

Mobile Learning for Refugees

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The mass influx of refugees into Europe since 2013 and their educational challenges have increased the need for high-quality refugee education. One proposal for addressing these challenges was to leverage mobile devices for educational purposes (mobile learning). By surveying the literature, the present paper concludes that mobile learning seems beneficial for refugees in two ways: providing refugees access to education and improving the quality of the provided refugee education. However, it is not a one-solution-fits-all regarding their education.

Keywords: refugees, refugee education, mobile learning, mobile applications

1. Introduction

In recent years, the mass influx of refugees has exceeded the number of refugees from the Second World War^[1]. In 2019, it was estimated that worldwide, a person had to flee his or her country roughly every two seconds^[2]. The unprecedented number of refugees (over 100 million people) during the second decade of the 21st century (2010–2019) made many researchers talk about a “global refugee crisis”^{[3][4][5]}. Children and teenage refugees have constituted a significant portion of the refugee population. In 2018, the United Nations High Commissioner for Refugees (UNHCR) reported that approximately half of the 25.4 million refugees were under the age of 18^[2], while in 2019, the number of refugee children reached 30 to 34 million^[5].

The crucial role of refugee education has been recognized by governments and organizations worldwide^{[6][7]}. However, 13 million youths have been reported as being behind in school^[4]. According to the UNHCR, in 2019, only 63% of refugee children worldwide had access to primary education, 24% to secondary education, and only 3% succeeded in obtaining a higher education degree^[8]. On average, each refugee has spent approximately 17–20 years in exile^{[9][10]}. With that in mind, United Nations Children’s Fund (UNICEF) has warned that the risk of a “lost generation” of refugee children will be increased if educational opportunities are not provided rapidly^{[4][11][12][13]}. Many countries have adopted an educational plan for refugees within their integration policy. However, education remains a challenging task for refugees for several reasons/factors—even with such policies being implemented.

In 2016, the European Commission proposed the use of technological breakthroughs (e.g., the Internet and smart mobile devices) together with the use of interactive learning through them, as a way of addressing the requirements for education and the faster integration of refugees^{[14][15]}. Although many NGOs, European and UN agencies have invested in mobile devices to provide access and enhance refugees’ education, there is limited research on the effect of mobile learning on refugees^{[12][16][17]}.

2. Mobile learning and refugees

Due to the widespread use of mobile devices in everyday life and the benefits they offer, many researchers have begun to explore how to use them in other areas, such as the education sector^{[18][19][20]}. Mobile learning, a new research field in education^{[21][22][23]}, began developing gradually in the late 20th century^[24], although a significant increase in the use of mobile devices for educational purposes has been observed since 2008^[25] following the release of the first generation iPhone the same year^[20]. The effectiveness of mobile learning in the educational process has been examined thoroughly, presenting mostly positive results^{[26][27][28][29][30]}. In particular, mobile learning positively affects students’ performance, increasing their motivation and engagement with the subject matter^[31].

As far as refugee populations are concerned, they seem to use mobile devices daily to face everyday difficulties^{[3][4][32]}^[33]. The research revealed that most refugees own a mobile device, and more than 50% of young refugees use the Internet daily^{[34][35]}. Refugees seem to relate their mobile devices and Internet connectivity to the basic needs for their survival^{[35][36]}. Given the high rates of mobile devices’ availability among refugees and the advantages of mobile learning, research seems to support the use of mobile learning in order to enable and enhance education for refugee

populations^{[37][35][38]}. According to Lamrani and Abdelwahed^[39], mobile learning could contribute to refugee education in expanding refugee access to formal and informal education and improving the quality of the education they receive. According to UNESCO^[40], mobile learning could act as a way of averting the rise of a lost generation ^{[6][41][40]}.

3. Juxtaposing Mobile Learning Applications Characteristics with Refugee Needs

Mobile apps are not panaceas for refugees. The benefits of mobile learning could not have any influence if the applications' design "lacks coordination, is driven by profit and is decontextualized from the learning context"^[42] (p.1). Thus, it becomes crucial for mobile learning apps' characteristics to match complex refugee needs, towards a better educational experience. Various characteristics were proposed or applied in the reviewed literature about mobile learning applications for refugee students. For this study's purposes, we collected and attempted to juxtapose some mobile app characteristics with the four (out of five) groups of challenging factors to refugee education: the living conditions and the learning, emotional and socio-cultural needs (Table 2). The fifth group, i.e., the host country's educational system, is omitted because the creation of educational applications for mobile learning aims to provide solutions to the deficiencies of the existing educational system.

Table 2. Characteristics of mobile learning applications proposed in the literature.

Factors Influencing Refugee Learning	Apps' Characteristics
A. Living conditions	Free applications ^{[41][43][44]} . No need for Internet connectivity ^{[2][45][46]} .
B. Learning needs	Scaffolding in the use of the application ^{[47][48]} . Scaffolding in the approach of new educational content (step by step) ^[2] . Explanation of the meaning of scientific terms ^[49] . Ability to develop metacognitive skills (e.g., auto-correction, self-evaluation of progress) ^[48] .
C. Emotional needs	Possibility of social interactions ^{[47][41][43][50][50]} .
D. Socio-cultural differences	Multilingual applications ^[51] .

2.1. Living Conditions of Refugee Students

Access by refugee students to a fixed Internet network and paid applications, courses, or materials was considered difficult to achieve depending on their place of residence and their family's financial situation. That is why the creation of free applications^{[41][43][44]} not subjected to Internet connection was recommended^{[2][45][46]}.

2.2. Learning the Needs of Refugee Students

Due to the challenges which refugees face in their education, more support (e.g., scaffolding) is suggested in teaching new learning content^[47]. Moreover, refugee students may need more scaffolding to navigate or handle electronic learning resources, since some may lack digital literacy skills. According to Ahad and Benton^[52], mobile learning offers tools for creating personalized learning environments with adequate support for refugee students. Scaffolding appears to reduce the risk of cognitive overload and helps to overcome barriers, such as the differences in refugees' socio-cultural backgrounds and the lack of necessary skills and knowledge^[47]. This view seems consistent with Demmans Epp's research^[48], which highlighted the need to create mobile learning applications that guide refugee or immigrant students to a cognitive and metacognitive level.

4.3. Emotional and Socio-Cultural Needs of Refugee Students

One of the solutions proposed for refugee students, in order for their education's cognitive outcomes to be raised, was the creation of multilingual applications in their native language^[51]. Furthermore, research conducted on mobile-learning disadvantages showed adverse effects of mobile learning when one-on-one teaching methods (i.e., one student per

mobile device) were applied, such as loneliness and marginalization^[53]. Other research highlighted the importance of the need for socialization among refugee students—even more than among locals—in order to quickly achieve their integration into the new society^{[54][41][43]}. The above mobile learning's disadvantages, combined with the need of refugee students to socialize with the locals, could be overcome by creating mobile learning applications that enhance the interaction between refugee students with their teacher, classmates, or the local population. Although in most mobile learning applications, refugee students were asked to work and acquire new knowledge individually. Two models have been proposed in the reviewed literature to address the growing need of refugee students for socialization in conjunction with mobile devices' extensive use: (i) the “mixed model” or “blended learning” model, in which the use of mobile learning is combined with the traditional form of teaching^{[47][55][56]}, and (ii) the collaborative learning model in which users have to collaborate within the app^[50].

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