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Mobile and blended, please! Migrants and refugees' learning choices in a language MOOC

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In this article, a study is presented of two socially inclusive Language MOOCs undertaken by refugees and migrants as part of the MOONLITE project. Three research questions were formulated on the types of devices the students prefer to use for the courses, whether that choice affects course completion, and if the teaching practice influences success on the courses. In order to answer these questions, qualitative and quantitative data were obtained from an initial and final student questionnaire, semi-structured interviews with the language teachers involved in the courses, and from the MOOC platform and YouTube Analytics. The data supported the conclusion that the students prefer to use a mobile device to undertake the courses. The majority of the students who used a mobile device successfully completed the courses. The near ubiquity of these devices and ease of use of the LMOOCs were arguably factors that made "anytime anywhere" studying possible. Regarding the teaching methodology, the majority of students who completed the course attended F2F language classes, found the online courses to complement them, and would have liked to have more time spent in the classes on the courses.

Keywords: Mobile learning, Blended learning, LMOOCs, Migrants and refugees

Introduction

Language MOOCs (Massive, Open, Online Courses) have been on the educational scene for almost a decade now (Barcena & Martín-Monje, 2014), although they "did not just appear from thin air as some new educational revolution" (Read

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& Barcena, 2015, p. 226), but rather as a natural evolution of the online course format. Defined as "dedicated Web-based online courses for second languages with unrestricted access and potentially unlimited participation" (Barcena & Martín-Monje, p. 1), there has been a growing interest in their potential for language learning, and more than 200 LMOOCs are currently on offer around the world (Martín-Monje & Borthwick, 2021; Panagiotidis, 2019) on 40 different MOOC platforms (Panagiotidis, 2019). They may cover all aspects of language teaching and learning (Li, 2017; Rubio, 2014), but seem to be more effective for some skills than others: the practice of receptive skills is easier to perform in these online courses, according to Vorobyeva (2018) but writing or speaking, productive skills, require more tailored feedback, something that may pose a challenge in a massive course.

In this introductory section, the authors will look into how Language MOOCs can become a useful educational model for a specific student group, those in need of acquiring language skills in order to integrate in a host community, which is the case of migrants and refugees, and how the choice of device and the learning methodology can act as enhancers of effective language learning in those cases. Thus, the following sections describe how educators and researchers have dealt with the specific needs of migrants and refugees when learning the language of the host country, their use of mobile devices to access information and educational resources, and the type of methodology that seems to be most popular with these communities of learners, which is blended learning (Lambert, 2020).

Language MOOCs for migrants and refugees

We must not forget that foreign language learning has a strong emotional and affective component which may impact the effectiveness of the learning process (see for example Dewaele, 2018, or MacIntyre, 2002). This factor is intensified in the context of refugee and migrant learners, who often go through traumatic experiences which inevitably have an impact on their learning abilities (Bianco & Cobo, 2019; Mosallam & Thabet, 2016), and must be kept in mind when creating courses for these groups. Also, as argued by Traxler et al. (2019), the educational solutions that have been proposed up to date are not necessarily adequate for the refugee communities coming to Western Europe, due to their cultural and contextual specificities, and the "one-size-fits-all" approach of other language courses is not valid in this scenario.

In this context, digital learning has been considered the fittest educational proposal to deliver instruction to refugees and migrants, since it is cost-effective and offers flexible solutions that can be scaled up to provide learning opportunities for these groups (Castaño-Muñoz, Colucci, & Smidt, 2018). In fact, a new line of contextualised MOOCs has emerged as an alternative to commercial MOOCs (Lambert, 2020; Sha & Calonge, 2019), "one that would widen participation and help contribute to student equity and social inclusion" (Castrillo & Sedano, 2021). The systematic review performed by Lambert (2020) has revealed that this type of MOOCs, which diverges from more commercial

ones and tries to provide equitable forms of online education, is a valid educational model, whose main success is the intentional and collaborative design for disadvantaged groups, as well as the understanding of the needs of particular marginalised learners, e.g. the provision of extra face-to-face (henceforth, F2F) support in the form of blended learning, also recommended by Castaño-Muñoz et al. (2018) for this type of learners.

Linking this with the importance of emotional and affective aspects not only in language learning, but in learning in general, Traxler et al. (2019) point out that the conceptualisation of digital literacy (especially in refugees and migrants from the Middle East and North Africa) should include how the use of digital technology contributes to psychological well-being, which the environmental stress tends to undermine. Another theoretical proposal in this line of thought is what Sha and Calonge (2019) call the "frugal MOOC model", a type of massive open online courses (MOOCs) which can be adapted and contextualised to meet the very specific needs of refugee and migrant learners. In fact, there have been several research projects highlighting the MOOC format as the ideal educational model to develop inclusive online language courses, e.g., LangMOOCs (www.langmooc.com) or MOOCs4inclusion (https://moocs4inclusion.org/), and even renowned MOOC providers like Coursera have initiatives which are specific for refugees (https://www.coursera.org/refugees) or private entities like Kiron (https://kiron.ngo/en/).

The Erasmus+ project MOONLITE (2016-1-ES01-KA203-025731; 2016-2019), in which this research has been conducted, has aimed to improve educational offerings to refugees both by Higher Education Institutions and in cross-regional collaboration. One of the outputs of the project has been the creation of two Spanish language MOOCs for immediate needs, based on adaptability criteria with tutoring support and official recognition (Castrillo & Sedano, 2021). In the next section we look at how mobile learning has played a part in this process.

Mobile-assisted language learning and LMOOCs

The turn of the century seems to have marked a shift in the use of technology for language learning. Whereas the second part of the 20th century meant a significant advance in the normalisation of the use of computers for language learning (CALL, see Bax 2003 & 2011 for example), with the new millennium CALL literature turned its attention to MALL (mobile-assisted language learning; Chinnery, 2006) and ubiquitous learning (Ko, 2017; Li & Hegelheimer, 2013; Wang & Smith, 2013) and smartphones became the most popular devices for language learning on the move (Adams Becker et al, 2016; Godwin-Jones, 2011, 2016 & 2017; Kim et al, 2013; Ko, 2017).

Mobile phones and especially smartphones have been acknowledged as valuable in enabling inclusion, since they provide access to information resources and language learning on a device that refugees and migrants are already using for their daily activities (Jones et al., 2017). Refugees and migrants are aware of the importance of becoming integrated in the host country by learning their language and culture, in order to avoid being segregated and

socially marginalised or excluded (Bradley et al, 2017, Kukulska-Hulme et al. 2015). Also, as pointed out in the previous section, it is often the only technology that they have (Read & Barcena, 2019; Read et al., 2018).

Once the relevance of the use of MALL in inclusive learning had been established, it made sense to ensure that the courses designed for refugee and migrant groups deployed well on smartphones, tablets, as well as on desktops. Furthermore, mobile devices have been identified to complement LMOOCs in three ways (Read et al., 2017, p. 1). They can act as portable course clients, enhancing ubiquitous learning; 2) they offer a rich and flexible way of interacting with the real world, enabling students to take activities out of the online course into everyday life; and 3) the app culture we are immersed in provides a useful set of programs, such as social media, which complement activities carried out in these courses (Fuchs, 2017; Jabeur et al., 2013).

Blended learning as an effective enhancer of language learning in MOOCs

Blended learning -the combination of F2F teaching with online instruction- is a well-established methodology that has been used for language learning since the beginning of CALL (Barret & Sharma, 2007; Claypole, 2010; Levy, 1997; Martín-Monje, 2014; Neumeier, 2005), when language instructors started to combine online learning and traditional classes. These two types of learning complement and nurture each other: online instruction may enhance written skills (reading and writing) and F2F classes the oral ones (listening and speaking); online learning may potentiate collaborative work and traditional classes strengthen teacher-student interaction; technology-based courses such as MOOCs provide flexibility in when and where we are learning, and F2F education centralises the learning experience in a sole place and time for all the students. Furthermore, some studies, like that of Grant (2015), suggest that students have more favourable attitudes and motivation when performing their language learning in a blended environment rather than exclusively online.

It has already been established that LMOOCs may be an efficient instructional model to help refugees and migrants acquire the linguistic skills they need to integrate in the host country. Colucci et al. (2017) claim that an important factor in this effectiveness is the way in which they are implemented, and they recommend a blended approach that includes support and mentoring services. In fact, there are multiple examples of the success of this partnership among learners, refugee support groups or local instructors and MOOC authors (Creelman & Witthaus, 2018).

The MOONLITE project opted for the involvement of refugee support groups in the design, development and facilitation of the LMOOCs, and identified a series of criteria that characterise inclusive MOOCs in different domains, namely linguistic, cultural, methodological, technological, political and ethical (Read et al., 2018). The creation of the two LMOOCs "Puertas Abiertas: Español para necesidades inmediatas I y II (Open Doors: Spanish for immediate needs I and II)", which are analysed in the next sections, took into account all these

studies (Castaño-Muñoz et al, 2018; Lambert, 2020; Sha & Calonge, 2019), which suggest that if we wish to create inclusive LMOOCs we must focus on the specific learning needs of refugees and migrants -who often are inexperienced online learners (Creelman & Witthaus, 2018)- and establish a supportive learning community in which educators, refugee support groups, volunteers and trusted peers work together to help learners progress in their linguistic skills.

The project has wider research aims and outputs, but for the purposes of this paper, the focus was placed on the following issues: 1) whether mobile devices have been the preferred technology chosen by the students participating in this Spanish LMOOC; 2) how the choice of device may have had an influence on the completion rate; and finally 3) whether the option of completing the course with a blended learning methodology has had an impact on the LMOOC completion rate. Accordingly, the following research questions (RQ) have been put forward:

- ▶ RQ1: To what extent do refugee students use mobile devices to access the course contents and interact?
- ▶ RQ2: How does the chosen device impact course completion?
- ▶ RQ3: In what way does the teaching practice (blended learning/solely online learning) impact course completion and success?

Method

This study is framed within the MOONLITE project and this paper specifically focuses on part of it, which involved the creation and running of the first edition of the two LMOOCs "Puertas Abiertas: Español para necesidades inmediatas I y II (Open Doors: Spanish for immediate needs I and II)", which took place in the first semester of 2019 (January 15 to March 10 and March 12 to April 22 respectively) using the UNED Abierta platform, at Universidad Nacional de Educación a Distancia, Spain. A total of 2,252 participants registered for Puertas Abiertas I and 1,233 for Puertas Abiertas II. They followed a socially inclusive LMOOC design (Read et al., 2018), taking into account cultural and ethical criteria (Castaño-Muñoz et al, 2018; Lambert, 2020; Sha & Calonge, 2019) such as the diversity of the participants' identities, non-Eurocentric learning styles (e.g. the preference for oral transmission of knowledge), multimodality with a focus on audio-visual content, and multilingualism -with the inclusion of subtitles and transcriptions into Arabic and French for the video content-, and a glossary with keywords in Spanish, English, French and Arabic, in order to cater for a wide range of likely native languages.

The two courses were developed with a functional orientation to fulfil the most immediate necessities of these groups (Read et al., 2018), with contents related to the most common communicative scenarios for newcomers: dealing with refugee-specific administration, moving around the city, looking for a home, going to the doctor, understanding their civil rights, etc. Table 1 shows the structure of the two courses:

Table 1. Structure of the two Spanish MOOCs.

Puertas Abiertas I	Module 1	Introductions, administration and bureaucracy
	Module 2	Routines and daily life
	Module 3	Travel and moving around
	Module 4	Going to the doctor
Puertas Abiertas II	Module 1	Leisure time and socialisation
	Module 2	Looking for housing
	Module 3	Training and employment
	Module 4	Defending your legal rights

About a month before the start of the courses, they were publicised in a wide range of Internet portals for refugees and migrants as well as by directly contacting charity and non-governmental associations that work with them.

In geographical terms, the LMOOCs had a broad range of participants. The profile data provided by the platform showed that there were participants from around 60 countries, with the highest percentage from Morocco (16%), followed by Russia (7%), Ukraine (5%), Senegal, Mali or Cameroon (4% each). The participants were mostly male, in their twenties (39%) and educated in their home countries (30% claimed to have university qualifications and 24% secondary education). Most of them were already in Spain (88%) and were recent arrivals (63% had arrived the previous year). The main languages spoken were French (24%), Arabic (16%) and English (15%), which coincided with the glossaries and translations that had been prepared when designing the course-, and they generally admitted that their current level of Spanish needed to improve in all skills (listening, reading, speaking and writing).

Within the courses, social interaction was encouraged through forums and social networks (a Facebook page), both facilitated by volunteers who also spoke the participants' main native languages (French and Arabic). Scaffolding in their learning was promoted through visual aids, such as icons to identify the different items of the course, the possibility to slow down the speed of the video-recordings, glossaries, or online and picture dictionaries.

Furthermore, additional social interaction was also possible for some students who were in F2F language classes. In the MOONLITE project a group of Spanish language teachers had participated in the design, piloting and running of the course. These teachers were able to use the courses as part of a blended-learning methodology.

As for data collection procedures, they included both qualitative and quantitative techniques. The former consisted of an initial and final questionnaire which explored the profile of the student group enrolled in the courses. The initial questionnaire focused on their demographic data and educational background, current situation as refugees/migrants in Spain or wishing to come to the country, their language skills and the technical equipment they were using and their digital literacy. The final questionnaire investigated the fulfilment of their course expectations, opinions about the course materials and activities,

possible technical issues and the perceived usefulness of the course in their integration in the country.

Also, as part of the qualitative study a total of 7 semi-structured interviews were carried out with teachers. The purpose of these interviews was to gain a better understanding of how the blended learning had taken place, the methodological strategies the teachers had developed to combine the online course and the F2F sessions, and the access to technology in these F2F classes.

With regard to the quantitative data, the MOOC platform OpenEdX (https://open.edx.org/) recorded the online activity of each participant and YouTubeAnalytics (https://studio.youtube.com/) provided metrics for the video materials on engagement (how long viewers spent watching the video), and device type (which devices users were viewing the videos on). The data set was processed using the Microsoft Excel software.

Results

The results presented in this section are structured in terms of the three research questions presented above. Regarding the first, that of the device that the students preferred to use to access the course contents, their intention can be seen from a question included in the questionnaire they answered before starting. They were asked about which device they planned to use and were presented a list of devices to choose from. Figure 1 presents the relation of device type to number of students who use them. 44.6% of the students noted their intention to use a mobile device (smartphone, tablet or both) for the LMOOCs, and 94.2% that they would use it in conjunction with either a portable or desktop computer.
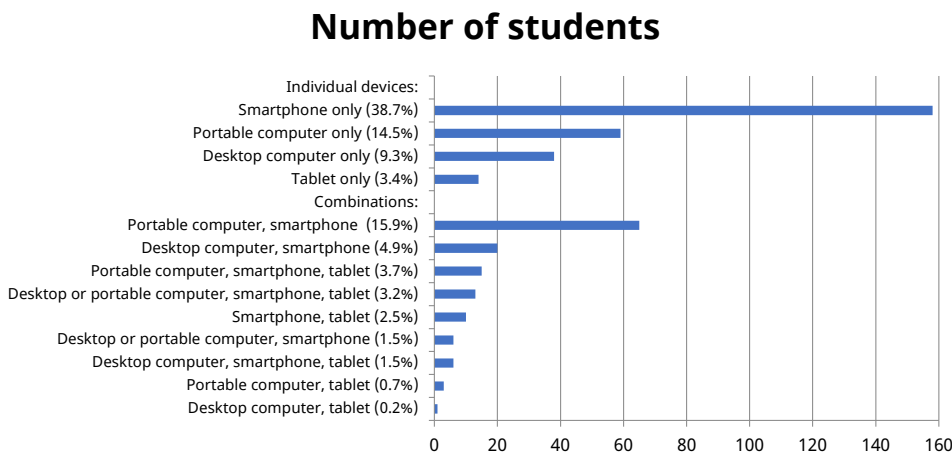

Number of students

Figure 1. Intended device usage by students before starting the course

These data can be contrasted with those from the same question included in the questionnaire the students answered after completing the course, presented in Figure 2. While there are fewer answers to the latter (354) than the former (408), the percentages are very similar as is the order of devices actually used.
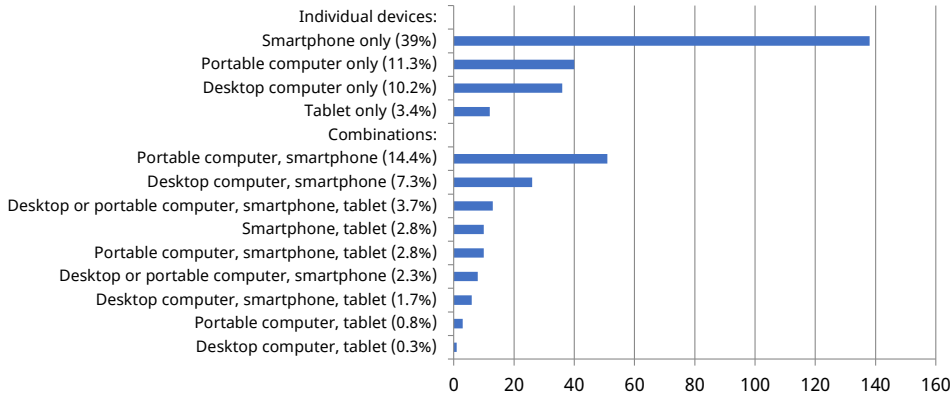
Number of students

Figure 2. Reported device usage by students in the LMOOCs

Once the course started it was possible to contrast these data with those coming from YouTube, where the course videos were stored, and the actual device that the students used. Figure 3 presents the relation of the number of views of course videos to those viewed from a mobile device. Even though only 42.1% of students had stated their intention to only use a mobile device (smartphone, tablet, or both) for the course (and 76.2% to use it in combination with some kind of computer), as can be seen in the figure, over 70% of the views of all the videos were undertaken using a mobile device. The students obviously use the most appropriate device they have at hand to undertake the course. The bigger the screen and better the sound quality, the easier it is for them to understand what is happening in the videos. It is unlikely that a student with a mobile phone on the table next to some kind of computer, would choose to use it to watch course videos. Therefore, if the students do use a mobile device to watch the course videos, either they don't have access to a computer, or they are doing so when they are away from them. Such behaviour supports the idea of mobile learning as "anytime, anywhere".
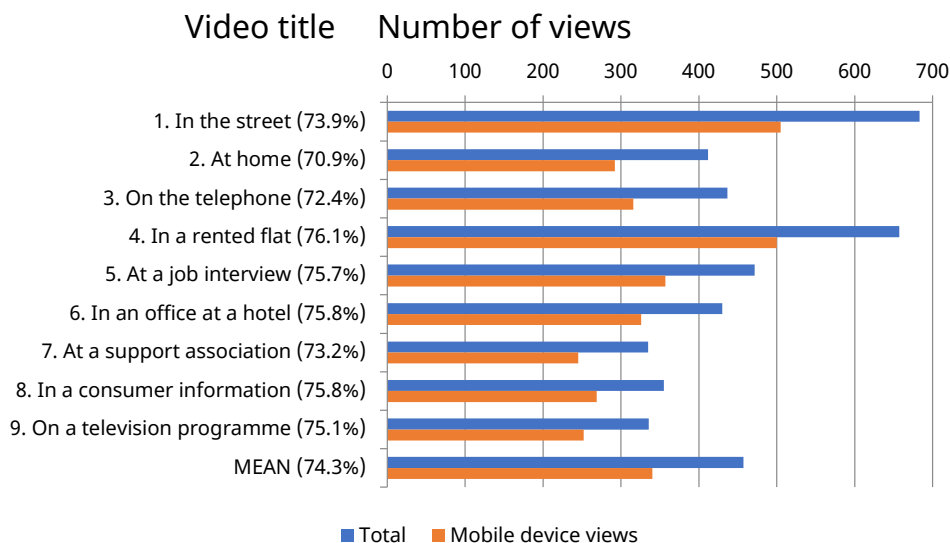
Figure 3. Relation of video views to use of a mobile device

Once the course had finished, the students were asked their opinion about undertaking the course from a mobile device, if they had done so, and how well they were able to use it to learn, and as can be seen in figure 4, 90% considered the experience to have been good or very good (in the sense that they both like undertaking the course on their device and found it a good way to learn).
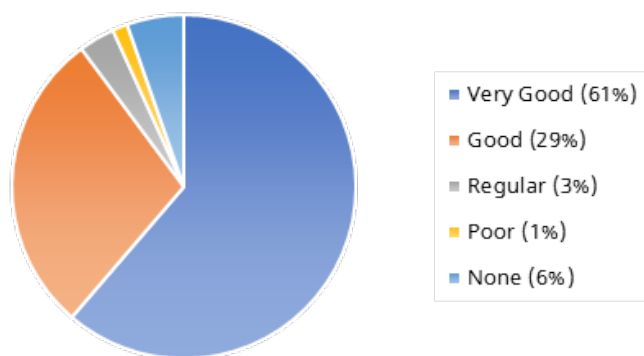

Legend:
- Very Good (61%)
- Good (29%)
- Regular (3%)
- Poor (1%)
- None (6%)

Figure 4. Student experience of having done the course using a mobile device

The students could also add comments to their previous answer, so it was possible to analyse the answers given by those who had selected "Regular" or "Poor". They noted that the main difficulties they had were listening to the audios, downloading the course materials (in PDF), or writing in the forums. Since the course deployment had been tested on both Android and iOS devices, before it had been released to the students, it is not clear why they these problems occurred. Further research would be required. Such problems can occur due to the particular apps that are installed. For example, if a suitable PDF reader

is not installed on an iOS device, then it is not possible to download a document. The file has to be downloaded to a specific app, such as Acrobat Reader.

Regarding the second research question, about the device chosen to undertake the course and overall completion and success (the former refers to students who have undertaken all the module activities, and the latter, correctly answering 50% or more of the evaluation questions at the end of each module), the data presented previously in figures 1 and 2 can be complemented with the completion rates of the individual activities in each module, presented in figure 5, and the final module evaluation, presented in figure 6. The mean success rate for each activity is 97.3% and for each module 98.5%.
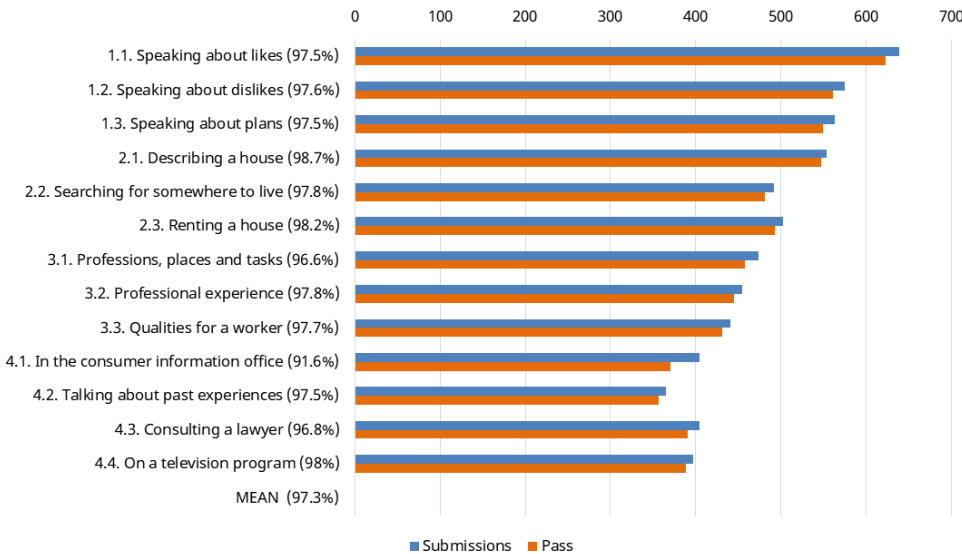
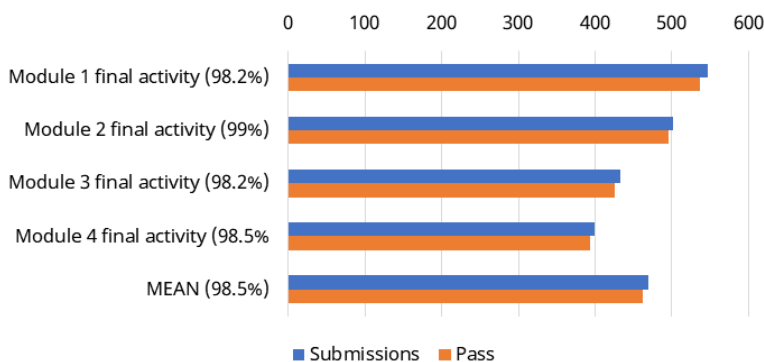**Figure 5.** Relation of students submitting the module activities to those passing them.

Figure 6. Relation of student number undertaking final module activity and pass rate

Regarding research question 3, and the students' opinion on whether the teaching practice (blended learning/solely online learning) had an impact on successful course completion, firstly it was necessary to know whether the students were attending F2F language classes. Figure 7 shows that 72.9% of the students were attending some form of Spanish language class.
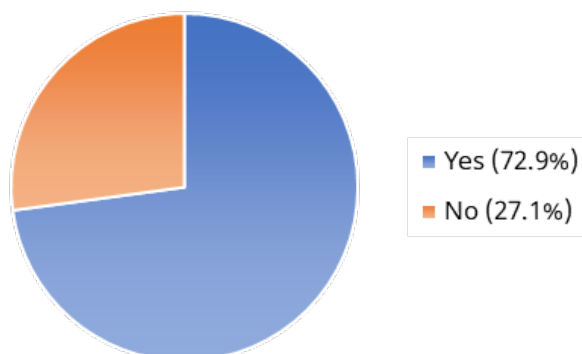
Figure 7. Students attending F2F language classes

The students who had answered affirmatively to the previous question were subsequently asked whether the LMOOCs had helped them with their classes, the results of which can be seen in figure 8.
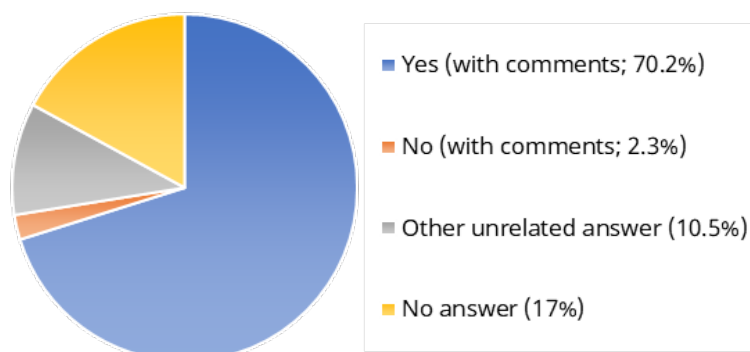

Figure 8. Student's opinion on whether the LMOOCs had helped them with their language classes

Ignoring the cases where answers unrelated to the question were given, or where no answers were given at all, there were 181 affirmative replies given from a total of 187, showing that 96.8% of the students who had undertaken the LMOOCs considered them to have helped the students with their F2F language classes. Subsequent analysis of the comments provided by the students, enabled them to be grouped together, to show the most common answers, presented here from most popular to least: learn more Spanish and practice using it, learn more vocabulary and pronunciation, understand more spoken Spanish, improve my pronunciation, speed, and fluency, learn new verbs and grammar, learn about Spanish culture, do practical activities from situations that I may find myself in.

The students who were attending the F2F language classes with the teachers who had participated in the development of the courses were asked if they would have liked to have worked more on the second language content covered in the LMOOCs in their classes. As can be seen in figure 9, 88.4% would have liked to have had the LMOOC content covered in their classes.
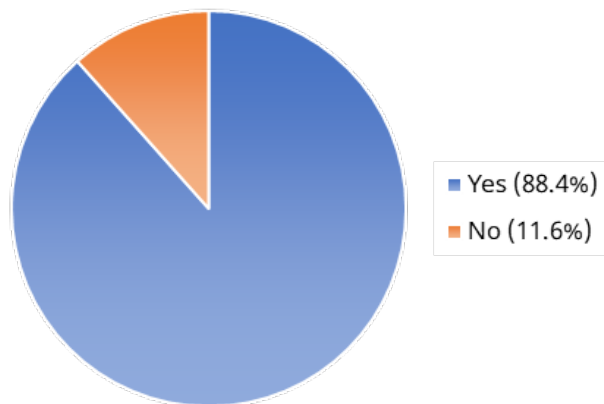
Figure 9. Students who would have liked to work on the LMOOCs in their F2F language classes.

Similarly, the teachers in these classes were asked about the students' use of their own devices in the educational centres and whether they also used the devices when they were absent, as evidenced in questions 5 and 6 from the interview questions given to the teachers:

Q5. Did the students use their own devices to access the course or just watch you access the course?
Q6. Which devices did the students use to access the course?

Affirmative answers were provided by about almost all students. However, a few refugees and migrants didn't have access to any devices. Furthermore, a lot of students, according to their teachers, didn't have access to Internet and had to use public Wi-Fi networks when they could find them. Fortunately, in Spain, there are a large number of such open networks available.

Discussion

The underlying goal of this research was to understand what factors led 33% of the students who undertook the Puertas Abiertas LMOOCs to successfully complete these consecutive courses and view the experience in such a positive manner. The majority of MOOCs don't achieve these completion figures, where typically only around 12% of students actually successfully finish them (Jordan, 2015). Even though MOOCs have been positioned in the educational market as an inclusive option for students who have been left behind the standard formal institutional teaching process, the majority of people on these courses already have some qualifications (e.g., Wildavsky, 2015). However, in this case, since the courses were specifically designed and developed for refugees and migrants recently arrived in Spain, then it is perhaps not surprising that the student profile was different. Another factor that arguably made these LMOOCs particularly interesting to this target audience, is not only the fact that they covered introductory Spanish, since there are many such courses freely available

online, but also the social context of the course, in that each of the modules was based in real life situations in which refugee and migrant students would likely find themselves, at one time or another (such as asking for directions, going to the doctor, seeking legal help, etc.).

Prior contact with this social group and the charity organisations that support them, not only helped the authors (and other collaborating colleagues) build the two LMOOCs for them, but also gave an insight into their needs and behaviours. The three research questions presented earlier, therefore, can be seen to reflect this relation. The use of mobile devices as the main, and sometimes only, technology that they have for personal communication and access to information, is highlighted both in the academic literature (e.g., Rippin, 2019), and also in the general press (e.g., Evans, 2014). As noted by Read & Bárcena (2015), these devices are like digital Swiss Army knives, since they are small, light, but also highly functional. Their use as a preferred way to access information online is not something restricted to refugees and migrants but reflects a general trend. In general terms mobile access to websites and social networks from mobile devices accounts for over half of all Internet traffic (BroadbandSearch, 2021). However, in Europe this figure is close to 80%, in the United States 90%, and in China closer to 98% (Galos, 2021). Since the MOOC platform used at UNED where these courses were hosted is Open EdX, which in itself is not completely responsive (Wikipedia, 2021), care was taken by the course development team to ensure that the contents and activities did deploy well on mobile devices.

The first research question was established to explore the relation between the students' mobile device usage and their success in the LMOOCs. From figure 1, it can be seen that 44.6% of the students noted their intention to use only a mobile device, and 31.6% to use it in combination with some kind of computer. Based upon the data from YouTube, detailed in figure 3, a mean of 74.3% of the students actually used a mobile device to watch the course videos.

In the final questionnaire, there are 3 questions that directly relate to device usage, firstly the same question that was present in the initial question, about device usage, secondly, a question on the experience of having used a mobile device to take the course (if this was the case), and thirdly, if the experience had been negative, why this was so. For the first question, as can be seen in figure 2, the data are very similar to those presented in figure 1, showing that the students' intentions did not change during the courses, and 78.5% did use a mobile device in some way during the LMOOCs, either as their only technology or in combination with some kind of computer. Secondly, as can be seen in figure 3, 74.3% of the students used a mobile device to access the videos on the courses from YouTube. Thirdly, figure 4 shows that 90% of the students who had used a mobile device for the course found the experience to be very good or good (in terms of user experience and as an effective way to learn, as noted above). As noted subsequently, the problems the students had with using such a device to undertake the course were related to accessing and interacting with the course resources.

This result reflects the use of mobile devices by refugees and migrants as

their main, and sometimes only, way to reach information and services online. Even where an alternative exists, like a portable computer, quite often the ease of access and use makes such devices the preferred option. Based upon the data presented above, owning a mobile device doesn't necessarily mean that a computer wouldn't be used if one was available and the task to be done was appropriate. Not surprisingly, refugees and migrants like to combine the technology they have to work in the LMOOCs, when they have more than one option available, in the same way as other students do. If and when they are somewhere where computers are available, then they will use them. Otherwise, they use their mobile devices. This was noted by the teachers of the students that attended F2F classes.

These results suggest that mobile devices represent a general and ubiquitous tool for students to increase their engagement with online language learning courses such as the LMOOC used here. Such an automatic adoption of them for this purpose reflects what Bax (2003) refers to as the "normalization" of this technology. Students' behaviour reflects that of the majority of people, i.e., their mobile devices are never far from their hands, and are both available and a natural choice for any online activities including their language learning activities. As such, as Bax notes, they can be seen to be a valuable element in the language learning process.

Regarding the second research question, about the impact of the device type on course completion and success (where the former refers to the number of students who interact with all the materials in each module and undertake the associated activities and the latter are the students who achieve more than 50% of correct answers in all activities and evaluations), based upon the data from figure 2, that showed that 78.5% of the students who undertook the courses used a mobile device, and from figure 6, where successful course completion was 98.5%, it can be concluded that the majority of the students who finished the course used mobile devices, to some degree. As noted above this doesn't necessarily imply that they only used them and had no access to computer, but that such devices formed an important tool that all of them had and arguably contributed to the successful completion of the course. In order to better understand which device each student has used to connect to the MOOCs, a computer or a mobile device, finer-grained data would be necessary. The data would need to show not only how long each type of device has been used but also which activities have been undertaken. Currently, such data is not produced for the analytics available in this platform.

The third research question focusses on the teaching methodology used with the students, whether they only undertook online learning in the LMOOCs or also attended F2F language classes, and whether this had any impact on course completion and success. From the student questionnaire it can be seen that 72.9% of the students who finished the courses attended F2F Spanish classes. This provided them with a blended language learning methodology, since according to their teachers, some of these classes were used to work on the LMOOCs or to do activities intended to reinforce what was being learnt there. According to the questionnaire, 96.8% of the students who were asked whether

the LMOOCs had complemented the F2F classes, said yes. Furthermore, based upon the additional comments that the students provided, there was a complementary relationship between the F2F classes and the LMOOCs. The former helped the latter and vice versa. Examples quoted by the students for this relationship, include improvements in vocabulary, grammar, and general motivation to carry on. When asked whether they would like to have had more class-time work on the LMOOCs, 88.4% of the students said "yes," noting that it would have helped them to better understand the material in the course, make the online course more interactive, and provide a general increase in the support they received.

The F2F language teachers offered a complementary perspective here, highlighting the supporting problem-solving nature of the classes. In their interviews, there were three questions that were relevant to this research question:

Q2. How did the classes complement the MOOC?
Q3. Did you answer student questions about the MOOC? Did you focus on grammar, oral or written practise?
Q4. Did you anticipate content that you knew the students would see in the course? And more advanced elements?

The teachers noted, in a similar way to the students in their questionnaire, that the classes and MOOC were mutually supportive, and that the blended approach was popular with almost all the students, motivating and supporting them to continue with the MOOC, even in cases where individual students were having difficulties and might otherwise have abandoned a course. The teachers had used classroom time to answer different questions arising from the MOOC, focussing on questions of grammar, oral and written practise, as they arose. Finally, it can be noted that since the teachers were familiar with the structure of the MOOC and knew which sections the students were going to study next, they were able to anticipate some of the content and prepare the students for what they were going to see. Thus, in this case the key to success was how the teachers helped the students make the most of the course, highlighting the resources and activities that best fitted their needs; so the focus should be placed on how the blended approach maximised the learning experience, rather than on which complementary resources were available in the online course.

Finally, it is important to consider the limitations of this research and its transferability to other social collectives. Firstly, it has to be noted that the majority of students who completed the final questionnaires were those who completed the LMOOCs. So, we are lacking data from those who didn't. For example, maybe the students who dropped out also used mobile devices more than other types. From the authors' experience, this is a standard problem in research based around online courses since the students who drop out usually disconnect completely from the learning scenario and are not easily contactable to find out why. However, as noted above in this case, there are complementary data, about which devices were used to watch the YouTube videos in

the courses, that do show that almost half of students who saw the videos did so from a computer. This contrasts with the above data from the final questionnaires, where 85% of the students stated that they had used mobiles to access the courses (of whom 95% were very happy with the experience). Therefore, it is reasonable to conclude that more of the students who successfully completed the LMOOCs were using mobile devices to do, and as such, these devices have contributed to this result.

Secondly, the popularity of the blended-learning methodology with this particular student group of students is also possibly due, to some extent, to their need for human contact. It has been noted that refugees have been reported to distrust online learning and prefer F2F taught classes (Kamyab, 2017). This is not surprising given the often-traumatic history they have and their desire for stability and social integration. They may be, therefore, more motivated by any F2F teaching than most students from western society would be. A future study would be needed with a different student profile to explore this question.

Thirdly and finally, regarding the transferability of these results to other social collectives, and indeed, other areas of knowledge, more research is needed. A key feature of the refugees and migrants, the audience of these LMOOCs, is that they are obviously very keen to learn the target language of the country where they are to help them settle, find a job, and improve their lives via a better social inclusion. Would other students, following such a course for interest, or as one of many goals they might have for self-improvement, present similar behaviour? Maybe not. However, the research questions that the authors have attempted to answer with this research place the spotlight on two important factors related to student learning, and more generally, human behaviour: the role of mobile devices in online learning and the effect of a blended-learning methodology. The former reflects a general behavioural change in the population over the past decade, where few would deny what Bax (2003) referred to as the "normalization" of this technology. That such devices appear to potentiate online learning would seem to confirm the role they are having in most other areas of online behaviour. The latter reflects peoples' need for other people. We are social animals (Dijksterhuis, 2005) and benefit from contact with our peers and with those who can support us. It is not surprising, therefore, that students benefit with online courses from F2F classes, and vice-versa. Such support can range from mere motivational improvement to access to mutually complementary content and activities. Such benefits are arguably not limited to the social group under study in this research, that of refugees and migrants, but is general to all types of students in different areas of learning.

Conclusion

In this article a study is presented of two socially inclusive LMOOCs undertaken by refugees and migrants as part of the MOONLITE project. Given the everyday reality of this collective, and previous evidence of their learning needs, special attention was given to ensure that the courses deployed well on mobile devices.

In this study three research questions were formulated on the types of devices the students prefer to use for the courses, whether that choice affects course completion, and if the teaching practice influences success on the courses.

In order to answer these questions, qualitative and quantitative data were obtained from an initial and final student questionnaire, semi-structured interviews with the language teachers involved in the courses, and from the MOOC platform and YouTube Analytics. The data supported the conclusion that the students prefer to use a mobile device to undertake the courses, although a computer would be used as well in some cases. The majority of the students who used a mobile device successfully completed the courses. The near ubiquity of these devices and ease of access to the LMOOCs were presumably factors that made "anytime anywhere" studying possible. Regarding the teaching methodology, the majority of students who completed the course attended F2F language classes, found the online courses to complement them, and would have like to have more time spent in the classes to the courses.

While the results of the study presented here would appear to answer the research questions presented by the authors, the limitations of this work that were highlighted in the previous section needs to be born in mind, so that future studies can focus on the issues raised by them. Firstly, the post questionnaire was mainly answered by students who successfully completed the course. Although this problem is not easy to solve, some other way of reaching students who abandoned the courses should be found in the future. Secondly, that the popularity of blended-learning methodology with refugees and migrants may in part be due to their need for human contact. One way to explore this point would be to develop an LMOOC, with broader learning objectives and content, that would attract a wider range of students. Thirdly and finally, such an LMOOC would also enable the transferability of these results to other social collectives to be further studied.

This paper shows that LMOOCs are a useful educational model for migrants and refugees, helping them in their integration in the host country through the improvement of their language skills. Digital learning is cost-effective and offers flexible solutions that enable the design of tailor-made courses for these groups. In the context of the MOONLITE project their MOOCs Puertas Abiertas I & II have followed the guidelines for inclusive LMOOCs involving the target audience in the MOOC production process, incorporating inclusiveness in the design, development and deployment, making them accessible from mobile devices, including multimodal materials, using volunteer refugees and migrants as educational proxies, making the most of educational opportunities to create online communities and using language to create a respectful and emphatic atmosphere.

These LMOOCs truly cater for students who are on the margins of education, with difficulty in accessing university courses due to their background and socio-political circumstances. The Puertas Abiertas LMOOCs have been specifically designed for refugees and migrants recently arrived in Spain and the course contents focus on real life situations which they are likely to encounter. This is probably why the success rate has been higher than in other LMOOCs,

and also why the student profile is different, i.e., the typical LMOOC student is female, in her late thirties, from a developed Western country and has university qualifications (Martín-Monje, 2017).

This paper shows that the choice of a mobile device to access the course contents is a natural one for migrants and refugees, since for many of them it is the only technology that they have easily at hand. They also seem to be satisfied with this experience of mobile learning, although some reported specific problems accessing and interacting course resources. Furthermore, the use of these devices acted as an important asset towards the successful completion of the course.

Regarding the blended learning methodology, both teachers and students claim the positive impact in the learning process which has worked in two directions: The LMOOC has complemented the F2F classes, and these classes have been useful in keeping students engaged and motivated to continue with the online course. Besides, it has helped them clarify doubts, especially regarding vocabulary and grammar.

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