to rate their general feelings and impressions about each module. The overall quality of the different modules was evaluated quite high (overall scores were good to very good with very limited numbers of negative comments or scores).

Figure 6 represents a comparative overview about of participants' perception of their level of learning in each module.
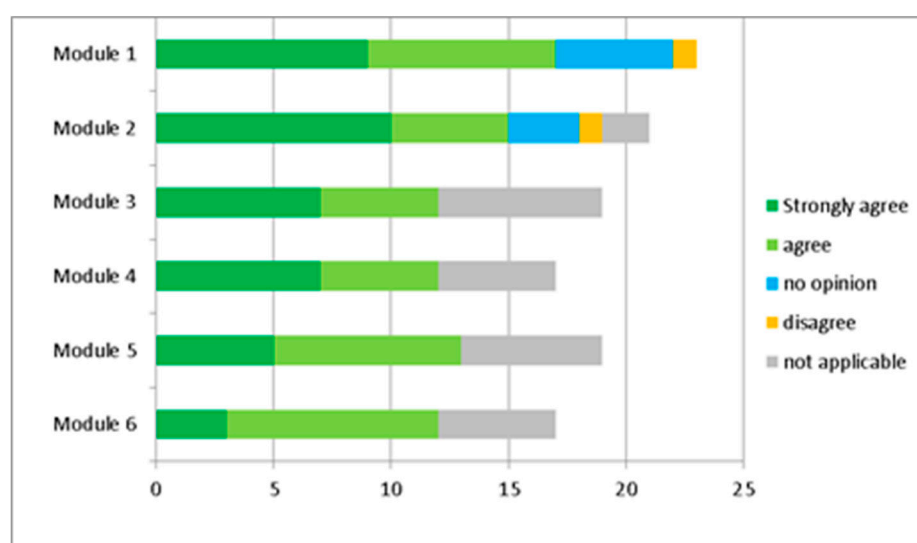

Figure 6. Participants' level of agreement to the statement "I learnt a lot in this module". Source: Elaborated by the authors.

It is interesting to observe, within the general positive scores, that the module that gathered the most "Strongly agree" options is the one about technology. This result is quite predictable because technology is the most innovative, intriguing and challenging side of MoJo. Nonetheless, if we look at the total amount of "strongly agree" and "agree" responses, Module 1 (the Media Literacy module) scores the highest.

Statistically, more participants completed Module 1, so their opinions undoubtedly weighted more. Nevertheless, by looking at the qualitative data, more than one respondent stated that he/she never thought of MoJo as a tool for media literacy and he/she is glad to have discovered it.

That allow us to hypothesize that contextualizing MoJo within media literacy is not only helpful—and needed—in terms of learning, it is also a way to make it more attractive to a larger audience.

5.5. Qualitative Assessment

In this section of the survey, consisting of open questions, students were asked what they liked the most and the least about the MOOC and to give suggestions for improvement.

As for the first question, feedback was as diverse as the audience, but different answers mentioned the importance of practical tasks, applicable to real life.

"Good content, delivery and interactions of all teachers throughout the period of training.

I liked the "immersiveness" in the tasks which needed to be completed.

Interesting examples from journalists' everyday life, really detailed feedback for some tasks, flexible deadlines

Real life situation.

It taught me about this new perspective of pursuing people and their story from mobile point of view. Now I can easily distinguish relevant from less important and I know how to present information to the public the right way that is objective as much as possible, informative, balanced and truthful.

As far as I noticed, it was really professional. I liked the forums and conversations between participants and mentors.

The tasks were interesting.

The practical assignments were more than useful. They were very educational.

I'd say discussions we had through forum really helped me to see bigger picture of mobile journalism as well as of professional ethics, so I think those forums were useful. Also, I liked all of practical tasks and I wished there was more of them because they push you to go outside, to talk to variety of people and ask them about their story, and that's really important to know as journalist. I think using videos as the main platform to educate is genius because through interactive maps and video element, it made the course more interesting and fun."

The negative points were mainly related to the lack of time (from a learner's point of view), the quality of some tutors' feedback, and the quality of some activities or content. Some of these points seem to contradict the positive assessment of the MOOC in general, which, once again, reflect the diversity of learners and expectations.

"I wish there was more practical tasks because I really enjoyed them.

It took some time for tutors to grade the tasks.

My lack of time.

Not enough time.

I'm really sorry I couldn't follow the course because of my professional obligations.

Some of the documentation was too obvious, but certainly I understand that the purpose was to reach all audiences.

Sometimes the feedback on the assignments was late, but I also appreciate the big number of participants' assignments that needed to be corrected.

The duration of MOOC, I feel like it could've been done in a shorter amount of time.

Unfortunately, I didn't have enough time to follow it due to my professional career."

The suggestions for improvements are very heterogeneous as can be expected in an open format such as MOOCs, however a number of useful suggestions regarding methodology were made: the inclusion of webinars or live online communication, more cooperative tasks and use of social networks.

"Maybe something about getting the participants to cooperate on some tasks or something like that, and the instructors were great, I actually regret that I can't listen to some of them lecture.

Maybe less texts on videos and talking slow and clear English. Just a suggestion!

Maybe provide more insight in how you grade assignments.

More examples to catch their interest and show them the benefits of MOOC.

The only suggestion I can give is to work on the combination of all course content into one PDF format for accessibility and convergence.

Using Slido or similar site or make a Facebook group.

More videoconferences, maybe.

You can maybe organize webinars or live chats or something like this. It should encourage participants to discuss more topics and ask questions.

Maybe FaceTime communicating possibility.

A web conference?"

6. Discussion and Conclusions

To answer our research question, the assessment of this pilot project seems to prove the positive potential of this type of remote open and online learning for journalistic training.

Even if research has proven that less educated people from low-income background have less access to MOOCs on average [41], having the chance to receive a journalistic training without the need to meet the instructors provides the opportunity for all citizens, journalist and non-journalist, to get training, even when they cannot afford it or it's not offered in their geographical area.

In addition, recognizing that, by curriculum development standards, mobile innovation is happening so fast that often "it's difficult for journalism educators to get a handle on exactly what mobile skills their students will need to get jobs" [25] (p. 139), higher (and also primary) education institutions, lacking skills or resources, may use MOOC as an effective and sustainable alternative.

Moreover, our analysis allows for addressing both successful aspects that may be implemented in other experiences and suggestions for future improvements.

The first positive observation is based on the good evaluation of every module. This proves that the holistic approach, which goes behind mere technology, is the pattern approach to follow.

Nonetheless, the predominant factor of low retention in this MOOC seems to have been the lack of time. This is common to almost every MOOC [44] and the possible solution could be, on the one hand, to shorten the total length of the course, and on the other to simplify and make tasks easier to develop.

This type of learning has a greater potential to foster much higher degree of interactivity with learning objects, peers and tutors, so in order to really boost this participative potential, more peer to peer coordinate work should be included, fostering auto-creation [13] and collaboration through the use of social networks.

Although this is true for almost every MOOC [45], journalism is a field in continuous evolution, exactly as technology, so, fostering peer-to-peer cooperation would not only benefit student engagement, it would also strengthen creativity and increase the quality of the learning experience as a whole.

Another important aspect is data collection. Since a MOOC, by its own definition, is open to a wide range of people, it is crucial to collect as much detailed information about participants as possible, in terms of demographics, previous knowledge and motivation, in order to offer a more personalized training.

This is specifically useful when dealing with MoJo, since digital natives, for instance, may have some kind of interiorized technological skills but may lack theoretical background or contextualization, and/or experienced journalists may experience some form of reticence in the use of technology, which should be tackled in a different way.

Therefore, it would be useful to create self-sustainable modules that could provide a tailor-made training for specific needs, as explored by Massachusset Institute of Technology [46]. In this way, users would enroll and get exactly what they need or interest them.

This formula could also be useful for associations, high schools, universities or professional organizations that may integrate one or more specific parts of a MOOC as a complement within their learning path.

The last crucial issue is credentialing. When a course grants a credential, for instance in the form of a certificate, it allows learners to demonstrate (mainly to current or future employers), that they have attained certain level of competence in specific skill areas.

Badges are a useful alternative, but it would be seminal to create both synergies with the professional sector, to guarantee the recognition of these credentials, and with universities, in order to transform credentials into credits student may use in their formal education career.

In conclusion, as previously stated, our work is based on a specific case study, which makes our suggestion interesting for both practitioners and researchers, with the limitation of not offering generalizable results. Nowadays more MOOCs on the same topic have been developed so, for future research, it would be interesting to compare different cases and methodologies.

Appendix A

PARTICIPANT SURVEY INSTRUMENT.

Appendix A.1 SURVEY POPULATION

1.   Country of origin
2.   Education level

3. Occupation
4. How did you hear about this MOOC?
5. Prior knowledge
6. Motivation
7. Number of modules completed
8. Reasons to stop MOOC participation

Appendix A.2 PARTICIPANT OPINION

1. The respondents were asked to rate their general feelings and impressions about the MOOC:

1. I understood the objectives of the course.
2. I find the content of this MOOC overall to be interesting.
3. I easily understood all the content of this MOOC.
4. I find the tasks or assignments in this MOOC overall to be interesting and stimulating.
5. I was comfortable with the duration of the MOOC.
6. I was satisfied with the course delivery.
7. I felt free to ask questions throughout this course.
8. I was satisfied with the interaction with the tutors and teachers.
9. I find it easy to acquire new practical skills through MOOC learning.
10. After taking this MOOC, I can confidently use my mobile journalism knowledge and skills.
11. Now I feel confident to shoot, edit and share video stories using only my smartphone.
12. I plan to use the knowledge and skills acquired in this MOOC.
13. I would recommend this MOOC to my friends/colleagues.

The Respondents could answer according to a 5-point Likert Scale:

- Strongly agree
- Agree
- No opinion
- Disagree
- Strongly disagree
- Not applicable

2. Required effort and average time spent

(a) Effort required

    1. Too little
    2. Just right
    3. Too much

(b) Time range

    1. Too little
    2. Just right
    3. Too much

(c) How much time did you spend to complete the activities?

The range of duration goes from (less than) one hour to 7 hours' workload per week.

N	31
Average	158 min
Standard deviation	104
Median	150 min
Mode	60 min

3. What did you like most about this MOOC?
(Open Question)
4. What did you like least about this MOOC?
(Open Question)
5. Suggestions for improvement.
(Open Question)

Appendix A.3 RESULTS PER MODULE (for each Module)

1.The respondents were asked to rate their general feelings and impressions about each module.

1.   The trainers of this module were responsive.
2.   I found the assignments useful and engaging.
3.   I found the multimedia materials useful for the course content.
4.   I learnt a lot in this module.
5.   I found this module easy to understand.

The respondents could answer according to a 5-point Likert Scale:

- Strongly Agree
- Agree
- No opinion
- Disagree
- Strongly Disagree
- Not applicable

2. Required effort and average time spent

(a)   Effort required

1.   Too little
2.   Just right
3.   Too much

(b)   Time range

1.   Too little
2.   Just right
3.   Too much

(c)   How much time did you spend to complete the activities?

N	31
Average	158 min
Standard deviation	104
Median	150 min
Mode	60 min

3. What did you like most about this module?
(Open Question)
4. What did you like least about this module?
(Open Question)

References

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