1-DAY MOOC ON MOBILE LEARNING: AN EXPERIENCE REPORT ON THE MODULE 'EDUCATIONAL CONTEXTS'

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ABSTRACT

Smartphones and tablets have become essential tools in users' daily life, as they include a whole range of digital services, enlarging the connection to the virtual world. Nonetheless, the use of these tools in the educational context, known as mobile learning, is still a recent and scarcely embraced practice. A 1-day MOOC (massive open online course) was devised to raise awareness of the potential of mobile devices in the teaching-learning process, aiming at increasing lower secondary education teachers´ adhesion to this approach. This article is intended to present the experience of creating the first out of four course modules/units. This module, entitled "Contexts", is focused on the change of paradigm in educational contexts due to the fact that mobile devices enable ubiquitous learning. The pedagogical strategies adopted in the development of the module, the technologies used to meet the needs and the purposes are described. Participants' comments on the debate activities were analysed and they reinforce the need to invest in infrastructures, to promote teachers' proactivity and to ensure preconditions for a success of the integration of mobile devices. Participants pointed out both teachers and schools as barriers to the introduction of mobile learning, highlighting teachers' lack of motivation and commitment as well as school infrastructure problems. Conclusions drawn from this experience point to an increasing interest in mobile learning and participants' awareness of both its advantages and the obstacles to implementing it.

KEYWORDS

Mobile Learning, MOOC, Educational Contexts

1. INTRODUCTION

The purpose of this paper is to provide a thorough description of the experience of developing a 1-day MOOC designed for teachers at lower secondary education (ISCED level 2). Usually MOOCs run for a few weeks, however a new format was tested, a combination of asynchronous and synchronous training, compressed in a short time period, to meet the requirements of a course of the Multimedia in Education PhD. Despite being considered by many education and training agents as a viable option, Balula (2015) remarks that there is still few research on the potential of MOOCs in terms of digital inclusion. Moreover, mobile learning is still disregarded by many education agents. Therefore, this 1-day MOOC was devised to shed some light on the purposes and benefits of mobile learning, methodologies supporting m-learning, strategies, practical applications, and show some real examples of implementation.

Bearing in mind the current scenario of use of communication technologies in the teaching-learning context and the main trends concerning the use of new devices and digital services, the theme chosen for this 1-day MOOC was "Mobile devices in the teaching-learning process". Notwithstanding the course was divided in 4 modules (Contexts, Tools and technologies, Interaction and Assessment) developed by different teams, this document only reports to the first one. The aim of this paper is to contribute to the promotion of m-learning practices and make schools and teachers aware of the need to overcome obstacles to the successful integration of mobile devices in the teaching-learning process.

2. CONTEXTUALISATION

The emergence of smartphones and tablets allowed a convenient expansion to the virtual world, as they are progressing towards ubiquitous access to a wide range of services (Leite, 2013). They are constantly being reinvented and reused in unexpected ways, regarding their size, forms of interaction, context and use, and many people argue that mobile applications should be thought as tools which enable people to enjoy intense and fulfilling experiences based on their needs (Cartman & Ting, 2008).

Several authors, namely Trindade & Moreira (2017), Moura (2016), Abreu & Cardoso (2016), are enthusiasts of the use of technology in educational context, claiming that traditional school should change in order to meet students' expectations, open the way for significant and contextualised learning, decentralising the teacher from the teaching-learning process, by including other sources of information provided by technological devices. According to Conole et al. (2008), the environment surrounding students can be a rich learning environment in which they can select and adjust the available technologies to their own personal needs.

It is also believed that the way students explore technology promotes the development of multitasking skills, memory, spatial orientation and communication (Redecker, 2008). Introducing technology in the teaching-learning process is still a recent idea, even though it is clear that globalisation and the evolution in the labour market require new skills, which require new contexts and learning strategies (Moura & Carvalho, 2010). It is important to stress that several tools may be used for technologically mediated learning, such as MOOC and mobile learning, which are the focus of this study. According to Baeta (2016), when planning a MOOC, strategies and work organisation should be explicit, as well as the way to interact, communicate and collaborate: individual work, collaborative, tutorial, under supervision and/or autonomous.

Considering that learning can occur in various places and as a result of information contact from different sources, Rogers (2004) supports the distinction between formal, non-formal and informal contexts, summarized by UNESCO in 2014 (as cited in Costa & Xavier, 2014). Alves (2013) stresses the difficulty to delimit these three contexts and their possible integrations. It is important to highlight several authors, such as Barron (2006) who do not agree with defining learning contexts only by the physical environments where they can occur based on the idea that informal learning can happen inside or outside the classroom. Costa & Xavier (2014) suggest defining educational contexts regarding two factors: physical environment and intentionality. Considering that mobile devices are ubiquitous, learning can occur anywhere and anytime, this paths the way for a new and unique educational context proposed by the authors, the "Mobile learning context" focused exclusively on the intentionality.

According to Costa & Xavier (2014), mobile learning allows the convergence of learning in different contexts, enabling new types of learning, derived from the usability aspects of mobile devices that allow a flow of micro-content, enabling continuous learning (Costa & Xavier, 2014, p.2). Corroborating this idea, UNESCO recognises that integrating mobile phones into the teaching-learning process could potentially break traditional pedagogical paradigms, and because of the usage of mobile technologies in education, the line between formal and informal learning is becoming invisible. Nevertheless, to integrate educational technologies in teaching practices, one needs to consider the context, the curriculum, content and collaboration, so that mobile devices contribute to multimodal, individual and collaborative knowledge between students and teachers (Moura, 2015).

Introducing new mobile technologies in education enables several paradigm changes (Berger & Muilenburg, 2013) such as: time flexibility; personalisation of teaching; increase of interaction and collaboration; possibility of a wide variety of pedagogical strategies and assessment methodologies.

Nowadays there are some projects promoting mobile learning in Portugal (Ferreira et al., 2015): *Tablets no Ensino e na Aprendizagem; A sala de aula Gulbenkian; Comunidades Escolares de Aprendizagem Gulbenkian XXI; Edulabs; Creative Classrooms Lab; ManEEle;* Meanwhile internationally some stand out: *eTwinning; Conexões literárias; Projeto Leituras d'Oriente e d'Ocidente; Projeto ERASMUS+: My city in QR codes.*

3. METHODOLOGY

Designing and implementing the 1-day MOOC initiative took place for three weeks, with tasks distributed for 4 teams, each one responsible for one module. The theme of the course was: "Mobile devices in the teaching-learning process" and the modules: 1- Contexts; 2- Tools and Technologies; 3-Interaction; 4- Assessment. Choosing the platform Sapo Campus was consensual, since it meets the requirements and logistic support was provided by its development team.

The event was advertised by Facebook and via email to Portuguese schools. Registrations were made by Google forms and handled through an email account created for this purpose. Then participants were invited to join the 1-day MOOC activity in Sapo Campus and to save the date of the synchronous session. On platform, the participants could find the 1-day MOOC scenario and two social spaces (Available: http://1daymooc.campus.sapo.pt/_)

The "Contexts" module was the first one, and it aimed to present a theoretical approach to educational contexts and strategies to implement mobile learning. The "Tools and technologies" module, the participants came in touch with some applications, as well as recommendations for the success of the activities. Afterwards, in the "Interaction" module the possibilities of communication and interaction between teacher-student, student-student, teacher-teacher were explored. Finally, the "Assessment" module was focused on trying applications that could be used for evaluation purposes and pedagogical activities. It is worth mentioning that module 1 was strategically planned with one asynchronous and another synchronous session, with the last one happening on the day of the course.

3.1 Module 1 - Asynchronous Session

To enable participants to prepare previously and visualise some examples of practical implementation of mobile learning, a set of training material was created. This followed a narrative including positive reinforcement prompts designed to draw participants' attention, and to provide a guided and motivating learning environment. The need to have an appealing and uniform graphic design was also taken into consideration. In order to create the didactic material, a literature review was carried out on educational contexts, the adoption of technologies in education, the increasing use of mobile devices and the potential of mobile learning. The objectives that directed the literature review were: to identify, present and discuss the theoretical approaches about educational contexts, clarify the aims, benefits and how mobile learning may be implemented, present recent data and examples of implementation of mobile learning.

The asynchronous documentation was made available in slides using Microsoft Office software PowerPoint, which is a format that lower secondary education teachers are quite familiar with. The material was divided into 3 parts, entitled: The basics of m-learning; M-learning nowadays; Practical applications.

The basics of m-learning covered were: Formal, non-formal and informal educational contexts; Statistics about the use of the internet and social media platforms in Portugal; Definition of mobile learning; Methodologies supporting the practice of mobile learning. The second part (M-learning nowadays) focused: Intentionality/purpose in the usage of mobile devices: Strategies to make use of mobile technologies in the teaching-learning process; Examples of transversality in learning contexts; Ways of introducing mobile devices in education. Finally, the third part addressed: The purposes and benefits of the use of mobile technologies in education; Dynamics and strategies of pedagogic implementation; Some real examples of m-learning.

Different resources were alternated in the didactic material: text, images, graphics, photos and videos, many of them from well-known researchers (Moura, 2014; Sabbag, 2017; Luna & Cabral, 2016). (Available: https://goo.gl/8TRtAv). Parts of television reports were selected, namely "Linha da frente - RTP, Made in Europa - Sic Notícias" and videos from Youtube (Sabbag, 2017; Moura, 2014), most of them spoken or subtitled in Portuguese. Language was a deliberate concern, since, according to Balula, language is nowadays a barrier to the participation in MOOCs due to the fact that most of them are conducted in English for non-native speakers (Balula, 2015). This researcher stresses out that when designing a MOOC it is important to bear in mind cultural issues in order to meet the trainees' expectations, so in module 1 there are examples of implementation of mobile learning in the European context.

This material was made available in the Sapo Campus platform 36 hours prior to the synchronous session. A task named "Previous reading" was created in the platform to recall participants of the need to read the material of module 1 in advance. It was also announced that a badge named "Contextualized: previous reading task done" would be granted to those who completed that task, embracing a gamification strategy.

3.2 Module 1 - Synchronous Session

The synchronous session took place on October 7th 2017. Participants were welcomed thirty minutes before the beginning of the session in the chat room. They were invited to introduce themselves in the informal areas (the bar and the gym), promoting interaction and leading them to explore the platform. Interaction between the team and the 1-day MOOC participants was conducted through a single profile, registered in the platform as "Contexts Trainer".

Then they were led to the 1st module, which took place from 10 to 11 am. The synchronous phase consisted of two activities, both introduced by a question and a video. The videos were selected and edited previously, summing up in a few seconds a critical view of the teachers about the use of technologies in education, so as to trigger the debate between participants. Therefore, a student-centred learning strategy was adopted through inquiry-based learning and problem-based learning pedagogies. The debate was planned so as to allow participants to freely express their opinion, as well as discuss with the purpose of answering the problem/question. Thirty minutes were assigned to each activity and meanwhile some more badges were created according to the interactions taking place and were granted to the participants who stood out.

4. RESULTS

The task named "previous reading" in the asynchronous session was completed by 66 participants. However, on the day of the MOOC event, only 52 participants were online (78%), and 47 chose to participate in the synchronous activity (71%). The synchronous session consisted of two debate activities. Two short videos proved to be powerful drivers for ideas exchanging and to share experiences, with about 200 interactions (comments and publications). It is important to emphasize that the foreseen timeframes for each activity (thirty minutes) were precisely followed by the authors, and the participants showed to be highly motivated so the activity continued in parallel through comments, sharing files and publications, simultaneously while the other modules were happening.

During the synchronous session, the authors had to simultaneously work on: starting and concluding the module 1 debate activities; creating and assigning the badges (some of them requested by participants themselves), responding to messages as well as supporting the remaining modules directing participants to follow the course sequence, managing technical issues and motivating the trainees in the chatroom.

4.1 Results of Activity 1

There were 41 participants in the activity, who created around 83 comments, with 81 of them expressing favourable opinions on the integration of mobile devices in schools (97%) and only 2 against (chart 1).

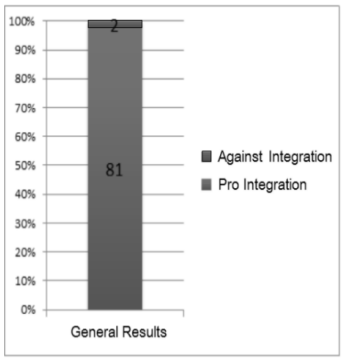

Chart 1. Data referring to activity 1
Source: The authors

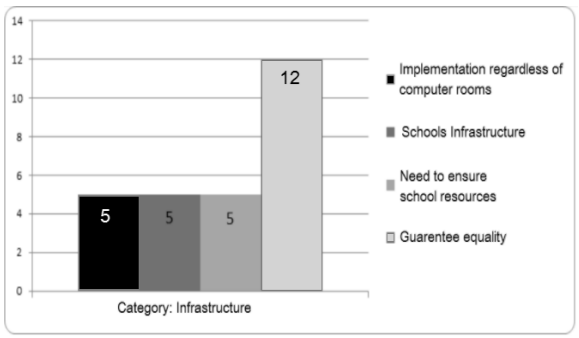

Chart 2. Data referring to 27 comments
Source: The authors

A detailed analysis of the comments enabled the team to address the topics in 3 categories (Infrastructure; Teacher's proactivity; Preconditions for a successful integration). It is important to remark that each comment may address more than one subject, so the sum of the categorized comments adds up to over 83.

Based on the 27 comments that addressed the theme *infrastructure*, it can be said that the main concern of the trainees is guaranteeing equality of resources for the students, that is, in order to be successful in the integration of mobile devices in school activities, students must have the same conditions with regard to the acquisition, capacity and functionality of their devices. The general infrastructure of the school and previous preparation to host activities with mobile devices was also considered relevant, as can be seen in chart 2.

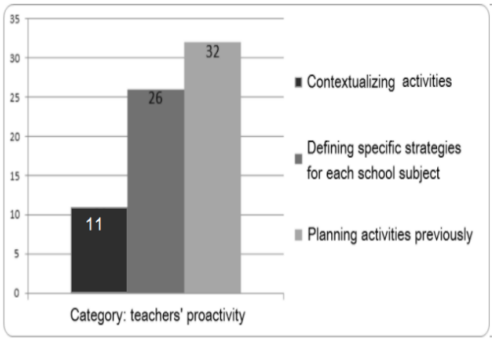

Chart 3. Data referring to 69 comments
Source: The authors

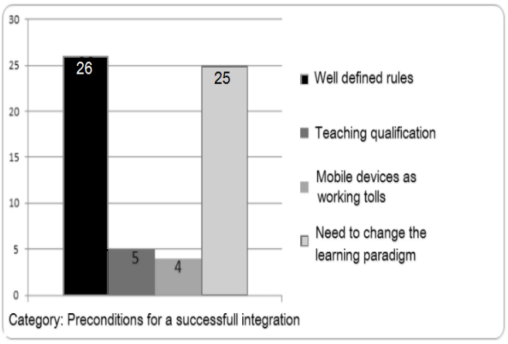

Chart 4. Data referring to comments on preconditions
Source: The authors

Regarding the comments on teachers' proactivity, there are 69 considerations, which are classified in chart 3. It should be noted that these comments demonstrate participants' maturity and sense of responsibility regarding their own limitations and obligations, giving greater emphasis to the subject addressed: "Planning activities". Participants also reveal a clear perception of the need to define different strategies for each school subject, as well as understanding that the same technology can be useful for various contents, but not necessarily in the same way or in the same format. They emphasise the importance of teachers' creativity to choose the most appropriate methodology when adopting mobile technology in school activities. Last but not least, participants understand the need to propose contextualised activities so as to achieve meaningful learnings. It is worth quoting a participant's comment that synthesises this: "There should be a specific objective, a well-defined task, a time, an expected result, and appreciation of students' creativity".

Regarding preconditions for successfully integrating mobile devices in the classroom practices, 60 comments highlight the aspects represented in chart 4. Analysing the 4 items addressed in the comments, the need for well-defined rules and for change in schools' learning paradigm is clear. There is coherence in the comments, given that the preconditions mentioned above have close links with the conditions that would impel teachers' proactivity, such as: "Planning activities" and "Defining specific strategies for each school subject". There are 9 comments reporting positive experiences or attempts to integrate mobile devices in the learning process.

It is worth mentioning two comments describing students' interest in using the mobile phone as being solely for recreational games or applications and not for learning activities, thus stressing that students lack focus in activities related to learning. Therefore, the role of the teacher as a mediator of the learning process using mobile technologies seems to be fundamental. Not all activities of a curricular area need to be bound to technology, but they should be reconsidered so that mobile devices are integrated in a strategic way. Lastly, it is important to stress that setting clear objectives and a limited time for each activity can largely contribute to students' concentration.

4.2 Results of Activity 2

In the second activity there were 43 participants, who produced 83 comments that can also be grouped in similar subjects. From this analysis it can be seen that they highlight the barriers arising from teachers' attitudes, and 72 comments are related to the barriers stemming from school, as shown in chart 5.

Comments regarding the obstacles created by teachers are illustrated in chart 6 and they can be categorized in terms of: Lack of Training, Lack of Motivation; Self-indulgence/lack of commitment.

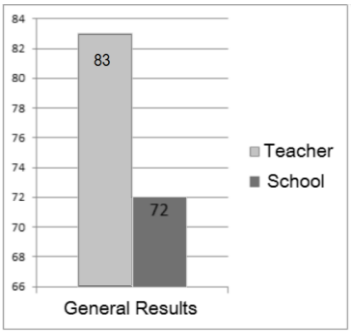

Chart 5 - Data referring to activity 2
Source: The authors

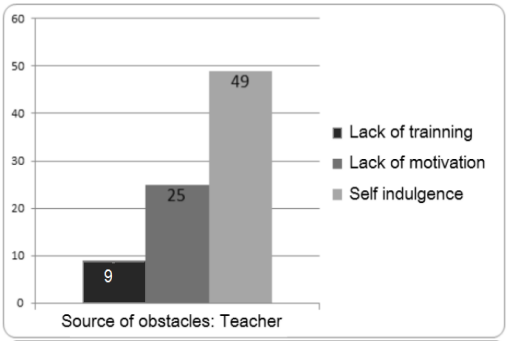

Chart 6 - Obstacles created by teachers
Source: The authors

As shown in figure 6, the barrier defined as "self-indulgence/lack of commitment" was the most frequent and summed up 49 comments, equivalent to approximately 59%. This result is consistent with chart 4, which addresses preconditions for integration, where 41.7% of the comments point to the need for a change in the teaching-learning process paradigm. If we add the indicators that address lack of motivation with those of lack of commitment - considering that they can be cause and effect - they account for approximately 89% of the causes for the barriers pointed out, leaving out only 11% to the lack of teacher training.

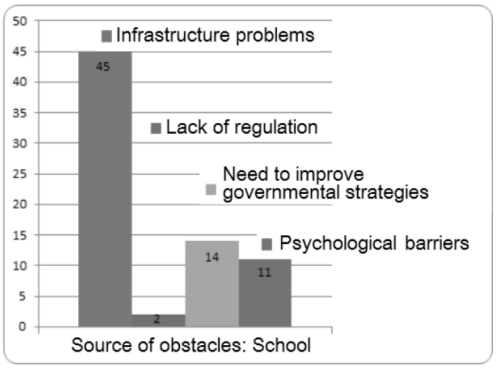

Chart 7. Obstacles created by schools
Source: The authors

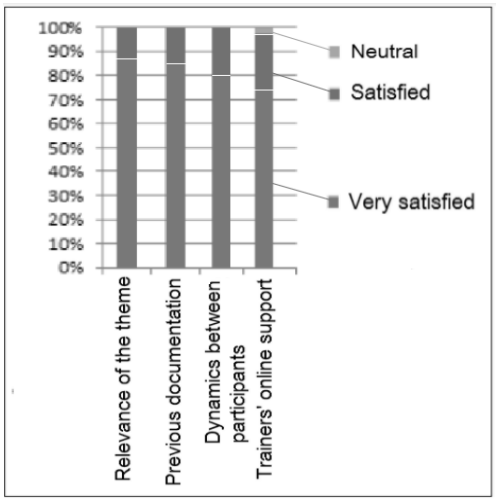

Chart 8. Evaluation of module 1 from the participants' perspective
Source: The authors

Chart 7 shows the distribution of 72 comments regarding obstacles deriving from schools. Analysing chart 7, there is a striking tendency to consider Infrastructure problems as one of the biggest barriers, making up 62.5% in comparison with the other barriers referring to school. It is possible to infer the possibility of an underlying relationship between this barrier and those identified as "lack of motivation" and "convenience" of teachers, shown in chart 6, and these can be directly related to cause and effect. The 15.2% (11 comments) pointing out to psychological barriers could also be summed up to this inference.

The need for a better positioning and strategy of the Ministry of Education about this topic has also been pointed out as significant barrier, with almost 20% of the comments (14 comments). It should be noted that this percentage can contribute to teachers' "self-indulgence" and "lack of motivation" to integrate mobile learning in their classes.

As far as the item "lack of regulation" is considered which only represents 2.7% of the comments, it seems to inconsistent with the large representation in chart 4 regarding the preconditions for the integration of mobile learning, where it was treated as a need for well-defined rules. However, it can be inferred that these apparently similar items deal with the problem from different perspectives. Lack of regulation of the school on the mobile learning issue, in relation to the subject, and teachers' own rules when using mobile devices in the classroom.

4.3 Assessment of the 1-day MOOC

At the end of the 1-day MOOC a questionnaire was applied to the participants in order to evaluate the event as a whole, as well as each module. Thirty-nine answers were registered, that is to say 56% of those who completed the asynchronous tasks made it to the end of the event. The great majority of the participants expressed satisfaction regarding all items: relevance of the theme, previous documentation, trainers' online support and dynamics between participants. There was only 1 neutral opinion and the team did not obtain any negative assessment, as shown in chart 8.

The team tried hard to respond in real time to all questions, to meet participants' needs and to solve technical issues. Regarding the dynamics generated among participants, assigning badges ("Fair play", "Good mood", "Good Speech", "Sharing person", "Pro in m-learning") is likely to have encouraged positive and rich interaction. Participants made hundreds of comments, shared images, scientific articles, ideas, strategies and experiences which also generated interaction among trainees. Their interaction with the "Contexts Trainer" was also a very positive aspect, as trainers encouraged sharing, but did not need to intervene in the debate.

5. CONCLUSION

Participants in the 1-day MOOC showed great interest in improving their understanding of the basics of using digital devices. The theme of this 1 day-MOOC proved to be appealing to a large number of teachers. and the comments in the chat room revealed many affinities between the participants.

It is important to reflect on the timing of the promotion of this initiative. Even though time constraints prevented the team from promoting the event and registrations earlier, adhesion was quite satisfactory. The time for the pre-preparation activities was an aspect that deserved some critical reflection, because it was considered insufficient in some cases. Therefore, two lessons can be taken into consideration in future developments: either to change/reduce the asynchronous material or to increase the time available.

The timetable of the synchronous activities seems to have been favourable for the first module, since it proved to be extremely productive in terms of dynamics between participants. In spite of the fact that the 1-day MOOC took place on Saturday, 78% of the participants interacted actively from the beginning of the session, which is quite representative of the participants' interest in the theme and in the concept of online training condensed into one day.

As the activities progressed, it became clear that participants are aware of the problems, difficulties and limitations of implementing mobile and integrating it into the current educational process, as well as its advantages and benefits. It is consensual that both the learning objectives and the strategies must be clear. Participants didn't stick to the discussion topics proposed and also raised other relevant issues. This demonstrates great interest and adhesion to the theme. Considering the results and also the low dropout rate throughout the day, we can conclude that the team successfully reached its goals. It seems reasonable to suggest new 1-day MOOC experiences designed for teachers of other school levels and about other themes.

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