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# EdTech for Contexts of Forced Displacement

## A Rapid Evidence Review

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# About this document

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# Abbreviations and acronyms

| | |
|---|---|
| **CWTL** | Can't Wait to Learn |
| **FCDO** | Foreign, Commonwealth and Development Office (UK) |
| **GEM** | Global Education Monitoring |
| **GPE KIX** | Global Partnership for Education Knowledge and Innovation Exchange |
| **ICT** | Information and communication technology |
| **IDP** | Internally Displaced Person |
| **IRC** | International Rescue Committee |
| **INEE** | Interagency Network for Education in Emergencies |
| **MOOC** | Massive Open Online Course |
| **NGO** | Non-governmental organisation |
| **TPD** | Teacher Professional Development |
| **UNHCR** | United Nations High Commissioner for Refugees |

# Executive summary

This Rapid Evidence Review provides a synthesis of recent evidence relating to the implementation of EdTech programmes, platforms, and devices for learners in contexts of forced displacement. The main aim of the review is to provide education decision-makers, funders, and implementers (among others) with a clear picture of which interventions may be the most effective in these contexts and, crucially, which implementation decisions facilitate or hinder this effectiveness.

For this review, we reviewed evidence generated between 2019 and 2024 on EdTech implementations in different contexts of forced displacement. We focused on implementations aimed at primary- and secondary-age learners, as well as their teachers and caregivers.

Following a two-step screening process involving relevance and quality checks (see Section 2), 43 sources were identified for analysis. During the thematic analysis process, data was organised according to the following themes:

- The benefits of EdTech in displacement contexts
- Design and implementation characteristics of successful EdTech interventions in displacement contexts
- Barriers that impede the successful implementation of EdTech in displacement contexts.

## Key findings on the benefits of using EdTech in displacement contexts

- EdTech can increase access to learning, especially through mobile devices and in the period immediately following displacement.
- EdTech can facilitate improved learning outcomes, notably in passive additional language learning skills.
- EdTech is associated with increased motivation, with much of the evidence emerging from interventions involving gamified apps.
- EdTech may support displaced learners psychologically and help develop socio-emotional skills.
- EdTech can provide effective teacher support.

- EdTech can contribute to gender equity.
- Harnessing technology can lead to improved refugee education data.

## Key findings on design and implementation characteristics of successful EdTech interventions in displacement contexts

- EdTech should be designed as an integrated component within programmes, not as a solution in itself.
- Co-creation with displaced communities is an important success factor.
- Game-based approaches are a promising option for designers to consider.
- Programmes should make use of the technology most available to displaced populations.
- Online learning is not always appropriate to the needs of displaced learners, but may be most effective when conducted in small groups.
- The introduction of EdTech should be accompanied by comprehensive teacher professional development.
- Sustainable financing is fundamental and could be supported by multi-funder collaborations.

## Key findings on barriers that impede the successful implementation of EdTech in displacement contexts

- Many displaced learners lack access to necessary resources, including reliable electricity, the internet, and devices.
- Some displaced learners, as well as teachers and caregivers may lack the digital literacy required to benefit from EdTech.
- Gender-based barriers prevent female displaced learners from benefiting from EdTech.
- Some policy and legal frameworks do not support displaced learners' access to EdTech because they do not support their inclusion within host country education provision more broadly.

# 1. Introduction

EdTech Hub's goal is to ensure that EdTech contributes to improving learning outcomes for children worldwide, regardless of their location or circumstances. We partner with national governments and the global education sector to build systems that can sustainably integrate EdTech into education policy and practice. We do this by building the evidence base around EdTech, including what works and under what conditions.

In 2020, EdTech Hub published a Rapid Evidence Review of literature relating to the use of technology within refugee education (↑Ashlee et al., 2020). Since then, increasingly frequent and severe natural disasters and escalating conflicts (↑UNESCO, 2024) have caused the number of forcibly displaced people around the world to soar from 82.4 million in 2020 to a staggering 122.6 million in 2024 (↑UNHCR, 2024). Considering the rapid evolution of technology in recent years, there is a clear need for a renewed understanding of how EdTech can be harnessed effectively to support the rising numbers of forcibly displaced populations, including refugees, internally displaced people (IDPs), and asylum seekers.

## 1.1 Aim of the Rapid Evidence Review

The overarching aim of this Rapid Evidence Review is to provide education decision-makers, funders, and implementers (among others) with a clear picture of the most up-to-date evidence relating to the use of EdTech within contexts of forced displacement. Within this, the specific aims are to:

- Synthesise available data on the effectiveness of EdTech in displacement contexts, highlighting examples of programmes, platforms, and devices supported by robust evidence.
- Present evidence relating to the feasibility of EdTech implementation in displacement contexts, including data on contextual appropriateness or readiness and potential challenges.

## 1.2 Scope and key definitions

The review adopts the following definitions:

**Forcibly displaced:** People who have been forced to flee their homes for any reason, including natural disasters, violent conflict, or political instability. These may include IDPs, who are displaced within their country of origin, and refugees and asylum-seekers who have been displaced to

another country. The definition may also include people in refugee-like situations and others needing international protection (see ↑Migration Data Portal, 2024 for more detail). We also use the term 'refugee' in instances where the source text alludes to refugees specifically.

**Education in contexts of forced displacement:** Building on the definition of 'forcibly displaced' above, we have borrowed from the Inter-agency Network for Education in Emergencies (↑INEE, 2024) definition of education in emergencies. Therefore, we define education in contexts of forced displacement as the quality of current and future learning opportunities for children of primary- and secondary-level age in situations of forced displacement, including non-formal education. It is important to note that INEE's definition includes early childhood and adult education, but given the rapid nature of this review, it has been necessary to narrow the scope.

**EdTech:** Educational technology. "Technologies—including hardware, software, and digital content—that are either designed or appropriated for educational purposes" (↑Hennessy et al., 2021, p. 8).

## 1.3 Review structure

We present our methodological approach below in Section 2, including details of the literature search strategy, the inclusion criteria, and methodological limitations. Section 3 includes detailed findings under the three themes that emerged from a thematic analysis of the identified literature. Finally, Section 4 draws together key learnings from the evidence reviewed.

# 2. Methodology

The methodological approach is informed by the Cochrane Collaboration Rapid Reviews Methods Group guidance on producing rapid reviews (↑Garritty et al., 2021). This permits a rigorous and systematic approach while defining the scope narrowly enough so that it can be completed within a rapid time frame. The details of this approach are presented in this section.

## 2.1 Search and screening process

The research process comprised a systematic sequence of searching and screening conducted on Google Sheets. The first step in locating relevant materials for review was defining the inclusion criteria. To be included, sources had to:

- relate to both EdTech and education in contexts of displacement as defined above;
- relate to primary- or secondary-level education (formal and non-formal options);
- have been published between 2019 and 2024;[1]
- be academic or grey literature, but must have been published or endorsed by a recognised academic, governmental, or non-governmental organisation;
- contain evidence indicating the effectiveness of an EdTech intervention or the suitability or feasibility of EdTech use in a particular context.

Keywords relating to EdTech in contexts of forced displacement were then combined into comprehensive search strings (see Annexe), which were then input into both Google Scholar and the main Google search engine to capture both academic and grey literature. Given that programme data is often published as reports rather than journal articles and the fact that the most recent data may not be available in journals due to lengthy review processes, it was considered necessary to include grey literature within the search criteria.

[1] The research team felt that beginning from 2019 would enable them to incorporate any sources that were missed by the previous Rapid Evidence Review because they were still in the process of being published.

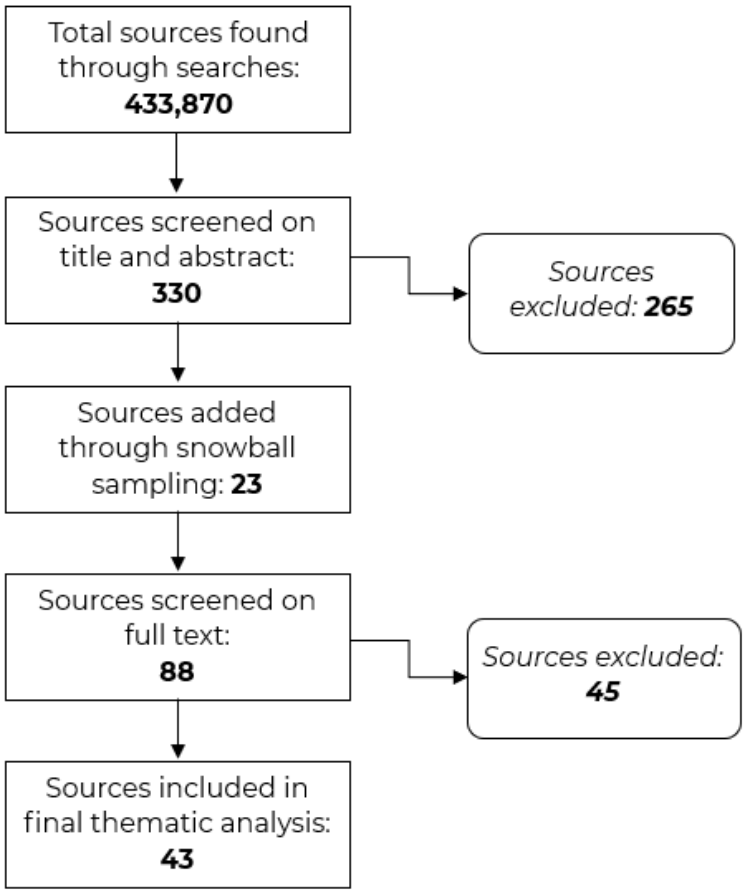
In the first round of screening, titles and abstracts (or introductions) of the search results were screened according to the inclusion criteria, with relevant results recorded in Google Sheets until no new relevant hits were recorded for at least two pages. Additional sources were added to the search results through snowball sampling.

All sources meeting the inclusion criteria were then screened for a second time. In the second round of screening, the source content was assessed for quality: the research team evaluated the rigour of the methodology adopted, the accuracy of spelling and grammar used, and the reputability of the authoring and/or publishing organisation.

Sources scoring highly in all three areas were then analysed in full according to an analytical framework in Google Sheets. The framework was developed according to the research questions and also informed by patterns noted during the screening process.

The results of the two-stage screening process are summarised in Figure 1 below.

**Figure 1.** *Search and screening results*



## 2.2 Limitations

This Rapid Evidence Review has four fundamental limitations, namely:

1. Searches surfaced several sources relating to higher education and lifelong learning. However, these have not been included in this review, which is limited to sources relating to children of primary and secondary school age due primarily to time constraints. Future reviews should explore the body of literature relating to adult education.

2. Some sources initially identified as relevant were of too low a quality to be included — either their methodology was not robust, the spelling and grammar used were inaccurate to the point of impeding communication, or they were not hosted by reputable institutions or published within recognised or peer-reviewed publications.

3. Lack of robust data. A significant number of the sources identified through the searches contained information about how EdTech has been used with forcibly displaced populations. However, very few contained any indication of how effective these interventions had been. Many sources that looked promising at first glance ultimately had to be excluded for this reason. This gap underscores an urgent need for empirical data on EdTech in contexts of forced displacement.

4. There is a noticeable concentration of more detailed data in a limited number of sources. Data that is available primarily relates to user responses to gamified apps, while sources relating to other themes, such as EdTech integration within teaching, are much more scarce. This has led to an imbalance in how often different sources are mentioned throughout the analysis.

# 3. Thematic analysis

This section begins with an overview of the literature reviewed, which is classified by:

- Type of source
- Type of data and methodology
- Focus context.

We then present the review findings by the three themes identified:

- The benefits of EdTech in displacement contexts
- Design and implementation characteristics of successful EdTech interventions in displacement contexts
- Barriers that impede the successful implementation of EdTech in displacement contexts

## 3.1 Overview of the analysed sample

Details on the source types, focus contexts, and methodologies for the 43 sources that made up the final sample are given below.

- **Type of source:** 20 were reports, 17 were journal articles, 4 were online articles/blogs, 1 was a conference paper, and 1 was a thesis.
- **Focus context:** In addition to literature reviews that focused on various locations, sources focused specifically on 21 countries. The most frequent focus countries were Jordan (6 sources), Lebanon (6 sources), Bangladesh (4 sources), and Greece (3 sources).
- **Methodology:** A significant proportion of the sources reviewed (19) are desk reviews that incorporate and analyse secondary data. Of the 24 sources that include primary data, five are quasi-experimental, with the remaining sources comprising a combination of qualitative and quantitative surveys, interviews/focus groups, and case study approaches.

Finally, while the Covid-19 pandemic did not dominate the literature in the same way that it did for the Rapid Evidence Review on Education in Emergencies (↑Barnes et al., 2025), displaced learners' interactions with EdTech during the pandemic were the focus of 12 of the 43 sources. Care

has been taken to ensure that our analysis is clear about when a source relates specifically to EdTech use during the Covid-19 pandemic, arguably an atypical learning context due primarily to the isolation with which it is associated in the literature.

## 3.2 If implemented well, what are the benefits of using EdTech in displacement settings?

This section highlights how different forms of EdTech might benefit displaced learners according to the literature. Three of the more frequently mentioned interventions are also described in more detail (see Boxes 1, 2 and 3).

### EdTech can increase access to learning

The literature frequently refers to the potential of EdTech to increase access to learning opportunities for displaced children. Many of these references relate to mobile technologies (typically mobile phones and tablets), which may be especially useful for sustaining learning in displacement contexts due to their portability (↑Dahya et al., 2019; ↑Drolia et al., 2020; ↑UNESCO, 2023) and capacity to overcome geographic limitations (↑Dreesen et al., 2021; ↑Drolia et al., 2020; ↑Samsari et al., 2024). In the case of the Akelius programme (see Box 1 below) for refugees in Lebanon, ↑Dreesen et al. (2021, p. 25) note that:

> *"[...] attendance at remote classes was higher than for in-person classes [...] students that live in harder-to-reach areas, or older students who work, were more able to attend."*

Other related benefits include the capacity of mobile technologies to provide asynchronous learning so that displaced learners can learn at times that are convenient for them (↑Drolia et al., 2020) and the ability of internet-enabled devices to overcome issues around resource access typical to displaced populations (↑Cueto et al., 2023; ↑UNESCO, 2023). Additionally, two sources identify the potential of mobile technologies to facilitate the scaling of learning programmes due to high levels of ownership of these devices, even within marginalised communities (↑UNESCO, 2023), including SMS or WhatsApp-based AI chatbots (↑IRC), 2024).

**Box 1:** *The Akelius Digital Learning Initiative*

The Akelius Digital Learning Initiative was launched by UNICEF in 2018. It is currently active in 12 countries, in both informal and formal education settings. The app can be used autonomously; however, UNICEF provides technical and pedagogical support to education centres and teachers who wish to deploy it within broader instruction. It aims to provide additional language learning support for marginalised children, including refugee learners. Four instances of the Akelius digital learning application that aim to benefit displaced learners in particular have been evaluated: in Bosnia and Herzegovina, Greece, Italy, and Lebanon.

The 11 language courses offered through the digital application are free and contain multimedia content structured around thematic chapters. These comprise different interactive lessons focusing on drills, vocabulary practice, games, songs, grammar, and quizzes. The application is gamified; learners gain virtual coins that can be traded in exchange for accessories for their digital avatar (↑UNICEF Innocenti, 2024).

There are also suggestions that EdTech could help in contexts where refugee influxes may strain host country education systems. Based on the Egyptian national education system's experience during the pandemic, mobile technologies have the potential to solve the problem of overcrowded classrooms:

> *"A rescheduled timetable involving less time in school buildings and more time studying at home is a model that could work in other countries where capacity is a barrier to finding refugees a place in school – provided that the connectivity exists to support it"* (↑UNHCR, 2020, p. 341).

↑Hallgarten et al. (2020) cite an evaluation of double-shifting in Turkey that found that it increased educational access for Syrian refugees. However, they also highlight that other evaluations suggest links between double-shifting, child labour, potential segregation between ethnic groups, and exclusion of low-income learners. They suggest that EdTech could be an important tool used "to announce, organise and monitor double-shifting or to provide students with materials and exercises for self-study in the times that they are not present at school" (↑Hallgarten et al., 2020, p. 11).

There are also suggestions that EdTech may be especially useful for displaced learners in the period immediately following their arrival in their

new context due to its potential for immediate deployment and autonomous use (↑Imagine Worldwide, 2023; ↑IRC, 2024; ↑Poleschuk et al., 2023a and 2023b; ↑UNESCO, 2023; ↑UNICEF Innocenti, 2024). Reports from the different implementations of the Akelius programme place particular emphasis on this aspect; students can be introduced to the tablet-based programme quickly upon refugee students' arrival (↑UNICEF Innocenti, 2024) and can provide learners with instant productive and autonomous activities while they wait for the individual teacher attention they need (↑Poleschuk et al., 2023a). The interactive and visual components of the programme are also helpful for addressing language barriers, which are most pronounced in the early days post-displacement (↑Poleschuk et al., 2023b).

Finally, two sources suggest that EdTech can increase educational access to caregivers and learners. Caregivers interviewed by ↑Galliver et al. (2021) reported that engagement with remote learning platforms during the Covid-19 pandemic had enabled them to support their children's education better. As one Iraqi caregiver reported, "With the knowledge I gained from these lessons, I can now make sure that my daughter continues her education to a higher level." (↑Galliver et al., 2021, p. 6). This was also the case for the Akelius implementation in Lebanon, where education coordinators reported seeing caregivers taking part in the classes with their children and learning from the app (↑Dreesen et al., 2021).

## EdTech can facilitate improved learning outcomes

There is a growing body of robust evidence supporting the effectiveness of different forms of EdTech in displacement contexts, though impact data is still lacking for many interventions. Short Message Service- (SMS) or WhatsApp-based learning such as M-Shule in Kenya and (later expanded to other sub-Saharan contexts—(↑UNESCO Institute for Lifelong Learning et al., 2022), EduApp4Syria (↑Kabir, 2022), ENEZA Supavu291 in Kenya (↑Kabir, 2022), the Can't Wait to Learn programme (CWTL—see Box 2 below) in Chad and Lebanon (↑GPE KIX, 2024; ↑Turner et al., 2022) the 'Feed The Monster'app in Jordan (↑Burde et al., 2023), and the AudioClass System in Colombia (↑IRC, 2024) are all associated with improved learning outcomes. Specifically, EduApp4Syria is associated with gains in oral reading fluency and CWTL in Lebanon resulted in significant learning gains in numeracy (↑Turner et al., 2022). However, an evaluation of the CWTL implementation in Jordan found equal learning gains in reading and maths among learners receiving instruction through the CWTL programme and children receiving the standard curriculum in formal education settings, which the authors

attribute to a number of operational challenges (↑De Hoop et al., 2019). Qualitative data on Feed the Monster in Jordan indicates that the app improved foundational literacy skills among Syrian refugee children (↑UNESCO, 2023). However, the quantitative data was less conclusive (↑Burde et al., 2023). The specific processes and decisions that may be responsible for some of these outcomes are explored in Section 3.3.

**Box 2.** *The 'Can't Wait to Learn' gamified learning programme*

Can't Wait to Learn is a gamified learning programme delivered via tablets and mobile devices by War Child Holland and partners across eight countries. It has been deployed in both formal and non-formal education settings, with the intention of being mediated by teacher-facilitators. It offers numeracy and literacy content aligned with national curricula, is accessed through a game world, and can be used both online and offline.

As they navigate the game world, learners have opportunities to play narrativised mini-games, watch videos, and check their progress. Learners can access new levels of difficulty as they complete the mini-games and earn rewards and feedback as they do so. Can't Wait to Learn is contextualised for learners in each implementation location by using characters and environments that look familiar to learners in each context (↑Turner et al., 2022).

There are also several indications that EdTech may increase additional language learning outcomes for displaced learners (↑Bizota & Papadopoulou, 2024; ↑Samsari et al., 2024). Much of this relates to the various implementations of the Akelius programme, which resulted in language learning gains across all four skills (listening, reading, speaking, writing) in all contexts for which evaluations were available (↑Dreesen et al., 2021; ↑Karamperidou et al., 2020; ↑Poleschuk et al, 2023a and 2023b). The implementations in Greece and Italy were associated with particularly strong gains in productive skills, with the former resulting in the greatest gains in writing and speaking and the latter in speaking. ↑Poleschuk et al. (2023a, p. 20) attribute this success to the game's "strong focus on audio content, speech, songs and exercises, which encourage students to practice speaking words out loud." However, qualitative data from the evaluation in Bosnia and Herzegovina indicates that reading and listening are more reinforced by the digital learning application than speaking and writing. The reason for this divergence is unclear, but may be attributed to the different delivery methods applied in each case (see Section 3.3).

## EdTech is associated with increased motivation

The literature suggests that EdTech in different forms may have significant motivational value in displacement contexts. In some contexts, the mere presence of EdTech devices and programmes appears to be motivating. Examples are digital readers for refugees in Tanzania and the Instant Network Schools implementation in Kenya's Dadaab refugee camp, which includes the provision of multiple devices and connectivity mechanisms (↑Bock et al., 2020). In the Za'atari refugee camp in Jordan, the TIGER programme's introduction of low-cost tablets reportedly helped girls to stay in school and increased their motivation to learn (↑UNESCO, 2023).

Gamified offerings emerged as a particularly motivating format. Evidence that War Child Holland's digital game-based CWTL programme had this effect on learners was present in three of the sources reviewed, relating to implementations with refugees in Chad (↑GPE KIX, 2024), Lebanon (↑Turner et al., 2022, and Uganda (↑UNESCO, no date). Curious Learning's 'Feed the Monster' literacy learning app was also found to increase the engagement of Syrian refugees in Jordan (↑Burde et al., 2023). Similarly, UNICEF's Akelius programme has been proven to motivate refugee learners in Greece and Italy (↑Poleschuk et al., 2023b; ↑Karamperidou et al., 2020).

**Box 3.** *The Feed the Monster app*

Apps Factory developed the Feed the Monster app for entry into the EduApp4Syria competition in 2016 (which it subsequently won). Originally aimed at improving first-language literacy outcomes for displaced Syrian learners, the app was later acquired by Curious Learning[2] and now offers literacy content in a wide range of languages. It is designed for autonomous play.

The app is gamified, introducing learners into a fantasy world in which they have to help friendly monsters grow by feeding them eggs, which they earn by completing various literacy-based tasks. The game was developed with the explicit intention of supporting learners' psycho-social well-being; the game is therefore based on ideas of positivity, nurture, comfort, and predictability (↑Koval-Saifi & Plass, 2018)

The motivational potential of game-based learning programmes is attributed to features enabling learners to focus on a goal and monitor their progress. Interviews with teachers conducted by ↑Karamperidou et al. (2020) on the Akelius programme (see Box 1) in Greece suggested that the "introduction of increased difficulty levels for games, and the instant

[2] See https://www.curiouslearning.org/ for further details. Retrieved 27 March 2025.

feedback and scoring that the programme provides at the end of a lesson, were particularly useful in keeping students motivated and engaged" (↑Karamperidou et al., 2020, p. 27). Similar feedback was given in the Italian context, with ↑Poleschuk et al. (2023a) adding that students are motivated by the "visible progress indicators" provided by the Akelius app (p. 23). In parallel, ↑Turner et al. (2022, p. 98) note that "[the children] wanted to see the end of the game. They wanted to reach a goal". However, evidence from the CWTL implementation in Lebanon and use of the Feed the Monster app in Jordan suggests that this motivational aspect might diminish if the games become too repetitive; learners in ↑Turner et al.'s (2022) study reportedly became frustrated and bored after repeatedly playing the same games, while the Feed the Monster app was met with "declining interest over time" (↑Koval-Saifi & Plass, 2018 in ↑Burde et al., 2023, p. 42).

## EdTech may support displaced learners psychologically and help develop socio-emotional skills

Evidence suggests that EdTech may have a role to play in supporting displaced learners in the overlapping areas of psychosocial well-being and socio-emotional development. Regarding the first of these, evidence is somewhat mixed. While the EduApp4Syria reportedly led to psychosocial improvements (↑Kabir, 2022), the quantitative data relating to this aspect within Curious Learning's 'Feed the Monster' was inconclusive (↑Burde et al., 2023), and an evaluation of the CWTL implementation in Jordan showed no statistically significant increases in psychological well-being (↑De Hoop et al., 2019).

However, there is also evidence to suggest that some EdTech offerings may have positive impacts on specific aspects of displaced learners' well-being. In their recent analysis of gamified approaches, ↑Bizota & Papadopoulou (2024, p. 61) note that certain gamified features reinforce feelings of joy and pleasure that "may contribute to a reduction in emotional symptoms". ↑UNICEF Innocenti (2024, p. 20) also point to the value of providing a game world in which refugee children can "forget a bit about the world around them, where they live: in hotels with their mothers as refugees". Finally, the creators of the Gobee digital assessment app noted that the game-based approach introduced an element of fun that appeared to alleviate stress for Syrian refugee children (↑War Child Holland et al., 2022).

Several sources indicate that EdTech can improve displaced learners' confidence in education (↑Poleschuk et al., 2023a and 2023b; ↑UNICEF

Innocenti, 2024). Especially in the early stages post-arrival in their host country, when learners' confidence is likely to be particularly low, the Akelius app creates a private space to improve: "If they make a mistake with the tablet, no one will hear it, no one will see it." (↑UNICEF Innocenti, 2024, p. 63). Relatedly, qualitative data from ↑Turner et al.'s (2022) study suggests increases in self-esteem associated with the CWTL implementation in Lebanon, which the authors attribute to the independence afforded to learners (though issues with the validity of the psychometric instrument used meant that quantitative data could not reliably support this).

The literature highlights two socio-emotional skill areas that EdTech may be particularly effective at developing: learner autonomy (↑Drolia et al., 2020; ↑Dahya et al., 2019; ↑Dreesen et al., 2021; ↑Galliver et al., 2021; ↑Poleschuk et al., 2023a; ↑UNESCO, 2023) and social interaction (↑Poleschuk et al., 2023b; ↑Turner et al., 2022; ↑UNESCO, 2023; ↑UNESCO, no date). In relation to general internet access during the Covid-19 pandemic, learners in ↑Galliver et al.'s (2021) study reported positive experiences of finding new information for themselves via YouTube, while ↑Dreesen et al. (2021) and ↑Poleschuk et al. (2023a) both highlighted interview evidence suggesting that refugee learners who used the Akelius app improved their autonomy and self-reliance to learn.

Meanwhile, increased peer interaction was repeatedly reported as a benefit of gamified approaches; in the cases of the Akelius implementation in Italy and CWTL in Lebanon and Uganda, study authors noted increases in learner collaboration and support. ↑Turner et al. (2022, p. 98) noticed "strengthened social bonds and collaboration among the children, the development of friendships, and healthy competition" during the CWTL implementation in Lebanon, while ↑Poleschuk et al. (2023b) and ↑UNESCO (no date) noted a particular increase in cohesion between refugee and host community learners thanks to their implementations of the Akelius app in Italy and CWTL in Uganda respectively:

> *"The application's gamified nature also prompted social interaction between students from different backgrounds. Students constantly compared the number of virtual coins they had earned through the application, which are provided as points for completing lessons. Likewise, students were also observed frequently supporting other students to earn more coins.* (↑Poleschuk et al., 2023b).

## EdTech can provide effective teacher support

A group of studies focused on the potential benefits of EdTech within teacher professional development (TPD) in displacement settings (↑Cueto et al., 2023; ↑Dahya et al., 2019; ↑Hallgarten et al., 2020; ↑Jordan, 2023; ↑Kabir, 2022; ↑Kennedy & Laurillard, 2019; ↑UNESCO, 2023). These benefits tended to relate to the enhanced possibilities for peer learning and communication between teachers that EdTech creates (how this can be done well is explored in Section 3.3). ↑Kennedy & Laurillard (2019) established that massive open online courses (MOOCs) held considerable potential for TPD with teachers in Lebanon, primarily due to the access they can provide "to the views and support of other learners" (p. 149). Similar benefits were identified by ↑Motteram et al. (2020) in the Jordanian context, where a group of 27 Syrian English teachers attended a TPD course run by the British Council involving peer support WhatsApp groups. The WhatsApp group element:

> "[...] *provided a platform for them to share and discuss issues related to the challenges of their particular context, enabled them to contribute to the development of some teaching materials and begin to address some of the issues they had in a meaningful way.*"( ↑Motteram et al., 2020, p. 5731 in ↑Jordan, 2023, p. 285)

In addition to enhanced communication, there are indications that EdTech may also usefully serve as a direct source of pedagogical skills and knowledge development. The 2023 UNESCO GEM report highlights the case of the Teachers for Teachers initiative in the Kakuma refugee camp in Kenya, which "uses real-time reporting through text messages and email, classroom observations and summaries to organize training and mentoring for teachers" (↑UNESCO, 2023, p. 175). ↑Hallgarten et al. (2020) report on the same initiative, highlighting "increased preparation, confidence and pedagogical knowledge among teachers" as well as "improvements in [teachers'] non-academic roles with regard to child protection and positive discipline" (↑Hallgarten et al., 2020, p. 16).

Finally, there are indications that EdTech can provide access to a range of tools that can make teachers' jobs easier practically (↑Cueto et al., 2023; ↑IRC, 2024; ↑UNESCO Institute for Lifelong Learning et al., 2022). ↑Adeniran et al. (2023) observe that mobile technologies, in particular, have "helped to provide teachers in refugee settings with access to curriculum, language instruction, lesson plans, SMS support, content delivery, virtual coaching, and even their salaries" (↑Adeniran et al., 2023 in ↑Cueto et al., 2023, p. 37). In parallel, the reporting system element of the M-Shule implementation in

Kenya reportedly improved [teachers'] own classroom planning and confidence in their decision-making, while reducing time spent on administrative tasks" (↑UNESCO Institute for Lifelong Learning et al., 2022, p. 169).

## EdTech can contribute to gender equity

Though there continue to be well-founded concerns about technology's potential to exacerbate gender divides (see Section 3.4), the literature suggests that EdTech may have an important role to play in helping to achieve educational equity for female and male displaced learners. These benefits can be identified across a range of EdTech devices and modalities. Mobile technologies and, crucially, the communicational opportunities they present were identified by ↑Dahya et al. (2019) and ↑Kabir (2022) based on their observations in the Dadaab refugee camp in Kenya. ↑Dahya et al. (2019) note the value of transnational group chats on instant messenger between refugee teachers and Canada-based instructors, which "inform and interrupt social practices and cultural norms in support of girls going to school and potentially for women teachers in Dadaab and Kakuma" (p. 25). Meanwhile, ↑Kabir (2022) reports that female refugees "identified mobile technology as key to building supportive peer networks, which in turn expanded aspirations for higher education for girls in refugee camps" (p. 17).

Two accounts of tablet-based interventions supporting gender equity were also identified. A recent report by ↑UNESCO (2024) highlights that providing access to digital resources through low-cost tablets in the Za'atari refugee camp in Jordan increased girls' confidence and motivation to stay in school, led to improved learning outcomes, and helped bring out-of-school adolescent girls back into the education system. The implementation of CWTL in Chad, a gamified, tablet-based offering, also reportedly led to girls learning "four times more than boys. Girls started with lower numeracy skills compared to boys but caught up in just 4 to 4.5 months" (↑GPE KIX, 2024).

Finally, a report from Malaysia during the Covid-19 pandemic indicates that online learning may be considered a safer option than sending girls to school for some caregivers, leading to increased education access for these female learners:

> "[...] *some of these parents understand the need for education, but they are just so concerned about safety and security. So, when education is brought*

> *to the community, at their homes, then the parents are okay with the girls participating"* (↑Loganathan et al., 2021, p. 11).

### Harnessing technology can lead to improved refugee education data

Technology may be used to strengthen education systems beyond the classroom itself. This appears to have been the case for two different implementations in which technology has successfully strengthened data systems that are essential to informing education programming for displaced populations. The first is a custom application developed by the non-profit FHI 360 for UNHCR, which facilitates the collection of refugee data in camps and host communities in Kenya, Ethiopia, Rwanda, and Malaysia (↑Kabir, 2022). It is worth noting that the app increased possibilities for data collection at the school level because it was accessible through local mobile networks, which "allowed teachers and other members of the community to support the process" (↑Hallgarten et al., 2020, p. 7). Elsewhere, in the context of the current war in Ukraine, ↑Londar & Pietsch (2023, p. 47) highlight how programmes such as Google Analytics have been used to great effect to "locate displaced students, address their educational needs, and develop interventions to provide support".

## 3.3 How should EdTech be designed and implemented to ensure effectiveness for displaced populations?

It is important to bear in mind that none of the successes identified in Section 3.2 can happen in a vacuum and that they depend on careful and contextually appropriate design and implementation decisions. Some of these decisions that were identified in the literature are discussed below.

### EdTech should be designed as an integrated component within programmes, not as a solution in itself

There is acknowledgement across the literature that, while EdTech on its own may plug immediate gaps in educational provision for displaced learners in the short term, it must be used in conjunction with broader interventions in the long term. Specifically, it should be regarded as a support to (rather than a replacement for) education practitioners on whom the success of education interventions ultimately depends (↑Akhtar & Keeney, 2024; ↑Bock et al., 2020; ↑Loganathan et al., 2021; ↑Menashy & Zakharia, 2019; ↑Poleschuk et al., 2023a and 2023b; ↑Samsari et al., 2024;

↑UNESCO, 2023). For example, ↑Bock et al. (2020) note that when digital readers were distributed to refugees in Tanzania as part of a collaboration between UNHCR and WorldReader, learners who had not received much, or any in-person English instruction, did not perform as well as those who had, suggesting that success was at least partially dependent on direct instruction beyond the intervention. In Thailand during the Covid-19 pandemic, the Bangkok Asylum Seeker and Refugee Assistance Network sent refugee learners links to online education resources such as BBC Bitesize and Khan Academy, but "without subject-specific teaching support, the students faced difficulties understanding the content and staying motivated" (↑Akhtar & Keeney, 2024, p. 9). Elsewhere, evaluations of the Akelius implementations in Italy and Bosnia and Herzegovina found that refugee learners achieved greater learning gains in passive language skills (reading and listening) compared to writing and speaking, indicating that use of the app should be combined with additional instruction to develop active skills. As one refugee learner who used Akelius in Italy commented,

> *"I would just like to practise speaking more, and to talk to teachers, working on things together. I don't need tablets and things like that.* (↑Poleschuk et al., 2023a, p. 19).

## Co-creation with displaced communities is an important success factor

There are numerous references in the literature to the importance of ensuring that EdTech is contextually relevant by designing it in collaboration with the displaced communities whom the technology aims to serve (↑Assaf & Taylor, 2022; ↑Bizota & Papadopoulou, 2024; ↑Drolia et al., 2020; ↑GPE KIX, 2024; ↑Kennedy & Laurillard, 2019; ↑Taftaf & Williams, 2019; ↑Turner et al., 2022). As ↑Drolia et al. (2020) note, technologies that may carry functional benefits for refugees "may be ineffective as learning tools if they are "decontextualized from the learning context". Co-creation is a distinguishing feature of the various implementations of CWTL, to which much of the programme's success is attributed:

> *"War Child conducted workshops in local communities where they facilitated artistic sessions for children to share their stories and ideas with local artists. These narratives and designs were then woven into the Can't Wait to Learn program, enriching it with the children's perspectives and creativity* [...]. *The success is in large part because recognizing their own community and context in the learning content is very meaningful and motivating to children"* (↑GPE KIX, 2024).

In parallel, a criticism of the Kolibri platform, which hosts a substantial open digital education product library, is that much of the content is not contextualised to specific groups of learners, which reduces its relevance for those learner communities (↑Assaf & Taylor, 2022). A collaborative approach whereby educators in different contexts upload their own content has been proposed as a solution to this issue; indeed, this approach has reportedly been successful in Tanzania, where:

> "[...] *between 40 percent to 70 percent of the content available on their instance of Kolibri* [...] *was not suitable for Burundi and Congolese students [who follow their home country curriculum]. As a result, Burundian and Congolese teachers routinely upload content to Kolibri Studio that is relevant for their national curricula*" (↑Assaf & Taylor, 2022, p. 28).

While this constitutes a notable success case, it also raises questions about how quality control and approvals might be managed, especially in contexts where displaced learners follow the national curriculum of the host country.

## Game-based approaches are a promising option for designers to consider

In addition to the various examples of effective gamification discussed in Section 3.2, some sources identified specific elements within gamification that may render it particularly effective for use with displaced populations. In their respective reviews of education interventions for refugee learners, ↑Bizota & Papadopoulou (2024) and ↑Burde et al. (2023) both suggest that providing feedback for learners is crucial to the success of gamified products, as it enables learners to monitor their own progress. The authors also emphasise the importance of learner autonomy, with ↑Bizota & Papadopoulou (2024, p. 61) terming this "freedom of choice" and ↑Burde et al. (2023, p. 10) referring to this as a "sense of control". Other significant features for gamified product designers to consider include a narrative/storytelling element, challenges/levels, collaboration (↑Bizota & Papadopoulou, 2024), effective rewards, and creating a sense of achievement (↑Burde et al., 2023). Echoing subthemes identified elsewhere in this review, they also highlight multilingualism, a psycho-social well-being focus, and a co-design element as key success factors within gamified approaches.

One challenge, highlighted by ↑Poleschuk et al. (2023b) with the Akelius implementation in Bosnia and Herzegovina, is how to maintain these key features in contexts where internet connectivity is limited or unavailable.

For example, the Akelius programme's coin collection feature (a key motivational component) is unavailable in offline mode (↑Poleschuk et al., 2023b), which may reduce its effectiveness for learners in offline contexts.

A final element, which is not unique to gamification but is nevertheless a core feature of it, is audiovisual scaffolding. This is identified as an effective design feature of the Akelius implementations that facilitates positive language learning outcomes in particular (↑Dreesen et al., 2021; ↑Karamperidou et al., 2020; ↑Poleschuk et al., 2023a and 2023b. Audiovisual support is considered especially important in the early stages of language acquisition (i.e., when refugees are new arrivals in their host country), when learners must rely more heavily on non-verbal cues to facilitate their understanding. This also reduces the need for translation from refugees' first languages, of which there may be many in a single classroom or school (↑Poleschuk et al., 2023a).

### Programmes should make use of the technology most available to displaced populations

A guiding principle for designers of EdTech interventions for displaced populations is to harness technology that is already familiar and available to the learners in question. Several sources (↑Burde et al., 2023; ↑Drolia et al., 2020; ↑Kasper, 2023; ↑Taftaf & Williams, 2019) highlight that the ubiquity of mobile technologies compared to other forms of technology makes them an obvious choice of device around which to design an EdTech intervention for refugees, both in urban and camp settings. For example, an evaluation of the Feed the Monster literacy app, when implemented with Syrian refugees in Jordan, found that "The high rate of smartphone use among parents also had promising implications for the widespread download and use of the games" (↑Koval-Saifi & Plass, 2018 in ↑Burde et al., 2023, p. 42).

### Online learning is not always appropriate to refugees' needs, but may be most effective when conducted in small groups

There are several indications from the literature that programme designers should exercise caution when considering purely online, remote modalities as part of education programmes for displaced learners. Several accounts, many from the Covid-19 context, emphasise the reliance of new arrivals on in-person language support, which is not available when learners are trying to engage remotely (↑Galliver et al., 2021; ↑Loganathan et al., 2021;

↑Prabaningtyas et al., 2023; ↑Samsari et al., 2024). As a result, refugee learners struggle to engage and are likely to fall behind:

> *"Distance education is not the appropriate method for educating refugees because it does not meet their language needs* [...]. *Refugees have a greater need for face-to-face learning to achieve the desirable learning outcomes and to overcome their language difficulties. Given their different first language, distance education is particularly difficult for the refugee children"* (↑Samsari et al., 2024, p. 7).

However, there are instances and conditions in which online learning may be effective for certain groups of refugee learners. A UNICEF report from the Covid-19 pandemic in Lebanon found that NGOs delivering frequent virtual classes while providing households with Wi-Fi hotspots and regular data recharges resulted in substantial improvements in children's learning (↑UNICEF, 2021). In the Malaysian context, educationists interviewed by ↑Loganathan et al. (2021) reported that refugees' learning improved when they were taught online in smaller groups; this was "especially helpful for beginners and less IT savvy students that need more attention" (↑Loganathan et al., 2021, p. 11)

## The introduction of EdTech should be accompanied by comprehensive teacher professional development

If we accept the argument made above that EdTech should be viewed primarily as a tool for teachers, then it is crucial that teachers receive appropriate training to ensure that EdTech is a genuine support for them rather than an additional burden. Several authors across the literature hold this view (↑Bock et al., 2020; ↑Drolia et al., 2020; ↑Ehlers, 2024; ↑INEE, 2020); EdTech training for teachers was considered crucial to the success of Instant Network Schools in Dadaab refugee camp in Kenya, for example (↑Bock et al., 2020). It is also considered especially important in displacement settings to conduct regular EdTech training, as teacher turnover may be higher in these settings compared to other contexts (↑Assaf & Taylor, 2022).

The importance of TPD in EdTech programme design is perhaps best illustrated by examples in which it was not fully in place and programmes suffered as a result; in the case of CWTL in Lebanon, (↑Turner et al., 2022) report that a lack of clarity around teachers' specific roles alongside the implementation of EdTech was a commonly reported challenge. In Bosnia and Herzegovina, ↑Poleschuk et al. (2023b, p. 22) observe that, during the implementation of the Akelius programme, teachers' "lack of experience,

knowledge, and relevant pre-service training on digital teaching materials and tools" led to some teachers not feeling "ready to explore by themselves what the digital learning application can offer", thereby limiting the full potential of the programme to improve learning outcomes.

For cases where teacher training is itself tech-based, ↑Kennedy & Laurillard (2019) provide a helpful summary of good practice suggestions for displacement contexts. Based on teacher feedback on a TPD MOOC, the authors suggest that tech-based TPD in displacement contexts should ideally:

- be blended to help ensure quality and appropriate support;
- have a core peer learning component;
- be supported by 'champions' who can act as mentors and secure local ownership;
- be integrated into existing training provision within the sector to ensure sustainability;
- be certified (ideally endorsed by the host community government);
- emphasise the practical application of theoretical concepts;
- be designed with and for the refugee community in question.

## Sustainable financing is fundamental and could be supported by multi-funder collaborations

It is clear from evidence relating to the broader refugee education sector that sustainable financing is crucial to ensuring continued education for displaced learners (↑Benveniste et al., 2023; ↑Naylor, 2023). A good EdTech specific example is the Instant Network Schools, for which long-term financing commitments were identified as a significant success factor. According to ↑Bock et al. (2020, p. 679), "the staying power of its sponsors—Vodafone and UNHCR—has helped fuel this success". Reflecting on the pledges made during the Global Refugee Forum 2023, ↑Benveniste et al. (2023) recommend the provision of "instruments for predictable, multi-year, recurrent financing for refugee education". Elsewhere, following a workshop at the UKFIET conference in 2023, ↑Naylor (2023) notes that donors in high-income countries are likely to be willing to cover the initial costs of refugee education programmes (which may include device procurement in the case of EdTech programmes), but are much more reluctant to cover recurrent costs such as teacher salaries. In

light of these observations, she calls on bilateral and multilateral donors to rethink how to share these recurrent costs to ensure longer-term refugee education provision.

There is a strong argument to suggest that sustainable financing for refugee education, including tech-based support for refugee learners, may be easier to achieve when refugees are included in national education systems. As a 2021 World Bank and UNHCR report explains,

> *"Refugee-inclusive education systems allow governments to cost education investments in the same way for refugees and native students* [...] *the financial constraints faced by host country systems are applied to local and refugee students uniformly, so that governments that are already stretched are not expected to commit more resources to refugees than to local systems beyond the initial integration phase."* (↑World Bank & UNHCR, 2021, p. 19).

Where gaps remain, and as evidenced in the above example provided by ↑Bock et al. (2020), private sector financing is also now identified as an important source of EdTech funding. However, ↑Menashy & Zakharia (2019)and ↑Drolia et al. (2020) both urge caution when it comes to relying on financing from for-profit sources. ↑Menashy & Zakharia (2019) highlight the private sector's pronounced interest in funding EdTech initiatives relating to Syrian refugees in Lebanon, Jordan, and Turkey due to perceived opportunities to create new markets and establish brand loyalty. Several interviewees from the study find this highly problematic; as one noted, "there's a disconnect between what is technically and logistically appropriate and what looks good from a branding and marketing perspective" (↑Menashy & Zakharia, 2019, p. 323–4). There is, therefore, a risk that private sector financing may result in decontextualised EdTech interventions that do not adequately serve their target users.

However, the refugee education sector is facing a reality in which governments in donor countries are increasingly changing their priorities to favour domestic spending, making it harder for bilateral and multilateral donors to provide predictable, long-term financing for refugee education (↑Pacifico, 2024). Given this status quo, multi-stakeholder partnerships, including private sector-backed philanthropic foundations, may be crucial to sustaining learning through technology for displaced learners, with these actors less dependent on changing political landscapes (↑El-Serafy & Ozegovic, 2021; ↑UNHCR, 2022). A good example of such an approach is that of EdTech support for displaced learners caught up in the ongoing war in Ukraine, which is being provided by a combination of institutional donors,

governments, international funds, and local and global businesses, with private sector actors making several substantial device donations (↑Ministry of Education and Science of Ukraine & Education Cannot Wait, 2024). The caveat is that the private sector alone should not be wholly relied upon to sustain this funding, given the inevitable impact of profit agendas on their decision-making and the fact that, as ↑Hopper (2024) points out, funding gaps in refugee education more broadly are considerably greater than what the philanthropic sector currently provides.

## 3.4 What are the barriers to successful EdTech implementation with displaced populations?

Even if the design and implementation suggestions in Section 3.3 are followed, several challenges to EdTech use with displaced populations persist and these are discussed below.

### Many displaced learners lack access to necessary resources, including reliable electricity, the internet, and devices

Limited access to the resources crucial for EdTech access is frequently highlighted in the literature and is similar to the limitations experienced by other marginalised groups and learners in emergency contexts (see ↑Barnes et al., 2025). These include unreliable electricity access, especially in camp settings (↑Drolia et al., 2020; ↑Ehlers, 2024; ↑INEE, 2020); a lack of internet connectivity (↑Bock et al., 2020; ↑Câmara, 2021; ↑Jones et al., 2022; ↑Kennedy & Laurillard, 2019; ↑Save the Children, 2021; ↑Taftaf & Williams, 2019) and learning devices (↑Akhtar & Keeney, 2024; ↑Câmara, 2021; ↑Dreesen et al., 2021; ↑Drolia et al., 2020; ↑Ehlers, 2024; ↑Jones et al., 2022; ↑Loganathan et al., 2021; ↑Samsari et al., 2024). These gaps in access are strongly linked to economic hardship (↑Akhtar & Keeney, 2024; ↑Jones et al., 2022; ↑Save the Children, 2021), and this link was spotlighted during the Covid-19 pandemic:

> *"Refugee families often live under acute economic hardship and have less access to the necessary technologies to take part in remote learning. Without this access, refugees are immediately excluded from education"* (↑Save the Children, 2021, p. 12).

This evidence constitutes a warning that overreliance, particularly on internet-enabled devices, without providing additional support with device access and internet connectivity, may result in displaced populations becoming further marginalised than they already were.

### Some displaced learners, as well as teachers and caregivers, may lack the digital literacy required to benefit from EdTech

Several sources note that displaced learners may be unable to benefit fully from EdTech implementations if they do not already have digital skills (↑Câmara, 2021; ↑Drolia et al., 2020; ↑Samsari et al., 2024). Teachers and caregivers may similarly be unable to support learners if they do not have these skills either (↑Ehlers, 2024; ↑Galliver et al., 2021; ↑INEE, 2020; ↑Loganathan et al., 2021). This lack of digital skills is a significant barrier, particularly for younger learners who are more dependent on in-person support (↑Galliver et al., 2021; ↑Loganathan et al., 2021). In the Malaysian context, ↑Loganathan et al. (2021) suggest that refugee caregivers may have especially limited digital skills, increasing the likelihood that displaced learners will receive less support at home than others:

> *"Participants shared that unlike the average Malaysian parents who are literate and have basic knowledge of using technology, parents from marginalised non-citizen communities like the Rohingya have limited literacy and were unable to help their children manoeuvre the challenges of online learning"* (↑Loganathan et al., 2021, p. 9).

### Gender-based barriers prevent female displaced learners from benefiting from EdTech

As alluded to in Section 3.2, four sources highlight persisting gender-based barriers that prevent female displaced learners from accessing EdTech (↑Dahya et al., 2019; ↑Ehlers, 2024; ↑INEE, 2020; ↑Jones et al., 2022). These barriers take different forms. In some contexts, girls have more limited access to devices; the results of ↑Jones et al.'s (2022) telephone surveys with Syrian and Rohingya refugees show that "older adolescent boys were much more likely to have their own mobile device with internet access (63%) than older adolescent girls (34%)," while "younger boys also were slightly more likely to have such a device than younger girls (14% versus 9%)" (↑Jones et al., 2022, p. 63). This may be because caregivers restrict girls' device access in some contexts (↑INEE, 2020). Elsewhere, ↑Ehlers (2024) indicates that gender-based violence restricts refugee education access, and ↑Jones et al. (2022) found that Syrian girls reported a higher domestic chore burden, which limited their online study time during the Covid-19 pandemic.

## Some policy and legal frameworks do not support displaced learners' access to EdTech because they do not support their inclusion within host country education provision more broadly

A key barrier that is arguably more specific to displaced populations is the issue of unfavourable or restrictive legal and policy frameworks in force in refugees' host countries. This is particularly acute in the case of Cox's Bazar in Bangladesh (↑Ehlers, 2024; ↑Jones et al., 2022; ↑Save the Children, 2021), where the Rohingya community's access to the internet, and therefore remote learning, has been all but eliminated by the Bangladeshi government:

> "[...] *remote online education has been almost impossible due to the ban on mobile data in camps, since September 2019, and other technology restrictions within camps*" (↑Save the Children, 2021, p. 29).

Indonesia offers another example of refugee exclusion within a policy environment. ↑Prabaningtyas et al. (2023) explain how this exclusion became all the more evident during the pandemic. A policy revision in 2022 permitted schools receiving refugee children to accept financial support from international agencies and removed the requirement for refugee children to obtain permission from a detention centre to access education. However, refugee students were still ineligible to receive internet quota assistance from the government because they were not registered within the Basic Education Data System. The authors suggest this was a primary obstacle to remote learning for refugees during the Covid-19 pandemic. As the authors summarise,

> *"Indonesia still lacks a comprehensive and long-term regulatory framework to act as a guideline for ensuring refugees' rights, including education rights"* (↑Prabaningtyas et al., 2023, p. 52).

Asylum seekers in England found themselves in a similar position during the Covid-19 pandemic. Although the situation was subsequently remedied, the Department for Education's provision of technology for learning at the beginning of the Covid-19 pandemic,

> "[...] *was based on young people's eligibility for free school meals* [....] *However, asylum-seeking families are not eligible for free meals because they have "no recourse to public funds"* [...] *preventing their access both to much-needed technology and food"* (↑Câmara, 2021, p. 68).

Furthermore, displaced learners' access to EdTech may be restricted if they are not granted access to national education systems in their host countries. A 2020 UNHCR report highlights the case of Egypt, where every student receives a tablet and has access to a wealth of digital resources, but refugee learners of some nationalities do not yet have access to state school education (↑UNHCR, 2020).

# 4. Synthesis and conclusions

There is a strong body of evidence suggesting that EdTech has an important role in ensuring that displaced learners can continue to learn post-displacement and that these learning opportunities are of a high quality. Mobile technologies, in particular, can be harnessed to provide access to educational resources and experiences wherever learners are, plug immediate gaps in education access following displacement, and enable caregivers to learn alongside their children. Gamified apps are especially promising for improving learning outcomes, increasing learner motivation, and supporting displaced learners' psycho-social well-being. EdTech, in the form of MOOCs and instant messaging, may also effectively support teacher professional development in displacement settings and provide them with valuable organisational and pedagogical tools.

However, these benefits are all highly dependent on careful decision-making around design and implementation, including selecting appropriate EdTech tools for each displacement context and implementing them in thoughtful, tailored ways. The evidence suggests that, while autonomous EdTech use may be helpful as a stop-gap measure in the short term, in the longer term, EdTech is most effective for displaced learners when used to support direct instruction. Fully online delivery should also be approached with caution, as the literature suggests that displaced learners benefit greatly from in-person interaction during their learning. Given the importance of teacher mediation, comprehensive teacher professional development is essential to ensuring that teachers have the confidence and skills to integrate EdTech into their support of displaced learners.

Several barriers continue to impede the success of EdTech in displacement contexts. Some of these, such as limited access to electricity, internet, and devices, limited digital skills, and gender-based barriers, are common to many marginalised groups. However, a significant barrier specific to displaced populations is host country policies and legal frameworks that exclude displaced learners from national education systems and support mechanisms, severely reducing their educational opportunities.

Without long-term, sustainable funding commitments, these barriers cannot be overcome, and careful design and implementation plans cannot be realised. In a world where the number of forcibly displaced people continues to soar, but where humanitarian and education funding continues to be deprioritised by governments, it is more important than

ever that those working to support displaced learners push for their integration into national education systems, and seek diverse investment partnerships to support their efforts. The political landscape is changing, but the need to support displaced learners with high-quality educational opportunities that will help them through the toughest experiences of their lives is not.

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# Annexe: Search strings

**For Google Scholar**

- (Educational technology OR Education technology OR EdTech OR distance learning OR remote learning) AND (refugee OR IDP OR internally displaced person OR asylum seeker)
- (Educational technology OR Education technology OR EdTech OR distance learning) AND (emergency OR crisis OR protracted crisis OR disaster OR displaced OR refugee OR displacement)
- (Educational technology OR Education technology OR EdTech OR distance learning) AND (refugee OR asylum seeker OR IDP) AND (child OR children)
- educación AND tecnología AND refugiado

**For Google main**

- EdTech education technology ICT refugee displaced asylum seeker evidence
- education technology refugee displaced evidence
- educación tecnología refugiado desplazado evidencia