From radio to artificial intelligence

Review of innovative technology in literacy and education for refugees, migrants and internally displaced persons

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The global movement of people, both within national and across international borders, is a well-established phenomenon. People move for many reasons. They may fear persecution, war or disaster, or seek opportunities for a better life. The number of refugees, internally displaced persons and migrants has grown significantly over the past decade due to an increase in conflicts, natural and artificial disasters, and globalization. The United Nations High Commissioner for Refugees (UNHCR) estimated that a staggering 82.4 million people were forcibly displaced at the end of 2020, including Palestinian and Venezuelan displaced persons and refugees, most of whom will remain in exile for five to 10 years (UNHCR, 2021). This protracted displacement makes access to inclusive, high-quality literacy and education opportunities absolutely crucial, especially for youth and adults, who make up more than two-thirds of this population.

In contrast to school-aged children, there is limited data on the literacy and educational needs and experiences of youth and adult refugees, migrants and internally displaced persons. The experiences of an estimated 272 million migrants (IOM, 2019), whether they move voluntarily or involuntarily, are shaped by how they are perceived by their country of destination – as highly skilled or low skilled, documented or undocumented, a benefit to the economy or a burden to the host community. Literacy in the language of the destination country and continuing education opportunities are vital to prevent the exploitation of migrant workers and to enable them to participate in their communities as active citizens.

Information and communication technologies (ICTs) can help refugees, migrants and internally displaced learners overcome the challenges they often encounter, such as those associated with access and language. They can find and use personalized learning resources in their own language, to learn at their own pace. Even with limited quality access to ICTs, optimizing the design of literacy and educational programmes to operate in contexts with little or no internet connectivity can bring learning to remote places. At the same time, it is important to recognize and understand the limits of ICTs, as their design and use reside in the different technological, sociocultural and political contexts that refugees, migrants and internally displaced persons face when moving from one place to the next.

In response to these problems, the UNESCO Institute for Lifelong Learning (UIL), with the financial support of the Swedish International Development Cooperation Agency (SIDA), initiated this review of the literature and practices of innovative technologies for literacy learning and education for youth and adult refugees, migrants and internally displaced persons. This review compiles literature on the challenges and needs of these vulnerable groups. It examines how 25 selected literacy and education programmes worldwide have put ICTs into practice to help these groups in their learning endeavours.

The insights from the programmes reaffirm the value of using a wide range of technologies, from radio to advanced digital technologies, such as artificial intelligence, to improve literacy and

education for these vulnerable groups. These technologies have been used in innovative combinations to enable programmes to address the challenges of providing learners and educators with access to ICTs, and their effective use for learning. The review also shows that equitable and inclusive quality education and lifelong opportunities for refugees, migrants and internally displaced persons are better achieved when stakeholders work together to meet the needs of these target learners.

We believe this report is unique in its attempt to address the diverse experiences of the under-researched populations of youth and adult refugees, migrants and internally displaced persons, and in how it examines the opportunities and challenges of accessing and participating in technology-enhanced literacy and education programmes.

As we share and contribute to the paradigm shift in learning that is taking place in the current context of the COVID-19 crisis, we invite you to read this report and reflect on how we can make this educational transformation more inclusive for all learners.

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Director
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This report presents a review of relevant literature and an analysis of 25 programmes selected from across the world that have used innovative information and communication technologies (ICTs) in literacy and education for refugees, migrants and internally displaced persons (IDPs). It answers the following three questions:

1. What are the main literacy issues refugees, migrants and IDPs face?

2. How do different approaches that use ICTs affect the literacy teaching and learning of youth and adult refugees, migrants and IDPs?

3. Which strategies are used by ICT-supported literacy and education programmes for youth and adult refugees, migrants and IDPs to overcome common implementation challenges?

Thematic findings

Generally, the global population of non-literate youth and adults remains a major challenge. There is evidence of persistent inequality in realizing the right to education for all. Existing literature reveals that national and global data on the literacy of youth and adult refugees, migrants and IDPs are extremely limited, possibly due to a lack of prominence in international legal and policy instruments, and national education agendas.

While ICTs, from radio to computers, have long been used in education, there is limited evidence to show how effective they have been in supporting literacy and education programmes for refugees, migrants and IDPs; however, the 25 programmes analysed in this report reveal that ICTs play an important role in overcoming barriers to learning for these target groups. The strategies followed by these innovative ICT-supported literacy and education programmes are elaborated across six thematic areas:

1. **Access and inclusion:** Despite the increasing affordability, availability and functionality of mobile phones, refugees, migrants and IDPs face ongoing issues, such as limited network coverage, high costs of connectivity, unreliable electricity in camps, and finding relevant and culturally appropriate content. Providing ICT access, removing barriers to access and improving inclusion are important first steps in many of these programmes. They have innovated by using mass media, radio and text messaging, individually or in combination with advanced digital technologies, to deliver personalized content for literacy learning and other skills. A transition to mobile-first formats and platforms has also been observed and corresponds to the already high and ever-increasing use of mobile phones and smartphones among refugees, migrants and IDPs.

2. **Capacity-building for teachers and educators:** Programmes targeting teachers and educators are primarily designed to improve or increase their use of ICTs when teaching refugees, migrants and IDPs. Some programmes also aim to help education facilitators develop trauma-informed pedagogy and intercultural communication skills. The use of a diverse range of free, online communications applications, video-conferencing software and social media were cited as tools to facilitate discussions and build a community of practice.

3. **Relevant content and innovative andragogy:** Delivering relevant content took the form of integrating literacy and second-language learning with digital skills, life skills and various instructional innovations using ICTs. The second-language and literacy programmes in particular recognize learners' diverse linguistic backgrounds, offering multiple language options on their online platforms and applications. Creative

instructional and andragogical approaches, such as arts-based and drama curricula facilitated through Zoom or other communication tools, were also used in second-language and literacy development programmes. In addition, game-based online exercises and activities made learning an enjoyable process.

4. **Monitoring and evaluation:** The programmes featured in this report use a range of monitoring and evaluation strategies, from obtaining real-time data about learning progress through applications and software programs to offline and online assessment and tests to evaluate learners' literacy levels. Programmes also obtained qualitative data on learners' and educators' views through survey questionnaires. A small number of programmes conducted external evaluations, likely limited by their budgets. This suggests a gap in understanding how effective ICT is in delivering literacy learning and education for youth and adult refugees, migrants and IDPs.

5. **Strategic partnerships:** Engaging with stakeholders and developing partnerships was crucial for implementing many of the programmes effectively. In countries where the programmes were run, ministries and district authorities were important gate-keepers who provided access and supported coordination. Strategic partnerships with local partners, community-based organizations and non-governmental organizations (NGOs) were vital to building trust with the learners and reaching the intended beneficiaries. Private-sector partnerships helped provide internet connectivity, access to ICT devices and software, and made learning content accessible.

6. **Recognition, validation and accreditation (RVA) of learning:** While RVA is vital to enabling refugees, migrants and IDPs to participate in further education and the labour market in their host countries, the programmes profiled here demonstrate the limited role that technology currently plays

in the RVA process. Programmes commonly align their curriculum with national curriculum frameworks, establish specific agreements with relevant universities, develop mechanisms for recognizing prior learning, and advocate among policy-makers and other stakeholders. They also award learners with online certificates or electronic badges for motivational purposes. The use of blockchain or other technologies to mitigate the RVA challenges faced by refugees, migrants and IDPs remains to be seen.

Insights

This report offers four major insights for governments, providers and learners. First, there is a **significant gap in our understanding of literacy and literacy provision for youth and adult refugees, migrants and IDPs**. Governments, international organizations, civil society organizations and humanitarian aid organizations need to come together to understand the scale of the situation before they can coherently tackle this challenge.

Second, **technological innovations that combine established, low-cost, non-digital technologies and methods – such as interactive radio instruction (IRI) – and advanced technologies offer encouraging possibilities** to scale-up literacy and education programmes. The sustainability of these programmes requires engagement from multiple stakeholders, from private individuals to governments, to make the most out of relevant expertise and resources. Access to digital devices and internet connectivity is becoming an increasingly significant barrier to learning, however, as more literacy programmes employ social media, video conferencing platforms, learning management systems and online resources in their curricula.

Third, **learners need to be central to the design, implementation and improvement of ICT-supported literacy programmes,** which should address their specific learning needs, personal experiences and learning environment – including their community and commute to and

from learning instruction. The programmes included in this report often combine literacy learning with tutorials on digital and life skills, vocational training, tertiary courses and citizenship education.

Fourth, **local, national and international cross-border strategic partnerships are critical for developing effective ICT-supported literacy and education programmes.** The many cross-border partnerships seen in the programmes profiled in this report exemplify how resources and expertise in using ICTs to support literacy and education for refugees, migrants and IDPs exist globally and can be brought together for those who need it most.

Recommendations

Based on the analysis of the relevant literature and the 25 programmes, this report proposes the following recommendations to improve policy, research and practice in ICT-supported literacy learning and educational opportunities for refugees, migrants and IDPs.

- **At the global level:**
 - Collect comprehensive and disaggregated data on literacy rates of youth and adult refugees, migrants and IDPs.
 - Improve recognition, validation and accreditation (RVA) mechanisms, including for prior and independent learning achievements.
 - Expand existing research agendas to include the ICT and literacy practices of youth and adult refugees, IDPs and migrant learners in low- and middle-income countries as well as the vulnerable populations within these groups, such as those with disabilities.

- **At the national level:**
- Improve ICT infrastructure to increase coverage where refugees, migrants and IDPs reside.
- Ensure quality and affordable access to ICT devices and internet connectivity for the learning, communication and information needs of refugees, migrants and IDPs.

- Integrate monitoring and evaluation into literacy and education programmes to respond to feedback from learners, educators and other stakeholders, and to demonstrate impact and efficacy.

- **At the programme level:**
- Provide continuous professional development for educators, facilitators and teachers in the use of technologies for effective literacy instruction with learners from refugee, migrant and internally displaced backgrounds, including training in socio-emotional and trauma support.
- Include educators, facilitators, teachers and other education personnel in the design of technology-supported programmes to ensure instructional effectiveness.
- Consult with and involve target learners in the design of ICT-supported literacy programmes and throughout programme implementation to ensure relevance.
- Develop and adapt content to learners' needs, taking into consideration their everyday experiences; their literacy, numeracy and broader education levels; their knowledge of different types of ICT; and their diverse cultural backgrounds and languages.
- Document the impact of programmes not just on the target groups' literacy but also on other aspects of their well-being.
- Harness strategic partnerships to enhance the strength and mitigate the challenges of programmes that use ICT for literacy and education.
- Integrate Universal Design for Learning (UDL) principles when developing programmes to ensure that all aspects of content; teaching approaches; ICT modalities; and assessment, monitoring and evaluation recognize, accommodate and assist learners who are at risk of exclusion.[1]

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[1] To learn more about UDL, visit https://www.cast.org/impact/universal-design-for-learning-udl.

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Globally, the number of refugees, migrants and IDPs has increased significantly over the past 10 years to reach unprecedented heights (UNHCR, 2021; IDMC, 2021; IOM, 2019). The duration of the displacement of refugees and IDPs has also increased (Bellino and Dryden-Peterson, 2019; UNGA, 2019). With prolonged and protracted displacement, access to inclusive quality education becomes even more critical. In particular, the '[achievement of] relevant and recognized functional literacy and numeracy proficiency levels and … life skills' is an essential part of quality lifelong opportunities for all youth and adults (UNESCO, 2015, p. 8).

Sustainable Development Goal (SDG) 4 of the 2030 Agenda for Sustainable Development, adopted by the Member States of the United Nations in November 2015, highlights under SDG Target 4.6 the crucial role of literacy and numeracy in meeting the demand for inclusive, quality education and lifelong learning opportunities for all. Literacy and numeracy occupy this prominent position because they are 'at the core of basic education and an indispensable foundation for independent learning' (ibid., p. 35).

Defining literacy

'[Literacy] involves a continuum of learning and proficiency levels which allows citizens to engage in lifelong learning and participate fully in community, workplace and wider society.
It includes the ability to read and write, to identify, understand, interpret, create, communicate and compute using printed and written materials, as well as the ability to solve problems in an increasingly technological and information-rich environment'
(UNESCO and UIL, 2016, p. 7).

Literacy helps reduce poverty, increases opportunities, enables a person to exercise their rights and improves health outcomes. It is essential for social inclusion and civic participation, and is one of the most important learning needs and goals for migrants (Majhanovich and Deyrich, 2017). In fact, refugees, migrants and IDPs are expressly named in the Education 2030 Framework for Action for the implementation of SDG 4 as specific groups whose educational needs must be met in emergency situations such as conflicts or disasters (UNESCO, 2015, p. 45). When the COVID-19 crisis took hold in early 2020, for example, health literacy enabled people to receive and respond to vital information about the pandemic, saving lives (Lopes and McKay, 2020).

Nevertheless, around 773 million youth and adults worldwide still lack basic literacy skills, with literacy rates in sub-Saharan Africa, for example, standing at just 77 per cent and 66 per cent for youth and adults, respectively (UNESCO, 2020a). For refugees, migrants and IDPs, literacy rates can vary widely depending on the circumstances of their migration, their level of education before moving, and access to education in the host country. Many, regardless of background, face different barriers to literacy learning, whether in their native language, the language of the host country or in a third language, such as English.

At the individual level, accessible learning opportunities are often inadequate and do not always address the diverse learning needs and lifestyles of people on the move, who tend to prioritize finding work and supporting their families. In Germany, a 2016 survey found that only 34 per cent of asylum-seekers were literate in a Latin-based script, while the rest either had no literacy in any language (15 per cent) or literacy in a non-Latin script (51 per cent) (Scheible, 2018). This means that at least two-thirds of the country's asylum-seekers would have to learn a first or completely new alphabet before they could learn to read and write in German. In addition, those who lacked basic literacy skills were found to be the least likely to attend literacy classes (ibid.).

Refugees, migrants and IDPs – What's the difference?

Refugees

The 1951 Refugee Convention provides a universal definition of a refugee as someone who

'owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence, is unable or, owing to such fear, is unwilling to return to it;

'In the case of a person who has more than one nationality, the term "the country of his nationality" shall mean each of the countries of which he is a national, and a person shall not be deemed to be lacking the protection of the country of his nationality if, without any valid reason based on well-founded fear, he has not availed himself of the protection of one of the countries of which he is a national (UNGA, 1950)'.

This core definition is supplemented by regional instruments in Africa and Latin America.[2]

Refugees worldwide numbered 26.4 million by the end of 2020 (UNHCR, 2021). This is unprecedented and reflects refugees' ever-growing numbers over the past decade. There were 10.4 million refugees in 2011; by late 2020, that number had increased by 154 per cent. Moreover, an estimated 4.1 million refugees have been in exile for 20 years or more (UNHCR, 2017). Of refugee youth, only 23 per cent are enrolled in secondary education, compared with 84 per cent globally. Only 5 per cent eventually enter tertiary education compared to the global average of 37 per cent for non-refugees (UNHCR, 2021).

Internally displaced persons (IDPs)

IDPs are 'persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border' (UNHCR, 2022a).

By late 2020, there were more than 48 million IDPs (UNHCR, 2021), around two-thirds of whom were adults, with a little less than one-third aged 15 to 24 and the remainder comprising people aged 65 and older (IDMC, 2021). Tens of millions of IDPs continue to live in protracted displacement with limited or no access to education and basic services (UNGA, 2019). Despite the need for investment and programming to mitigate the effects of displacement, the education issues of IDPs are often less visible in research and the international community (Bengtsson and Naylor, 2016).

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[2] A selection of these documents can be found at https://www.refworld.org/publisher,RRI,,,50ffbce51fc,,0.html.

Migrants

The term 'migrant' is not defined under international law and is sometimes used differently by different stakeholders.[3] Traditionally, the term 'migrant' is used to denote people who move around voluntarily rather than to escape conflict or persecution, usually across an international border ('international migrants') – for example, to join family members who are already abroad, to search for a livelihood, or for a range of other purposes (UNHCR, 2022b).

Whatever their reasons for moving from their homes, many of the estimated 272 million migrants in 2019 (two-thirds of whom were labour migrants) would no doubt have benefited from learning opportunities. Migrants have been found to travel along the largest migration corridors, which typically lead from developing countries to larger economies such as the United States of America, France, the Russian Federation, the United Arab Emirates and Saudi Arabia (IOM, 2019). Acquiring literacy in the destination country facilitates social interaction, access to education, and increases employment opportunities and health outcomes (Aoki and Santiago, 2018; Chiswick, 2016; IOM, 2019).

What are ICTs?

The Commonwealth of Learning (COL), an intergovernmental organization that promotes and develops distance education and open learning technology, defines information and communication technologies (ICTs) as 'a range of technologies and tools used to create, collate and communicate information and knowledge. ICTs are used in daily life to prepare documents, talk to others by phone, listen to radio and watch television programmes. Some ICTs involve one-way communication, while others facilitate two-way communication. Some can include only one medium (e.g. telephone), while others can handle more than one medium (e.g. computer and television)' (COL, 2020).

ICTs have addressed some of the barriers that we have identified. Mobile devices have proven useful for refugees, migrants and IDPs (UNHCR, 2016a), who use them to obtain essential information for their new life and work in the host country, including information about health and education services and the local culture. Programmes have also shown that mobile devices can potentially expand flexible learning opportunities, enabling learners to acquire functional literacy skills anytime, anywhere. For those who cannot yet afford mobile technologies or reside in areas without cellular coverage, low-tech alternatives such as education programmes broadcast on television or radio have long been used to convey learning and information effectively. On the flip side, advanced technologies like artificial intelligence and machine learning can offer personalized literacy learning by storing, analysing and visualizing learner information to support monitoring and evaluation (Luckin et al., 2016).

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[3] This report adheres to the traditional definition of migrants to maintain a clear understanding of the differentiated and specific needs of refugees, migrants and IDPs. It avoids the increasingly common contemporary use of 'migrant' as an umbrella term for any person moving away from their habitual residence domestically or across borders, regardless of whether the movement is 'forced' or voluntary.

This report examines how programmes around the world use innovative technologies to address the literacy and education needs of refugees, migrants and IDPs. It addresses the following questions:

- What are the main literacy issues for refugees, migrants and IDPs?

- How do different approaches that use ICTs impact the literacy teaching and learning of youth and adult refugees, migrants and IDPs?

- Which strategies are used by ICT-supported literacy and education programmes for youth and adult refugees, migrants and IDPs to overcome common challenges in implementation?

This report comprises five chapters. **Chapter 1** describes its context and purpose. **Chapter 2** describes the scope, purpose and analytical approach that guided the literature review, provides an overview of the programmes, and outlines the analysis method used. **Chapter 3** looks at the main literacy issues faced by refugees, migrants and IDPs; how different approaches to ICTs impact literacy teaching and learning among refugees, migrants and internally displaced youth and adults; and the promotion of literacy among these populations. **Chapter 4** answers the third research question regarding the strategies used by ICT-supported literacy and education programmes to successfully overcome the issues identified in the literature review and the practical experiences of the programmes. **Chapter 5** offers recommendations for ICT-supported literacy learning strategies at the global, national, institutional and individual levels. The conclusion summarizes key insights for the way forward.

This report looks at refugees, migrants and IDPs aged 15 and over.[4] It comprises two main inter-related components: (1) a literature review of key literacy and education issues in the global context of refugees, IDPs and migrant youth and adults, and (2) an analysis of literacy and education programmes for these populations. All types of education provision are considered – including formal government-provided literacy programmes and non-formal and non-governmental approaches – provided an ICT component is included in the learning process.

The global scope of this report required the examination of evidence from a diverse set of countries, with an intentional focus on low- and middle-income countries due to the high proportion of refugees, migrants and IDPs in these settings. The literature used includes academic research and research from credible sources, such as development and humanitarian organizations, governments and non-governmental organizations (NGOs).

English-language literature was obtained through keyword searches on Google and Google Scholar, through literature provided by experts, and by using a 'snowball' procedure, whereby key documents on the use of ICTs in literacy and education for refugees, migrants and IDPs were used as a starting point for identifying similar texts. The search string used was 'literacy AND [youth or adult] AND [migrant or refugee or asylum seeker or IDP or internally displaced] AND [ICT or technology or tech or EdTech]'. **Annex 6.1** shows the full inclusion and exclusion criteria for evidence used in the literature review.

To assess the quality of the evidence, we consulted a document published by the Department for International Development (now the Foreign, Commonwealth & Development Office of the

United Kingdom of Great Britain and Northern Ireland), *How to Note: Assessing the Strength of Evidence* (DFID, 2014). Papers of unsatisfactory quality were removed from the review for reasons including a lack of clear methodology, a lack of suitable data and poor internal reliability. See **Annex 6.2** for details.

To better understand promising practices in place, 25 programmes from all five UNESCO regions, namely Africa, the Arab States, Asia and the Pacific, Europe and North America, and Latin America and the Caribbean, were analysed. The programmes were provided in Arabic, English, French and Spanish through an online global call for submissions from May to June 2020. To be eligible for selection, the programmes had to have been developed and implemented by one of the following types of organization:

- national institutions, such as ministries of education and other public-sector organizations;
- development cooperation/aid agencies;
- non-governmental or non-profit organizations/foundations;
- private-sector organizations that pursue development programmes/projects relevant to the core topics addressed in this study;
- scholars and researchers.

Moreover, to be eligible for inclusion in this study, a programme had to meet a set of criteria, including:

- the ability to demonstrate the innovative use of technology in literacy learning and education, with a focus on refugee, migrant or IDP youth and/or adults;
- having been launched and implemented for a duration of at least six months;

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[4] The United Nations defines 'youth' as persons aged 15 to 24, and adults as those who have reached the age of majority in their country, which is often 18 years of age (UN, 2020).

- the ability to demonstrate evidence of success in terms of relevance, scalability, efficiency, impact, and sustainability;
- the ability to demonstrate evidence of sectoral or target group-specific improvements in learning outcomes through verifiable means such as research studies, surveys or evaluation reports.

Other candidate programmes were also submitted through the Humanitarian Education Accelerator (HEA) programme of the UNHCR and the Norwegian Refugee Council.

All candidate programmes provided information through an online questionnaire and were evaluated by a group of internal and external experts who agreed on the 25 programmes featured here. From December 2020 to July 2021, further qualitative information was obtained in follow-up questionnaires tailored to the selected programmes. Twenty-two programmes responded to requests for further information and semi-structured online interviews were carried out with the focal points of 19 programmes.

The six key thematic areas that emerged from thematic analyses of the 25 programmes are elaborated in **Chapter 4**.

Overview of the programmes

Although the organizations responsible for the selected programmes have their headquarters in 21 different countries, the programmes themselves have been implemented in 73 countries. Together, these programmes reach nearly 6 million learners annually, ranging from fewer than 100 participants to over 2 million per individual programme. **Annex 6.3** lists all 25 programmes.

Just over half of the organizations are NGOs; the remainder are a mix of government agencies, public-sector educational institutions, private-sector organizations, development agencies and multilateral organizations.

Most of the 25 programmes target either refugees or migrants or both, with just over one-third targeting IDPs and seven targeting all three groups. Ten programmes are aimed at just one of these groups, seven at refugees and three at migrants; no programme was designed exclusively for IDPs (see **Figure 2.1**). Ten of the programmes also have components specifically tailored to girls and women.

Figure 2.1. Migrant status of target beneficiaries of the 25 programmes included in this report

Overlapping of target groups:
Refugees (22);
Migrants (16);
IDPs (9):

Refugees + migrants (6)

Refugees (7)

Migrants (3)

Refugees + migrants + IDPs (7)

Refugees + IDPs (2)

Migrants + IDPs

IDPs (0)
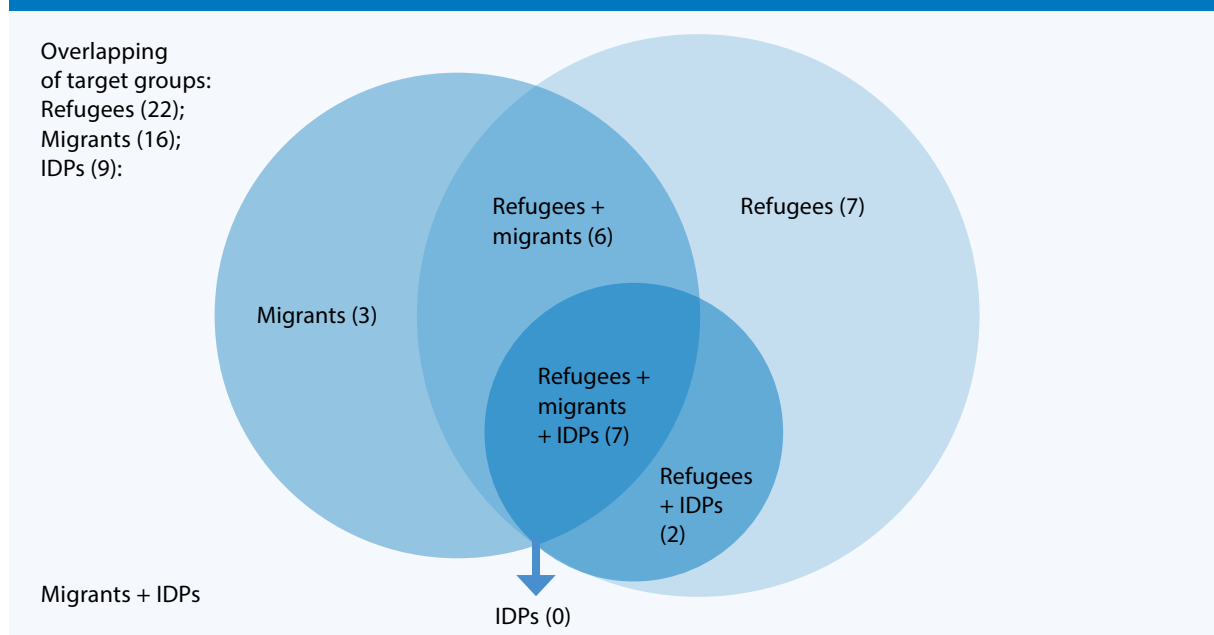
Source: UIL

The programmes included in this report use ICTs diversely, although in almost all programmes ICTs are intended to be used by the learners. In 19 programmes, teaching and facilitating staff are also the intended users. In some programmes, ICT components are also meant to be used by school administrators, employers, policy-makers and government officials, but usually in addition to a focus on learners and teaching staff (see **Figure 2.2**).

Figure 2.2. Primary users of the ICT component of the 25 programmes

Category	Value
Employers	1
Policy-makers / Government officers	2
School administrators	2
Schools Institutions	8
Facilitators	9
Teacher-trainers	12
Teachers / Educators / Facilitators / Trainers	19
Learner	23
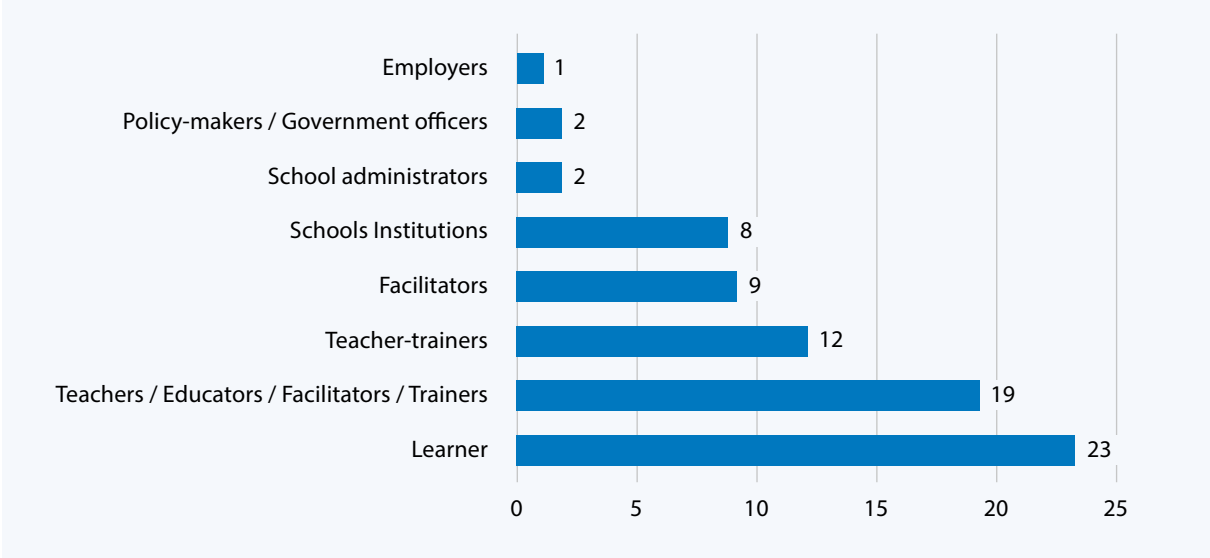
Source: UIL

In addition, the ICT component of these programmes focused on different topics: 20 programmes focused on basic literacy, either in the learner's mother tongue (L1) or in the host country's language (L2), with more organizations focusing on L2 (19 organizations) than L1 (11 organizations). More than half of the programmes focused on job-related skills, more than two-thirds on digital skills and around one-third focused on basic numeracy and citizenship skills (**Figure 2.3**).

Figure 2.3. Areas of focus of the 25 programmes

Category	Value
Basic numeracy	9
Citizenship skills	10
Basic literacy (mother tongue or L1)	11
Job-related skills (for better employability)	16
Digital skills	18
Basic literacy (host country's language or L2 or foreign language)	19
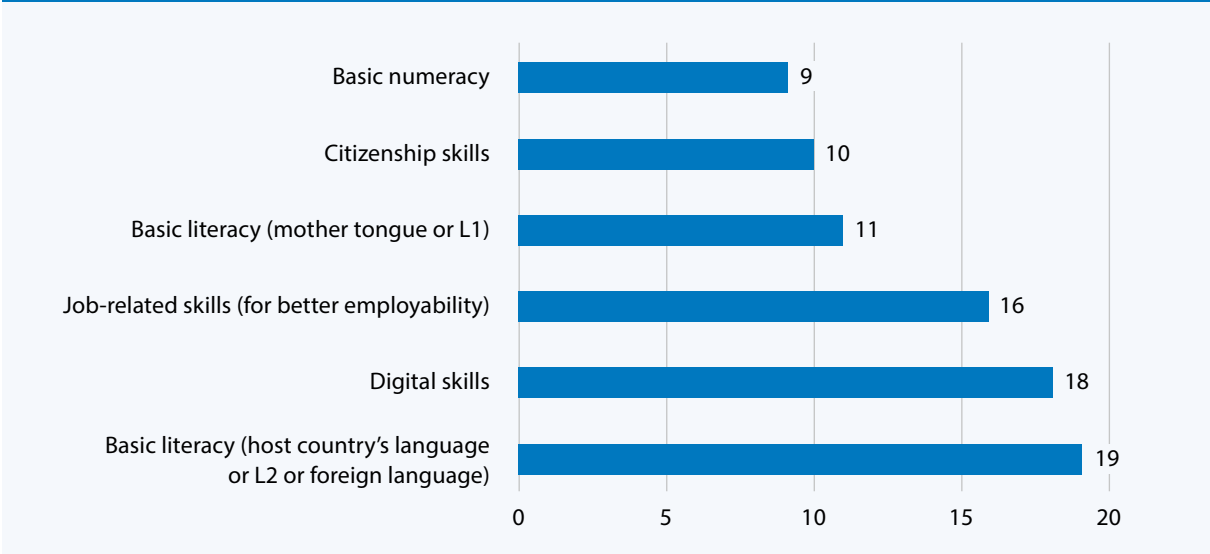
Source: UIL

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3. Understanding the literacy and technological contexts of youth and adult refugees, migrants and internally displaced persons

3.1 GLOBAL AND NATIONAL CONTEXTS

Important international agreements and documents on refugees and migrants, such as the Global Compact for Safe, Orderly and Regular Migration (UNGA, 2019) and the New York Declaration for Refugees and Migrants (UNGA, 2016), make no mention of literacy; neither do those for IDPs, such as the Guiding Principles on Internal Displacement (OCHA, 2004) or the African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention) (AU, 2020). This apparent omission from global policy documents and international legal documents is probably why countries fail to prioritize policies and programmes for these target groups. Other reasons are the lack of or diminishing funding for adult education programmes, including in high-income countries, and limited human resources for programme implementation (UNESCO, 2018a).

The fourth *Global Report on Adult Learning and Education (GRALE 4)* found that 48 countries (37 per cent) did not record participation rates for minority groups, refugees and migrants in adult learning and education programmes. When asked about the prioritization of state funding for adult education, 26 per cent of countries reported that migrants and refugees are not accorded a high priority; another 28 per cent reported that they did not know the level of priority (UIL, 2019). The focus in reports on refugee education priorities is still mostly on advocating children's enrolment in formal education, building classrooms and hiring teachers (UNHCR, 2021). Education opportunities for post-primary education are generally limited, except for a few cases of technical and vocational education (TVET) and training available to adults (Bengtsson and Naylor, 2016).

3.1.1 Literacy rates of refugees, migrants and IDPs

A major challenge for youth and adult literacy among refugees, migrants and IDPs is the lack of data to understand the nature and scale of the problem. There is little detailed literacy data for migrants and displaced youth and adults, especially in low- and middle-income countries, where most refugees and IDPs live. Moreover, national education data submitted to UNESCO are not broken down by migrant and displacement status.

In the context of migration and the increasing movement of migrant workers from developing countries to developed economies via long-established migration corridors, a survey conducted as part of the Programme for the International Assessment of Adult Competencies (PIAAC) offers insights into the differences in literacy between foreign-born and native-born adults. In the PIAAC survey, 12 per cent of adults were foreign-born, ranging from less than 5 per cent in countries like Chile and Lithuania to over 25 per cent in Australia, Canada and New Zealand. The literacy scores of foreign-born adults were, on average, 24 points lower than those of native-born adults. That corresponds to the difference between completing upper secondary education and completing tertiary education (OECD, 2016).

However, no comparable data from large-scale surveys such as PIACC are available for low- or middle-income countries. Limited data suggest that, in education systems with lower rates of enrolment, retention and completion of compulsory education, the literacy gap between youth and adult refugees, migrants and IDPs can be just as large as or more significant than in

countries covered by PIAAC. For example, in Colombia, the illiteracy rate among displaced Afro-Colombians over 15 is 22.4 per cent, higher than that of the rest of the displaced population (20 per cent); this, in turn, is significantly higher than the 10 per cent illiteracy rate for the same age group in the general population (Ferris and Winthrop, 2011).

In a pioneering study evaluating literacy and numeracy skills of Syrian youth refugees in Jordan aged 15 to 24, UNESCO found that the majority (69.25 per cent) of respondents achieved the minimum expected proficiency in Arabic, which is the language used in Jordan, by responding correctly to 10 or more out of a total of 20 possible questions. The participants achieved a combined average literacy score of 11.66 out of 20 points. However, it has been suggested that this would not be sufficient for jobs that require the ability to complete more complex tasks. Many work situations require staff to understand longer texts, and communicate and process the information they contain (UNESCO, 2020b).

The combined average numeracy score, meanwhile, was only 5.66 out of 20. Participants did not even attempt to respond to many of the numeracy questions due to a lack of under-standing or inability to solve the problems. These results show that Syrian refugee youth generally fail to attain the minimum level of numeracy skills, which could pose difficulties in coping with the numeracy demands of daily social interactions and employment (ibid.).

3.1.2 Barriers to literacy provision

Fragmented national policies

At the national level, countries often lack strategies for adult education for vulnerable groups; this results in minimal and fragmented programmes and activities geared towards the adult education needs of migrants and refugees (Diversity Development Group, 2016). A similar fragmentation of English-language provision for vulnerable groups was found in Australia, with

researchers unable to map a system at the state or federal level (Hanemann, 2018). Offerings available in the country are limited to small-scale programmes provided by NGOs (Lanciotti, 2019). The demands on national systems can also increase rapidly. Countries with the capacity to support youth and adult literacy education can quickly be overwhelmed by a rapid influx of refugees and migrants. For example, Norway has faced such a challenge in recent years due to the arrival of predominantly Syrian refugees, which has put pressure on the previously well-structured systems of educational integration (Hanemann, 2018).

Such examples show that any political decision to accept refugees requires the coordination of different stakeholders, including adult education providers. In the UK, some language centres report waiting lists for migrants of up to three years. This might be due in part to a lack of funding, as the country's Skills Funding Agency cut the budget for English as a second language by 50 per cent between 2009 and 2015 (UNESCO, 2018a). In Germany, some refugees have had to wait for over a year for their asylum applications to be processed in order to become eligible for state-sponsored language and integration courses, although refugees from the Syrian Arab Republic, the Islamic Republic of Iran, Iraq and Eritrea have automatically received permission to participate in these courses since 2015 due to the very high likelihood that they will be granted asylum (Klingenberg and Rex, 2016).

High costs

The cost of attending courses and not working may limit access for some vulnerable groups (UNESCO, 2018a; UIL, 2019). In the 2015 PIAAC survey, the cost of adult education was cited as an obstacle by 25 per cent of respondents in Slovenia, compared to 7 per cent in Finland, reflecting the cost burden in these two countries. In Finland, participants cover 10 per cent of the cost compared to 37 per cent in Slovenia (OECD, 2022). This factor is particularly prevalent in countries with poorer income

groups and among women (UIL, 2019), especially in countries with relatively low middle-income levels and those with limited or no public funding for literacy programmes for refugees and migrants.

Lack of information

A key issue emerging from the fragmented responses of non-governmental organizations is that potential learners have difficulty identifying opportunities; this is especially true of urban refugees, who can spread out across different urban centres that lack information points or portals to guide them to learning opportunities (Gladwell et al., 2016; UIL, 2019). In a 2008 study in Germany, for example, 63 per cent of foreign-born migrants felt they were not adequately informed about adult education opportunities, compared to 17 per cent of German citizens (Moser, 2012). Urban centres with a high concentration of migrants from the same linguistic background can form ethnolinguistic enclaves and hinder social integration. In Australia, Canada, Israel, the UK and the USA, the dominance of ethnolinguistic enclaves was found to influence language and literacy acquisition and the social integration of migrants and refugees (UNESCO, 2018a).

Limited or no recognition and accreditation of prior learning and qualifications

The *UNESCO Guidelines for the Recognition, Validation and Accreditation of the Outcomes of Non-formal and Informal Learning* (UIL, 2012) defines recognition, validation and accreditation (RVA) of all forms of learning outcomes as 'a practice that makes visible and values the full range of competences (knowledge, skills and attitudes) that individuals have obtained in various contexts, and through various means in different phases of their lives' (ibid., p. 8). The RVA of learning outcomes is critical for establishing and facilitating flexible pathways between formal and non-formal educational programme modalities and between education, training and work. The cross-sectoral character of recognition

systems enables broader transferability of skills and improved migration management based on a country's priorities and needs.

Many governments acknowledge the importance of recognizing skills and qualifications in their commitment to facilitating the recognition of skills, competences and qualifications under the Global Compact for Safe, Orderly and Regular Migration (UNGA, 2019). This agreement implies shared responsibilities and the need for well-developed coordination mechanisms between all parties involved (Chakroun, 2018). These parties include the local, national and inter-national private and public stakeholders who are in charge of developing and implementing recognition processes (**Figure 3.1**).

In many countries, ministries of education have set up institutions and agencies to liaise with trade unions, NGOs, private-sector companies and other national bodies to set up RVA systems; however, recognition bodies often have no connection to the bodies responsible for integration and employment (OECD, 2014).

Figure 3.1. Key actors involved in the RVA process

Employers /
private sector and
associations

Trade unions,
social partners,
NGOs

Government:
Regulated jobs,
priority occupations
etc.

Recognition for
working

Frameworks for
recognition

Government:
Skills development
frameworks, qualification
frameworks etc.

Individuals

Recognition for
learning

Education /
Training providers

Government:
Accreditations,
learning pathways,
certifications

Source: ILO, 2018, p. 47

A stable structure of RVA for refugees, migrants and IDPs requires cross-sectoral cooperation, the development by the government of an enabling legal framework, and financing for all necessary activities (UIL, forthcoming). In addition, clarity and recognition of the individual roles of stakeholders are also important (UIL, 2018).

The challenges mentioned above are rendered even more complex by the fact that the RVA processes that have adapted to the needs of different target groups vary from country to country, depending on their respective legal frameworks and political situations. The procedures and bodies involved in official RVA processes differentiate between 'regulated and unregulated professions' (UNESCO, 2018a, p. 103). For refugees and migrants, who often lack evidence of work experience and formal qualifications, this can make the recognition of prior learning a complicated, time-consuming and resource-intensive process.

A review of 124 EU-funded validation projects operating under the Lifelong Learning Programme and European Social Fund found that few projects specifically ensured migrants' prior skills and competences were not devalued in their host country; instead, most projects used the same validation systems for citizens and migrants. The effect of these validation systems was to privilege highly-paid skilled migrants over lower-paid migrants (Souto-Otero and Villalba-Garcia, 2015).

Technology can play a vital role in facilitating and accelerating RVA; it can, for instance, address a lack of transparency and information in the RVA process. Moreover, internet portals can provide detailed information in several languages (the Annerkenung Deutschland [Recognition in Germany] website, for example, is available in nine languages). Another tool for accelerating the recognition process is the now-defunct European Skills Passport. It consisted of an online résumé where official documents could be

uploaded to enable institutions and authorities to certify skills and educational achievements. In Germany, the Bundesagentur für Arbeit (Federal Employment Agency) has developed MYSKILLS, a computer-aided self-assessment tool that helps jobseekers certify their prior skills and achievements (Bundesagentur für Arbeit, 2022).

Unlike refugees, IDPs are still residents or citizens of their country with the associated rights. Countries generally need to ensure processes for registering IDPs to provide them with the assistance they need in accessing education or employment. However, legal or factual barriers, such as language, documentation and residence regulations, can prevent IDPs from participating in local vocational training or job-creation programmes, while regulations on competence certification can mean that professional qualifications or training are arbitrarily not recognized (Brookings-Bern Project on Internal Displacement, 2008).

3.2 DIFFERENTIATED NEEDS OF YOUTH AND ADULT REFUGEES, MIGRANTS AND IDPS

3.2.1 Diverse linguistic backgrounds

Acquiring a new language at a proficient level can be especially challenging if the learner has low literacy skills in their mother tongue (Dahm and De Angelis, 2018). A systematic review found that four key factors influence the learning of a second language: (1) the level of oral proficiency in the learner's mother tongue, (2) the level of written proficiency in the learner's mother tongue, (3) the learner's exposure to and experience with literacy in and outside of formal education settings, and (4) the learner's motivation to learn (Burt, Peyton and Schaetzel, 2008).

The Defense Language Institute's Foreign Language Center in the USA estimates that a learner requires between 780 and 2,200 hours of instruction in a well-resourced course with isolated immersion to achieve an adequate level of proficiency in a foreign language. The speed

and level of language acquisition also depends on how similar the new language is to the first language, especially the script used. Other sources estimate that it takes three to five years to acquire oral proficiency in a foreign language (UNESCO, 2018b).

In addition, in their study of learners of English as a second language, Burt, Peyton and Schaetzel (ibid.) identified six groups of adult learners based on their sociolinguistic backgrounds:

- Preliterate learners, whose native language has no written form or is in the process of developing one (e.g. many Indigenous languages);
- Non-literate learners, who have had no previous access to literacy instruction;
- Semi-literate learners, who have had limited access to literacy instruction;
- Non-alphabet literate learners, who are literate in a language written in a non-alphabetic script (e.g. the Chinese and Japanese logographic systems);
- Non-Latin alphabet literate learners, who are literate in a language written in a non-Latin alphabet (e.g. Arabic, Greek, Korean, Russian, Thai); and
- Roman alphabet literate learners, who are literate in a language written in a Latin alphabet (e.g. French, German, Spanish), and read from left to right.

Learning other languages and developing literacy is complicated for refugees, migrants and IDPs, as it is usually not feasible to offer literacy programmes in all languages. Nevertheless, mother tongue-based multilingual education has been shown to benefit learners in terms of their language development, motivation and learning outcomes (UIL, 2016a). This approach also strengthens cultural identity and fosters the empowerment of local communities in linguistically and culturally diverse societies (ibid.).

When choosing priorities, there is a risk of alienating certain groups of learners. In the Kurdistan Region of Iraq (KRI), it was found that none of the 220 school-aged Syrian refugees

living in Daratu, a suburb of Erbil, the capital of KRI, attended state schools, as the language of instruction was predominantly a Kurdish dialect, Sorani. Students saw Sorani as an obstacle to learning, and they preferred to study and obtain certification in Arabic, as it would be more relevant upon their eventual return to the Syrian Arab Republic (Ahmadzadeh et al., 2014). Adequate literacy provision may therefore require advanced pedagogy from bilingual or multilingual teachers, which is not always available.

Another complexity could arise from the uncertainty of the length of stay in a particular place, as well as the type, purpose and circumstances of the move (either from one country to another, within the same country or returning to the original place of residence). The situation is even more difficult for learners who lack literacy skills in their mother tongue; this group has been found to need between seven and 10 years to learn a second language (Collier, 1989). In Uganda and Ethiopia, for example, which host the largest refugee populations in Africa, most refugees come from South Sudan, a country with a national literacy rate of just 27 per cent (Lanciotti, 2019). It is therefore likely that these refugees will have little to no literacy skills due to the impact of ongoing conflict on the schooling of children and youth, as well as the underdeveloped infrastructure in the country and the limited capacity of the education system to address its citizens' literacy needs. In the USA, 58 per cent of people who arrived as refugees were classified as having limited English proficiency even after more than 20 years of residence (UNESCO, 2018a). This suggests that many migrants can spend the rest of their lives without reaching a higher level of proficiency in the language(s) of their host country, which can affect their quality of life.

Participation and representation in socio-political areas of life are crucial for personal development, but are hampered for refugees and migrants who do not speak or understand the language of their host country. Adult education must therefore go beyond literacy and language provision for these vulnerable groups and encourage more learners to make their voices heard (Grotlüschen et al., 2021).

Social interactions with native speakers can also help newcomers acquire a sense of belonging (Pozzo and Nerghes, 2020). New migrants, especially migrant women, value real-life opportunities to practise new language skills in a variety of social situations (Adamuti-Trache, Anisef and Sweet, 2018). Inclusive literacy programmes where native and non-native speakers learn together thus have far-reaching benefits beyond second-language acquisition. Moreover, the motivation to learn a second language increases when learners see the impact on their daily lives, such as faster access to citizenship and better opportunities in the labour market.

Literacy curricula for refugees, migrants and IDPs should therefore build on learners' language skills and create a conducive learning environment that encourages interaction. Examples of positive outcomes in second-language learning suggest adapting repertoire-based approaches (that is, helping L2 language learners see their new language as a functional resource in their new environment), modifying instructional strategies and learning materials to make them culturally relevant, and taking into account learners' first language and self-efficacy (Kalocsányiová, 2017). Another option is a transformative critical-literacy approach (Dooley and Thangaperumal, 2011), in which pedagogy invites learners to practise their language skills through critical reflection and by engaging in constructive dialogue about their experiences. Such an 'emancipatory and counter-hegemonic pedagogy' (Heinemann, 2017, p. 18) can call power dynamics into question and lead to more equitable language-learning outcomes for learners from a migrant background.

3.2.2 Exclusion and intersecting inequalities

Different groups are excluded from literacy or education provision to varying degrees due to factors such as gender, disability and age. Intersecting inequalities refer here to inequalities between groups defined by some prominent aspect of their identity, and occur when a person belongs to multiple excluded groups, for example, disabled women or those in the poorest quintiles in rural areas (Crenshaw, 1989; Stewart, 2014).

Girls and women

The educational inequality of girls and women is reflected in the estimated literacy rate of just 8 per cent among female refugees (UNHCR, 2016b). Research from Australia has found that some eligible adult women prefer non-formal community learning centres over formal schools for personal and sociocultural reasons, such as less commitment, shorter duration of courses, and relaxed environments with no formal assessment (Ahmad, Armarego and Sudweeks, 2017). Women also face many other gender-related challenges, such as domestic work expectations, scarcity of transportation and a lack of access to sanitary products. These issues can be particularly acute for single mothers (Gladwell et al., 2016; Hanemann, 2018; UIL, 2019). Female teachers and educators are also particularly underrepresented in refugee situations, with security concerns and cultural prejudices cited as the principal problems faced by women (UNESCO, 2018a). This applies to the recruitment and retention of female teachers in both refugee camps and camps for IDPs.

People with disabilities

Research to date on the experiences of youth and adult refugees, migrants and IDPs with disabilities in literacy programmes posits that their participation is very limited. For example, while considerable efforts have been made in Uganda to include South Sudanese women in adult literacy courses, very few refugees with disabilities have been enrolled (Lanciotti, 2019). However, a 2019 study of Arabic-speaking refugees, migrants and IDPs revealed that around 10 to 30 per cent of the 3,200 Syrian refugees living in Jordan and Lebanon had some form of disability (Banes, Allaf and Salem, 2019). The disabilities experienced by these refugees include physical, sensory and intellectual impairments, chronic disease and injury. Refugees with disabilities are also twice as likely as the general refugee population to report psychological distress, increasing to over 65 per cent for refugees aged 60 and over. Moreover, an estimated 45 per cent of refugees with disabilities

report problems performing daily life activities (Handicap International, 2014), including obstacles to accessing literacy and education opportunities because of a lack of adequate transport to learning locations in camps or urban environments, physical barriers, a lack of teacher-training in inclusive educational practices, social stigma, and a lack or loss of assistive technology devices (Handicap International, 2014; Smith-Khan and Crock, 2018; UNESCO, 2018a).

These barriers exemplify a central notion in the Convention on the Rights of Persons with Disabilities, which states that while impairment alone does not cause disability, failing to adapt and help people with disabilities does (UNESCO, 2018a). Adopting a universal design for technology, based on the Universal Design for Learning (UDL) framework for inclusive and flexible curricula, has been suggested as a way for digital content, platforms, devices and infrastructure to accommodate refugee, migrant and IDP learners with disabilities in Arabic-speaking contexts (Banes, Allaf and Salem, 2019).

Settlement location

People in refugee camps may face exclusion from educational opportunities, whether those opportunities are digital or not, due to a lack of freedom of movement – especially the right to come and go freely from refugee camps. They must also rely on the communication infra-structure and connectivity of the camp, over which they have little control (Gladwell et al., 2016; Hanemann, 2018). Conversely, refugees and asylum-seekers in Europe may find that they are relocated frequently before finding a permanent location, which means that if they manage to start a course, their learning is interrupted (Hanemann, 2018). Other factors that can preclude refugees, migrants and IDPs from accessing available courses may include the need to work when courses are scheduled, the inability to access child care while attending courses, and psychosocial well-being (UNESCO, 2018a).

3.2.3 Psychological trauma and language and literacy learning

Stress and trauma are known to impede cognitive functions such as attention, focus and working memory, all of which negatively impact learning (Van der Kolk, 2014). Refugees' mental health is affected by resettlement strains such as migratory stress, acculturative stress and traumatic stress resulting from the violence experienced in conflicts and war (Finn, 2011). Depression, flashbacks, feelings of insecurity, reluctance to trust, as well as concentration and memory loss, are all symptoms of refugee trauma (Finn, 2011; Isserlis, 2000). For adult refugees, the harmful impacts of such trauma and stress can linger for a decade or more after migrating (Cerna, 2019).

While there is little literature on IDPs, many of the reasons for displacement are the same and, similarly, the migratory stresses they experience are compounded by the essential process of acculturation that occurs when adapting to a new environment (Bustamante et al., 2017). These major stresses have ramifications in various areas, including mental health. In fact, according to a study conducted by Bustamante, et al. (ibid.), 47 per cent of migrants suffer from post-traumatic stress disorder (PTSD), with refugees suffering at nearly double the rate of migrant workers.

Trauma has a detrimental effect on learning that may be difficult to detect; for example, some school activities may act as emotional triggers for survivors of traumatic situations. They could trigger a 'fight or flight' response, panic attacks or feelings of rage and despair (Stone, 1995, as cited in Palanac, 2020). A common reaction to cope with this sensory onslaught is to detach from traumatic thoughts, feelings, memories and one's sense of self (Van der Kolk, 2014). Untrained facilitators may misunderstand such behaviour as a lack of motivation in adult education and learning settings. However, research and training into appropriate trauma-informed pedagogies is limited and dispersed throughout various fields, including English-language education, refugee studies, trauma psychology and positive psychology (Isserlis, 2000). As a result, teachers find it difficult to acquire the necessary

information and skills to deal with such learners. Moreover, most of the trauma-informed pedagogy that exists for refugees primarily targets children (UNHCR, 2019a).

Recognized trauma-informed teaching practices emphasize listening to learners and raising concerns about violence in one form or another. They also customize content and activities to give learners space and choice, enabling them to choose their participation level. In addition, these practices help access community resources and avoid the assumption that all migrant learners are victims of trauma (Isserlis, 2000). A clear structure, familiar peers and reliable, long-term educators are also crucial to student success and conducive to developing their confidence and building trust (Finn, 2011).

3.3 ICT-SUPPORTED LITERACY FOR REFUGEES, MIGRANTS AND IDPs

Because of their flexibility and ability to be personalized and, under the right circumstances, sustainably scaled, ICTs can provide educational opportunities for both youth and adult refugees, migrants and IDPs (Joynes and James, 2018; Lewis and Thacker, 2016; UNESCO, 2018b). Indeed, studies have shown that ICTs can have a significant impact on all phases of the migration cycle; that is, before migration, after migration and during resettlement (Hiller and Franz, 2004).

It is necessary to remain aware of the fact, however, that the use of ICTs to support literacy and education should not be isolated but instead interact with issues of gender, culture, and socio-economic and educational background (Dahya and Dryden-Peterson, 2016; Jones et al., 2017). ICTs have been seen to introduce additional literacy learning challenges for refugee learners of foreign languages, who face significant barriers when negotiating unfamiliar social and cultural environments while simultaneously dealing with digital devices, systems, applications and online information (Smyser, 2019).

The following sections assess the available evidence to show different approaches to using ICTs in the literacy education and learning of

youth and adult refugees, migrants and IDPs. Basic requirements in terms of device ownership, connectivity, broadcast coverage and affordability are addressed while demonstrating the educational value of ICTs for literacy and language learning.

This section also examines recent developments in mobile-assisted learning, the needs of refugee, migrant and IDP learners and the identified digital skills of these three target groups, additional learning materials that can be used, and the capacities of educators, facilitators and teachers to promote the use of innovative methods to address the literacy needs of refugees, migrants and IDPs.

3.3.1 Approaches to using ICTs for the literacy learning of refugees, migrants and IDPs

ICTs, which include radio, television, film and digital technologies, can provide literacy programmes to a large number of migrants and displaced persons who would otherwise be unable to access them in person (Hallgarten, Gorgen and Sims, 2020; UNHCR, 2016a; UNESCO, 2018b). In the wake of the COVID-19 pandemic in 2020, radio, television and digital technologies, or combinations thereof, enabled access to literacy resources and programmes despite social distancing and other health and safety measures affecting activities like large face-to-face classes. Data on access to ICTs by refugees, migrants and IDPs are sparse and very context-specific; **Table 3.1** provides a proxy by examining national-level data relating to multiple types of ICTs. The top five origin and host countries for each population have been identified to provide an overall view of their ICT infrastructure and the level of access to the most common ICT devices and types of connectivity by an individual.

Radio-based literacy learning

Owing to its low cost and extensive reach, radio is often considered one of the most accessible broadcast technologies (Hallgarten, Gorgen and Sims, 2020); however, **Table 3.1** shows that, in

virtually all countries that refugees, migrants and IDPs originate from or live in, there is lower household ownership of radios compared to television and mobile cellular phones. At the same time, radio may be more appropriate in certain circumstances and countries, such as in Uganda (see **Table 3.1**), since it is more accessible to individuals who are unable to afford other forms of technology and those living in rural locations without access to television or mobile coverage.

Interactive radio instruction (IRI) has long been used to address a shortage of educational resources among refugees and rural children, and the need for educational programmes for youths and adults who have dropped out of school or formal education (Bosch, 2004). There is well-documented evidence of learning gains, increased civic participation, better health and economic returns from learner participation in IRI (ibid.). Radio is also the dominant media channel in some countries (Winthrop and Smith, 2012). During the COVID-19 pandemic, 92 per cent of low-income countries used radio for distance learning in response to school closures, compared to 25 per cent of high-income countries, indicating the relevance of radio to learning in countries with high populations of refugees and IDPs (UNESCO, UNICEF and The World Bank, 2020).

At the same time, assumptions about better radio accessibility should not be made without supporting evidence. In India, a 2017 survey showed that household ownership of radios was at 8 per cent compared to household television ownership of 65 per cent and mobile phone ownership (comprised of feature phones and smartphones) of 90 per cent (Van Cappelle et al., 2021). In Afghanistan, around 50 per cent of internally displaced youth reported having a radio in their household and 25 per cent had a television; however, close to 100 per cent had access to a basic mobile phone. Nevertheless, in terms of exposure to media, less than 5 per cent had ever used the internet. Radio and television were found to be the most common forms of media exposure, although exposure differed significantly by gender and province (Alami et al., 2019). The type of access to technology and

Proportion of households with							
	Radio	Television	Mobile cellular phone	Percentage of individuals who own a mobile phone	Active mobile cellular subscriptions per 100 inhabitants*	Active mobile broadband subscriptions per 100 inhabitants*	Percentage of population using the internet#
Top five countries of origin for refugees by number (incl. Palestine under the United Nations Relief and Works Agency for Palestine Refugees [UNRWA])							
Afghanistan	-	-	-	47% (2016)	59	19	11%
Syrian Arab Republic	-	-	-	-	114	12	34%
South Sudan	-	-	-	-	20	6	8%
Bolivarian Republic of Venezuela	-	-	-	-	47	54	64%
Myanmar	15.2 (2017)	54.5 (2017)	81.5 (2017)	62% (2017)	114	93	23.6%
Palestine	55.6 (2019)	90.7 (2019)	97.3 (2019)	75% (2019)	86	19	70.6%
Top five host countries for refugees by number							
Turkey	-	-	99.4	-	97	75	74% (2019)
Colombia	69.7 (2018)	90.7 (2018)	95.2 (2018)	73% (2019)	132	59	65%
Pakistan	6.4	62.8	93.9	45% (2019)	76	35	17% (2019)
Uganda	59	19.1	76.9	-	57	13	24%
Germany	-	-	-	-	128	87	88% (2019)
Top five countries with IDPs by number							
Democratic Republic of the Congo	37.6 (2017)	19.4 (2017)	46.5 (2017)	-	43	20	9%
Colombia	69.7 (2018)	90.7 (2018)	95.2 (2018)	73% (2019)	132	59	65%
Syrian Arab Republic	-	-	-	-	114	12	34%
Yemen	-	-	-	-	54 (2018)	6 (2017)	27%
Afghanistan	-	-	-	47% (2016)	59	19	11%
Top five countries of origin for migrants by number							
India	-	-	-	-	84	47	20.1%
People's Republic of China	-	-	-	-	122	97	70.6% (2020)
Mexico	53.9 (2019)	92.5 (2019)	89.4 (2019)	71% (2015)	96	76	72% (2020)
Russian Federation	-	-	-	97% (2019)	164	97	85% (2020)
Syrian Arab Republic	-	-	-	-	114	12	34%

*Figures from 2019 unless otherwise stated.
#Figures from 2017 unless otherwise stated.

Source: ITU, 2020, 2021

exposure to information by those taking part in literacy programmes is therefore considered to be context-specific and diverse.

An example of a successful radio-based programme for youth internally displaced by conflict is the Somali Distance Education and Literacy (SOMDEL) project. SOMDEL has produced a condensed curriculum focusing on basic literacy and numeracy, environmental studies, life skills and livelihood, and economic self-sufficiency. It manages to reach a large proportion of women, who make up 75 per cent of learners. SOMDEL uses a blended-learning approach that combines weekly half-hour radio broadcasts with printed materials and weekly community-based in-person instruction run by volunteer teachers who receive minimal remuneration. Recorded radio broadcasts are made available to those who have no radio coverage or who work during the planned broadcast to enable a wide section of the IDP population to access content (UIL, 2016b).

Television-based language and literacy learning

Table 3.1 shows that, in the countries of origin and destination of refugees, migrants and IDPs, television penetration is generally broader than radio but lower than mobile cellular phones. Television offers many advantages for literacy learning because of its accessibility, multimodal graphics, acoustic and orthographical formats, and the enjoyment it offers people (Richards, 2015). Television promotes language learning through improved listening comprehension, vocabulary acquisition and intercultural aware-ness. Second-language learners often mention that they consider watching movies and other programmes on television a good way of learning a language (ibid.). Multi-episode television series often provide viewers with captions[5] or subtitles,[6] which help them to learn everyday words and phrases, a process known as 'resourcing' (Hanf, 2014, in Richards, 2015). In a study by Perry and

Moses (2011) of adult Sudanese refugees living in the USA, for example, closed captioning helped the target group practise their English-language skills.

Computer-assisted literacy and language learning

Another body of research examined the use of computers for literacy and language learning among settled refugees and migrants in high-income countries such as Australia, the Nether-lands, Sweden and the USA (Spotti, Kluzer and Ferrari, 2010; Van Rensberg and Son, 2010); however, most of this research precedes the advent of mobile technology and therefore does not address mobile phone affordability, computing power, mobile broadband and portability. The significantly lower proportion of households that own a computer compared to those that own a mobile phone in **Table 3.1** reflects this shift. In Northern Iraq, for example, a survey of refugees and IDPs found that, with regard to the latter, only 3 per cent used tablets, 8 per cent laptops and 1 per cent desktop computers. Refugees, by comparison, had more access to tablets at 15 per cent, as well as laptops (34 per cent) and desktop computers (9 per cent). Smartphone usage among both groups was even higher, at 70 per cent for IDPs and 87 per cent for refugees (Sabie et al., 2019).

Nevertheless, the ongoing use of computers in emergency contexts and for language learning in developed countries shows their continued rele-vance to discussions about ICT-based literacy programmes. Computers provide flexibility in learning languages and developing literacy, support learning through educational games, allow learners to interact with one another using applications such as online forums, and enable educators to teach in a more differentiated and individualized manner (Van Rensburg and Son, 2010).

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[5] Captions refer to closed captioning in a film or television series' original language (e.g. English).
[6] Subtitles refer to closed captioning that has been translated into another language.

Mobile phones and smartphones for literacy and language learning

Mobile phones and smartphones have become the most accessible digital devices in many contexts and among refugees, IDPs and migrants. As **Table 3.1** shows, the most commonly owned device in most households is a mobile phone. An estimated 39 per cent of refugee households worldwide have internet-enabled mobile technologies, and 32 per cent own a basic phone (UNHCR, 2016a). While the potential of mobile technologies for education is generally recognized, recent reviews of the literature on literacy and refugees have found that there is limited evidence that mobile language learning applications can effectively support refugees in acquiring proficiency in a foreign language (UNESCO, 2018c). Mobile learning is constrained by the cost of mobile phone subscriptions, the availability of mobile internet access, and the compatibility of operating systems and phones with accessible content in refugee and migrant contexts (Lewis and Thacker, 2016; Gaved and Peasgood, 2017).

A survey of four camps in Northern Iraq that host Syrian refugees and Iraqi IDPs found that smartphones were the device most widely available, at 87 per cent and 70 per cent, respectively. Laptop usage was roughly half this figure (34 per cent for refugees), but much higher than desktop or tablet usage (Sabie et al., 2019). As regards ICT usage, internally displaced Iraqis were found to operate under more resource constraints than Syrian refugees. Moreover, ownership rates among IDPs were lower for smartphones, basic phones, SIM cards, tablets, laptops and desktops. Phone ownership rates among girls and women was particularly low. Cost was cited as the primary reason for the limited use of ICTs (ibid.).

Similarly, a survey of Syrian and Palestinian youth living in Egypt, Lebanon and Palestine in Gaza and the West Bank found that 95 per cent had access to a smartphone, 85 per cent to the internet and 81 per cent to a computer, while only 21 per cent had access to a tablet (Simas et al., 2017). A mixed-methods study in refugee

settlements in Kakuma (Kenya) and Nakivale (Uganda), which included youth and adult refugees from Burundi, the Democratic Republic of Congo, Rwanda, Somalia and South Sudan, found that mobile phone access was 98.7 per cent in Kakuma and 93.4 per cent in Nakivale. Smartphone ownership was 44 per cent and 26 per cent, respectively – both well above the national smartphone penetration rates of 26 per cent in Kenya and 4 per cent in Uganda. Device cost was the most significant barrier cited by respondents. Smartphone ownership was higher among younger and more educated men, while income did not directly affect smartphone ownership (Hounsell and Owuor, 2018).

In Malaysia, a 2015 survey of migrant workers from Indonesia, Myanmar, the Philippines, Bangladesh and Nepal found that 92 per cent of migrants possessed a mobile phone and 61 per cent had a smartphone (ILO, 2019). In Sweden, most Arabic-speaking migrants who arrived in the country from 2015 onwards were found to have a mobile phone in order to keep in touch with friends and family (Bartram, Bradley and Al-Sabbagh, 2018; Bradley et al., 2020). The possession of and access to mobile phones and smartphones among migrants and IDPs in different settings shows that, while such use is widespread and growing, it is diversified and influenced by various factors, including the type of phone, gender, age and level of education.

3.3.2 Barriers to accessing ICT-based literacy learning

Cost, electricity supply and network coverage

Access to ICT devices is only the first step in empowering refugees, migrants and IDPs through literacy and education; without the internet, they will not be able to download and use publicly available online resources. For the most part, refugee camps and settlements lack wireless access; refugees, migrants and IDPs therefore access the internet primarily via mobile data plans. In the camp in Northern Iraq, for example, Wi-Fi was only available once or twice a week in the administrative office of a local NGO

(Sabie et al., 2019). In Kenya and Uganda, there was almost no access in the Kakuma camp and only at a community technology access centre in the Nakivale camp, respectively (Hounsell and Owuor, 2018). The cost of charging SIM cards and purchasing, maintaining and repairing mobile phones is a significant barrier to internet access for refugees and IDPs (Hounsell and Owuor, 2018; Sabie et al., 2019), and migrants who have recently settled in developed countries very often experience financial difficulties. Language learning applications should therefore be designed to work on a range of digital devices, including budget models with interactivity made possible by sporadic, occasional internet access (Kukulska-Hulme et al., 2017).

Network coverage is another factor that affects access to digital learning platforms. It has been estimated that, in general, the refugee population has roughly the same network coverage as the rest of the world: 31 per cent have 2G coverage, 62 per cent have 3G coverage, and only 7 per cent have 1G coverage. However, according to research carried out by the UNHCR (2016a), 20 per cent of the rural refugee population have no network coverage, which is twice the global average, while 63 per cent have 2G coverage and 17 per cent have 3G coverage.[7]

Network coverage varies significantly in the refugee settlements in Kakuma and Nakivale, which are both rural and isolated. In Kakuma, almost everyone has cellular coverage, but only about 40 per cent have 3G/4G coverage, which enables internet access. In comparison, 90 per cent of the Nakivale refugee population has cellular coverage, with 64 per cent having 3G, mainly from a tower in the centre of the settle-ment (Hounsell and Owuor, 2018). Poor network coverage is also cited as a major obstacle for IDPs in Northern Iraq (Sabie et al., 2019).

Refugees who settle in developed countries but do not have a recognized ID tend to encounter significant problems when registering for a SIM card to access the internet. Rohingya refugees face this problem in Malaysia, where purchasing a SIM card requires a national identity card, which they are not entitled to (Netto et al., 2022). Refugees in Germany who do not have permanent residence status have reported similar difficulties obtaining a long-term mobile phone subscription. This was the reason why most respondents in a study in 2019 reported relying on overpriced pre-paid SIM cards bought in telephone shops or supermarkets (Artamova and Androutsopoulos, 2019).

Digital skills

The use of digital devices requires developing specific skills to operate different parts of the computer, tablet or mobile phone and to access and navigate the internet. These skills have been referred to variously as computer literacy, ICT skills, technical literacy and digital literacy (Hallgarten, Gorgen and Sims, 2020; Spotti, Kluzer and Ferrari, 2010; Van Rensburg and Son, 2010). The term 'digital skills' refers to the basic operation of digital devices and the effective use of the devices and the internet for literacy and language learning purposes.

The digital skills of refugees and migrants have been found to vary widely, with some requiring extensive support and guidance as part of ICT-based literacy and education programmes. For example, whereas Syrian refugees are considered to be 'tech savvy' (UNESCO, 2018b), Sudanese female refugees in Australia were found to have little or no experience with computers before participating in an English-language programme that included a two-hour computer training class (Smyser, 2019; Van Rensburg and Son, 2010). Similarly, an Italian programme to promote employment and literacy with the help of computers found that migrants from 15 countries in Africa, the Middle East and Southeast Asia could not use computers without extensive support from facilitators (Damiani and Agrusti, 2018). Because of their low ICT skills and limited knowledge of Italian, many participants quickly became demotivated (ibid.).

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[7] To find out more about the difference between 1G, 2G, 3G and 4G, visit https://www.lifewire.com/1g-vs-2g-vs-2-5g-vs-3g-vs-4g-578681 [Accessed 13 March 2022].

The availability of multifunctional smartphones does not always correlate with their use for literacy learning, either; in fact, studies have shown that few refugees explicitly associate mobile technologies with learning (Leung, 2011; Smyser, 2019). For example, Syrian refugees and internally displaced Iraqis use social media and messaging platforms to engage and communicate socially with friends and family members, but only to a limited extent to access news or educational content (Mason and Buchmann, 2016; Sabie et al., 2019).

3.3.3 Factors that enhance the quality of ICT-based literacy learning

Mobile- and computer-assisted language learning and literacy education

In a comprehensive review of the use of technologies to support refugee education, UNESCO found that mobile-assisted apps are 'widely promoted as key tools for language learning' (UNESCO, 2018b, p. 19). Using a mobile phone for language learning and literacy development has various advantages because of a mobile phone's all-in-one nature (i.e. no need for a mouse, keyboard or screen), relative ease of use, its portability and multifunctionality (i.e. it is simultaneously a computer, camera, video recorder and voice recorder, among others) (Ahmad et al., 2017; Smyser, 2019). Perhaps it is for these reasons that, as previously noted in Section 3.3.1, mobile phone ownership rates are higher than for other ICT devices among refugees, migrants and IDPs, who value the easy-to-use functions for communication and accessing information. Although these groups use their mobile phones for various purposes, they are used mainly to communicate with family and friends and access entertainment and information (Sabie et al., 2019; UNHCR, 2016a).

Most of the literature on using mobile phones for language learning has focused on formal settings, short timeframes and vocabulary development (Burston, 2015; Godwin-Jones, 2011). One example is a small mixed-methods study that examined how mobile-assisted,

tablet-based learning could support the development of English vocabulary among migrant women in Australia compared to conventional print-based learning (Ahmad, Armarego and Sudweeks, 2017). The shift towards informal, self-directed learning among refugees and migrants has been prompted by the increasing use of mobile phones and the availability of online resources for literacy and language learning, enabling learners to experience more effective language practice than with resources available in the classroom (Richards, 2015; Kukulska-Hulmes, 2017). This body of research focuses on how mobile-assisted language learning in informal contexts fits the needs and lives of refugee and migrant learners from non-EU countries who have settled in the EU (Jones et al., 2017; Bradley et al., 2020; Kusulka-Hulme et al., 2017).

A qualitative study of 17 Spanish-speaking immigrants learning English in the UK found that, to be successful, mobile applications for literacy need to provide content that supports personally relevant and practical learning while also facilitating language skills development (Jones et al., 2017). It also found that social support – fostered through online forums for peer-to-peer engagement and for the programme facilitator to address content or technical problems – in conjunction with self-directed learning is crucial. The social element was similarly highlighted in Bradley et al. (2020), with participants keen to share content with other application users. Successful integration and literacy development therefore need more than just a standard app or a short-term project; rather, resources should be allocated to provide social support in mobile learning, such as mentors or volunteers who act as facilitators (Jones et al., 2017, p. 248).

Arabic-speaking migrants in Sweden who were involved in both the evaluation of their language learning needs and the design of a language learning application for Android smartphones were more motivated to use the application when the functions were 'tightly connected to practical everyday situations … for instance, when seeking to be understood in everyday situations' (Bradley et al., 2020, p. 10). This

supports the findings of another study with Mandarin-speaking migrants in Canada, who wanted to be able to use vocabulary and colloquial language appropriately in certain situations and real-life contexts (Demmans Epp, 2017).

Self-directed learning is an important aspect of mobile-based learning. It has been characterized as a 'basic human competence' (Knowles, 1975, p. 17); the underlying principle consists of responsibility for one's own learning through self-generating activities (Hiemstra, 1994; Knowles, 1975; Long, 1989). Self-directed learning can require significant support to foster and build self-confidence among refugees and migrants, however, especially those who are accustomed to teacher-led educational cultures (Jones et al., 2017; Kukulska-Hulme et al., 2017). A recent study by García Botero, Questier and Zhu (2019) found that even highly educated university students found it difficult to use Duolingo, a popular language application, outside of class to learn Spanish in a self-directed manner.

The sociocultural context in which refugees and migrants learn must also be considered. Research on this topic has revealed that learners felt the need for privacy and quiet surroundings while studying, preferred to make language learning a family activity, felt embarrassed when using their mobile phones differently from others around them, and had difficulties in finding time to study (Jones et al., 2017; Kukulska-Hulme et al., 2017).

What follows are selected examples of different mobile applications that have been implemented to address the literacy learning needs of refugees and migrants. It should be noted, however, that the literature on IDPs, their use of technology for literacy and language learning and their technology practices in general is limited.

Mobile applications designed for research projects

University research initiatives can help to produce useful, high-quality language and literacy learning computer and mobile applications for refugees

and migrants. The smartphone apps of two projects, MASELTOV (Mobile Assistance for Social Inclusion and Empowerment of Immigrants with Persuasive Learning Technologies and Social Network Services) and SALSA (Sensors and Apps for Languages in Smart Areas), use the location of smartphones for context-based language learning. The EU's MASELTOV programme comprises a range of services to support the integration of refugees and migrants. They include language learning, translation and social forums. SALSA, used in the UK, also supports language learning. Both systems use geographic data to provide language learning relevant to the learners' environment and the challenges they may encounter (Charitonos and Kukulska-Hulme, 2017).

Other apps facilitate both language learning and the integration of refugees and migrants. MOIN is a German app that promotes language learning by allowing refugees to chat with locals. MoLeNET also allows refugees and migrants in the UK to document artefacts that they find interesting in museums. The app includes blog discussions and speaking activities with peers and teachers (UNESCO, 2018b).

Mobile applications designed by governments

Few governments fund mobile applications to support refugee and migrant integration through language learning; however, in Germany, which hosts the largest refugee and asylum-seeking population of any high-income country, various ministries and authorities of the federal government have designed and implemented large-scale programmes to help refugees learn German and integrate into German society. The Federal Office for Migration and Refugees has an app called Ankommen, German for 'arrive', which provides information about life in Germany and language support. The language component of the application is interactive and focuses on the likely daily needs of refugees and migrants in their first few weeks in Germany (UNESCO, 2018a). The apps are specifically designed to combine language learning exercises and practice with information on other educational and everyday needs. Moreover, the country's

adult education centres, known as Volkshoch-schule or VHS, offer online courses and self-directed language learning applications that refugees and migrants can access through Chromebooks at a VHS or through NGOs (Hanemann, 2018). The motivation for designing these applications was to allow refugees to start learning German even if their applications for asylum or refugee status had not yet been processed. These apps take advantage of the high number of smartphones among the refugee population arriving in Germany, and the flexibility of informal self-directed learning that charac-terizes language learning supported by mobile devices. Similarly, in Norway, the Norwegian Agency for Lifelong Learning has tested an application for adults to learn Norwegian primarily through writing. While this requires a basic understanding of Norwegian, the app can be tailored to the learner's language (ibid.).

Mobile applications from non-profit organizations and the private sector

NGOs and the private sector have also become important actors in developing computer and mobile applications for language learning and literacy in foreign or second languages. Refugees and migrants seem to take advantage of these developments, especially when freely available.

UNESCO has identified several examples of ICT-based tools that refugees use for basic foreign or second language learning. For example, Duolingo is a free app that uses various activities such as games, multiple-choice exercises and short stories to make language learning more engaging. It also provides users with immediate and weekly feedback on progress. Merhaba Umut, Turkish for 'hello hope', is an app designed by TURKCELL, a Turkish telecommunications company. It was developed for Syrian refugees in Turkey and comprises various literacy and digital skill levels to support their integration. It includes an instant voice-activated translator, and language flash-cards with photos and audio recordings. Merhaba Umut had 35,000 weekly users by early 2018, and an in-app survey showed that learning Turkish was its most popular feature (ibid.).

In future, dedicated research should examine the effectiveness of various computer and mobile applications for foreign- and second-language learning, especially for refugees and migrants, and analyse the factors that offer them support in learning a language and improving literacy.

The role of trained educators and high-quality, relevant learning materials

Research on the use of technology in education programmes for refugees, migrants and IDPs highlights the need for effective facilitation by trained educators or facilitators as part of feedback, motivation and social engagement processes in the development of literacy. Adult literacy programmes, with or without ICT support, benefit from highly skilled and trained teachers able to accommodate different learning styles (for language support, see Section 3.2.1) and, in the case of displaced persons, teachers who can address the socio-emotional needs of students who may have suffered trauma.

Adult literacy programmes for refugees often benefit from recruiting refugees as teachers; however, recruiting enough staff with an adequate level of education can be a challenge due to high turnover as many recruits leave to find better jobs elsewhere (Lanciotti, 2019). As mentioned earlier, the composition of teachers is also often gendered, with female teachers facing safety issues when travelling to and from schools and cultural barriers that lead spouses or families to disapprove of their employment. This affects both the recruitment and retention of female teachers. A report on the adult education situation for refugees in Malta found that, where adult literacy and language courses are offered, they are often run by NGOs and delivered mainly by volunteers who do not have adequate pedagogical training (Bugre and Chana, 2018).

There is a considerable need for relevant learning materials that are culturally sensitive and in the learner's native language. Since an important stepping stone for learning is explaining basic concepts in the learner's native language, a lack of study materials or of teachers who are

proficient in that language could hinder literacy learning (Hanemann, 2018). The lack of Arabic educational resources was identified as a major obstacle for Arabic-speaking refugees with disabilities. In addition, it has been suggested that Muslim learners feel more comfortable using symbols and images that reflect their culture and religion. For example, freely available Tawasol symbols can support the understanding of Arabic texts with their text-to-speech function; this aids both literacy and verbal communication. Based on this, learning materials for refugees with disabilities should anticipate the needs of learners by fulfilling clearly defined accessibility criteria and providing information in various formats. These should include culturally and linguistically sensitive symbols or images and different print formats (Banes, Allaf and Salem, 2019).

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4. Technology use to overcome challenges faced by literacy and education programmes

Chapter 4 looks at the key findings from thematic analyses of the 25 programmes selected. The findings offer practical and actionable insights into strategies to address some of the most common challenges identified in the programmes and the literature review. The findings are organized into six thematic areas: (1) access and inclusion; (2) capacity-building for educators/facilitators; (3) relevant content and innovative instructional approaches; (4) monitoring and evaluation; (5) strategic partnerships; and (6) recognition, validation and accreditation (RVA). Each thematic area presents a synthesis table of programmes, highlighting the strategies followed (Column 2) to mitigate the key challenges (Column 1). Column 3 lists the specific programmes that have adopted the strategies described in Column 2 of each synthesis table.

Illustrative programmes relevant to the six thematic areas show how strategies have been developed to address different challenges. While the six thematic areas categorize these selected programmes to provide a clear presentation of the findings, it should be noted that programmes often use a combination of different strategies from all six areas to address the specific challenges they face. For example, the Kiron Campus programme (Section 4.1) built its interface to be low bandwidth and easy to use to accommodate refugees' extensive use of smartphones and potential unfamiliarity with online learning platforms. It also collaborates with several partners and stakeholders (Section 4.5, 'Strategic partnerships') to ensure that the curriculum is relevant to the context of the learners (Section 4.3, 'Relevant content and innovative approaches').

4.1 ACCESS AND INCLUSION

Access to ICTs for refugees, migrants and IDPs is a prerequisite for inclusion (Khanlou et al., 2021; UNHCR, 2016a), and inclusion is an essential part of programming, as it ensures that initiatives target the most marginalized people and not just those who already have access to education and learning. Multiple factors, including digital inequalities, can exacerbate marginalization among refugees, IDPs and migrant populations seeking literacy programmes and other adult education opportunities (Smythe and Breshears, 2017). In addition to being marginalized as refugees or IDPs, girls, women and people with disabilities face particular forms of exclusion.

Providing access, removing barriers to access and improving inclusion are essential first steps in many of these programmes. **Table 4.1** summarizes some of the key challenges they face and the strategies they use to address access and inclusion issues. While some programmes follow a completely self-sufficient model, others use existing ICT infrastructure to deliver content. Frequently, the programmes employ a combination of strategies and technologies; more fundamental strategies include distributing devices, improving existing technological infrastructure, using available resources and technologies, broadcasting radio-based curricula, combining radio broadcast programmes with basic mobile phone functions (e.g. Short Message Service [SMS]), providing printed materials, installing alternative energy sources and Wi-Fi hotspots, as well as producing and using bite-sized lessons for low bandwidths or 2.5G networks.

Other strategies combine low-tech and high-tech approaches, giving learners flexibility in choosing among different programmes and applications, and improving the user interfaces

of platforms and feedback systems. The transition to mobile-first formats and platforms, and mobile-friendly interfaces and designs, is a common strategy in many programmes and corresponds to the already high and ever-increasing use of mobile phones and smart-phones among refugees, migrants and IDPs.

The programmes also demonstrate that they recognized and considered learners' needs and linguistic backgrounds, contributing to better outcomes. Specific strategies included providing parental leave and preparatory programmes for women, using Individual Education Plans (IEPs) with assistive technology for learners with disabilities, diversifying primary language menus to learn a host language, and establishing partnerships with universities to address the needs of learners with disabilities.

Many of the programmes use technologies deliberately and flexibly to enhance various components of literacy learning, motivation, the social aspect of learning and encouragement.

Table 4.1. Challenges and programme-specific strategies for access and inclusion		
Challenge	Programme strategy	Name of programme
Limited access to electricity, ICT devices and reliable high-bandwidth internet connections	Radio-based literacy instruction	Broad Class – Listen to Learn
	Combine radio-based content and SMS function of basic mobile phones to enhance learning Toll-free hotline for learners to call and communicate their concerns with the programme	Rising On Air
	Micro courses offering bite-sized learning in small content chunks; learners can respond to questions using SMS	M-Shule
	Alternative energy sources/power devices that can act as Wi-Fi hotspots and storage devices for downloaded data Low-bandwidth applications (e.g. WhatsApp) that run on a 2.5G network Provide learners with devices and digital infrastructure Opportunities for more asynchronous learning formats, thereby limiting the pressure on bandwidth due to live/synchronous meetings involving a large number of learners	Education for Humanity
	A combination of low-tech and high-tech approaches, e.g. providing print materials for learners with limited or zero access to technology while also offering digital content	BASAbali
	Learners given flexibility to choose from various applications (e.g. Google Meet, Zoom, Facebook Messenger and WhatsApp), allowing them to use the most familiar application and overcome connectivity limitations	Paper Airplanes

Challenge	Programme strategy	Name of programme
Limited access to electricity, ICT devices and reliable high-bandwidth internet connections	Community workshops to help learners adapt to using digital platforms and new technologies	Global English Language Programme
	Platform available as a low-bandwidth Android application for smartphones or a website optimized for use on mobile phones; user interface is simple and easy to navigate	Kiron Campus; Thabyay eLearning Platform
	Learning management applications designed to be available offline	vhs-Lernportal
Gender disparity in accessing learning opportunities	Offers of parental leave and a preparatory programme to help women and girls with the admissions process	Kepler Kiziba
Learners with disabilities face marginalization and have greater difficulties accessing learning opportunities	Utilizes Individual Education Plans (IEPs) that take advantage of the assistive technology functions offered by laptops and tablets Learners encouraged to use interactive education programmes and social media platforms Families and learners involved in the development of IEPs using free services like WhatsApp to communicate progress	UNHCR and Makhzoumi Foundation Mission with I'dad Center (Friends of the Disabled Association [FDA])
Limited content available in languages other than English	Content available in multiple languages	Kiron Campus; vhs-Lernportal
	Language learning app that provides access to real-time public media, such as TV channels, with subtitling in 25 languages to support Swedish-language learning	SVT Språkplay
Refugees have limited access to higher education	Partnerships with brick-and-mortar universities to offer tertiary-level online courses and accredited tertiary qualifications	Kepler Kiziba; Kiron Campus; Education for Humanity

Source: Authors' elaboration

4.1.1 Selected programme profiles

The following profiles of eight of the programmes listed in Table 4.1 provide insights into strategies for expanding and improving access and inclusion in ICT-supported literacy learning for refugees, migrants and IDPs.

Programme	Broad Class – Listen to Learn
Organization	POWER99 Foundation
Location	Pakistan
Language of instruction	Combination of first and second languages
Digital tool(s)	Radio, USB stick
Target population	Refugees and IDPs
Target skill(s)	Literacy in mother-tongue and English languages
Impact	7,500+ children across 187 classrooms
Website	https://power99.live/category/power-99-foundation/

Broad Class – Listen to Learn is a project in Pakistan that uses interactive radio instruction to complement public school education for teachers and students, including refugees and IDPs. Broad Class delivered customized wooden radios with dry rechargeable batteries and a built-in sound system in its initial pilot in the city of Haripur, where a considerable number of IDPs relocated to following the construction of the Tarbela Dam, which submerged 135 villages and resulted in the displacement of an estimated 96,000 people (Ilyas, 2019). For those with computers, memory cards and USBs were provided. The use of radio was in keeping with the oral culture of the target group and provided continuity of learning both inside and outside of school. In addition to the IDPs, the programme also benefited many Afghan refugees residing in the district. About 60 per cent of the programme beneficiaries were girls and female heads/teachers and education department officials.

Programme	Rising On Air
Organization	Rising Academy Network
Location	Headquarters in Sierra Leone; serves 20+ countries
Language of instruction	Multiple languages (mother tongue, host country's dominant language, combination of first and second languages)
Digital tool(s)	Radio, podcasts, WhatsApp, SMS, social media, phone
Target population	Refugees, migrants, out-of-school youth, women and girls
Target skills	Literacy, literacy and rural development, literacy and gender, literacy for health
Impact	Over 50,000 learners in three countries (Sierra Leone, Liberia and Ghana)
Website	https://www.risingacademies.com/

Another radio-based programme is **Rising On Air**, run by the Rising Academy Network. It serves 2 million students across 12 countries throughout Africa and Southeast Asia, and developed a complementary SMS component for Liberia and Sierra Leone after realizing that radio alone could not provide students with adequate support. Both technologies are widely available in both regions and may be accessed free or at minimal cost. The programme was initially designed to reach the poorest households, particularly those in rural areas with considerably less access to computers and the internet, and households with first-generation learners who may not have adults to support them. The SMS component consists of a 20-week series of SMS content delivered to parents. The iterative content development process incorporates user input to gather information on how the programme might become more inclusive and effective. At the end of each broadcast, parents and learners can call a hotline to leave feedback.

Programme	Education for Humanity
Organization	Arizona State University, USA
Location	Uganda, Burundi, the Democratic Republic of the Congo, Rwanda, Somalia, South Sudan
Language of instruction	Host country's language, second/foreign language
Digital tool(s)	Laptop, mobile phone, tablet, SolarSPELL, WhatsApp, Moodle
Target population	Refugees, IDPs
Target skill(s)	Literacy and digital skills, literacy for economic self-sufficiency, job-related skills, and higher education opportunities
Impact	Over 2,100 learners in eight countries
Website	https://edforhumanity.asu.edu/

Education for Humanity uses innovation to improve access to the internet and electricity in low-resource environments, enabling learners at Uganda's Nakivale refugee camp, for example, to access university-level curricula through this Arizona State University (ASU) programme. Education for Humanity utilizes ASU's SolarSPELL (Solar Powered Educational Learning Library), a solar-powered local storage device with Wi-Fi hotspot functions, from which learners can download, store and share large files such as lesson plans, video lectures, multimedia files and digital textbooks, despite the camp's severe resource constraints, such as an unstable electricity supply and limited 3G connectivity. Once learners with a Wi-Fi-enabled device connect and download the necessary resources, they can complete their work offline at their own pace.

All Education for Humanity participants are given tablets, headphones and charging accessories. Learners submitted coursework and received feedback using these devices and the local 2.5G network. This process demonstrated that high-bandwidth tasks, like uploading or sending coursework and using WhatsApp to submit questions and feedback, could be done on a lower-bandwidth 2.5G network. Learning is not compromised because the curriculum and delivery were designed with these constraints in mind, i.e. feedback from ASU professors is asynchronous.

Programme	UNHCR and Makhzoumi Foundation Mission with I'dad Center (Friends of the Disabled Association [FDA])
Organization	Friends of the Disabled Association
Location	Lebanon
Language of instruction	Combination of first and second languages
Digital tool(s)	Smart tablets, WhatsApp, Facebook
Target population	Refugees, migrants
Target skill(s)	Literacy, numeracy, job-related skills (for better employability), digital skills
Impact	-
Website	https://www.friendsfordisabled.org/home

The Makhzoumi Foundation Mission with I'dad Center (Friends of the Disabled Association [FDA]) addresses the issue of inclusion, in particular for learners with disabilities. It works with UNHCR in Lebanon to ensure that refugee children with disabilities are enrolled in and receive high-quality education. The programme's multidisciplinary team works with the children and their families to develop IEPs that take advantage of the assistive technology functions offered by laptops and tablets to engage learners using interactive education programmes and social media platforms. Parents receive daily instructions via WhatsApp on how to support their children's learning processes. The FDA also recognizes the limited resources available to refugee families in terms of technology devices and internet access and therefore provides them for free.

Programme	SVT Språkplay [Language play]
Organization	Språkkraft [Language play]
Location	Sweden
Language of instruction	Host country's language, second/foreign language
Digital tool(s)	Digital app
Target population	Refugees and migrants
Target skill(s)	Local-language acquisition
Impact	590,000 users, 1 million hours of language learning over a five-year period
Website	https://www.sprakkraft.org/svt-sprakplay/

SVT Språkplay uses a free mobile application to expand media access for refugees and migrants to help them acquire language skills and integrate into Swedish society. It accomplishes this by adding subtitles, captions and other language support functions to television series and other mass media, which are then made available on a free mobile application. Learners can build their understanding of Sweden and its cultural norms through their daily media consumption. Programme participants are either assigned a media item by an instructor or select one themselves. After selecting an item, they can watch the video immediately with or without closed captions. The video can be played in a 'step-by-step' format, or learners can use the application's ProActive Personal Dictionary to look up and display translations for specific words. The application supports over 25 different languages spoken by migrants. It has several features, including live captions, dictionaries, pronunciation support and translations.

Programme	Kepler Kiziba
Organization	Kepler (formerly Generation Rwanda)
Location	Rwanda
Language of instruction	Host country's language, second/foreign language
Digital tool(s)	Laptop, telephone
Target population	Refugees seeking higher education
Target skill(s)	Literacy, digital skills, economic self-sufficiency, vocational education and training
Impact	More than 170 learners, 66 of whom have received a bachelor's degree from Southern New Hampshire University (SNHU) in the USA
Website	https://www.kepler.org

Kepler Kiziba, in cooperation with Southern New Hampshire University (SNHU) in the USA, provides higher education opportunities to refugee learners at the Kiziba camp in Rwanda. Kepler has developed a fully self-sufficient ICT infrastructure model at the camp. Learners can access laptops; the internet; television; projectors; local storage devices; telephones; and portable, battery-powered devices that contain copies of educational websites in an offline format. Learners and faculty also used a learning management system for lessons.

The difficulty of reconciling household obligations with the programme was cited as a problem by both potential and active participants; therefore, to respond to the needs of women learners, the programme offers parental leave and a preparatory course to help women with the admissions process. Both these efforts have helped the programme achieve and maintain gender parity.

Programme	M-Shule
Organization	M-Shule
Location	Kenya
Language of instruction	Host country's language, second/foreign language
Digital tool(s)	Mobile phone, SMS, chatbot via messaging app, web app
Target population	Refugees
Target skill(s)	Literacy, numeracy, financial literacy, life skills
Impact	230,000 learners
Website	https://m-shule.com/

The **M-Shule** programme provides literacy and numeracy, financial literacy and life skills content via SMS in Kenya. SMS is used due to the wide availability of mobile phones and extensive mobile phone coverage in the country. M-Shule also features a web application and chatbot functions on WhatsApp for users who have internet access. These multiple modalities allow learners to access the most appropriate learning resources developed by M-Shule based on available ICTs.

Programme	vhs-Lernportal
Organization	DVV International
Location	Germany
Language of instruction	Host country's dominant language (German), combination of first and second languages
Digital tool(s)	Google Play, YouTube, Lernportal, mobile devices
Target population	Migrants, refugees, women and girls
Target skill(s)	Literacy, digital skills, economic self-sufficiency, vocational education and training
Impact	Over 26,000 facilitators and 500,000 learners
Website	https://www.vhs-lernportal.de

DVV International provides literacy education to migrants and refugees in Germany through their free online learning portal, **vhs-Lernportal**. It addresses literacy, digital skills, family literacy and health literacy in a multilingual and lifelong learning context. Most of the literacy programmes are available in 18 different languages. Learners can also access functions without internet connectivity. The portal can be used in classrooms or independently by students. Content focuses on real-life scenarios that refugees and migrants may encounter in Germany, and covers four areas of language learning: reading, writing, speaking and listening. A tutor assists remote learners, correcting the texts they submit and providing feedback and motivation. Those in the classroom receive the same kind of support from their in-person teacher. The remote option was particularly useful during the COVID-19 pandemic when in-person classes were cancelled.

Other programmes, such as BASAbali, Paper Airplanes, the Global English Language programme, Kiron Campus and the Thabyay eLearning platform, employ similar strategies or a combination of these strategies to tackle challenges in providing inclusive access to literacy learning for refugees, migrants and IDPs (see **Table 4.1**).

4.2 CAPACITY-BUILDING FOR TEACHERS AND EDUCATORS

The literature highlights the importance of trained teachers, mentors and educators for effective ICT-supported literacy learning among refugees, migrants and IDPs. Educators need adequate training and ongoing support to address pedagogical and technical issues (Tauson and Stannard, 2016). In addition to their teaching and digital skills, instructors and educators of refugees, migrants and IDPs need to be able to provide socio-emotional support to learners, particularly when these learners have experienced prolonged stress and trauma (Isserlis, 2000; Finn, 2011; UNHCR, 2019b).

The 25 programmes profiled in this publication employ different strategies to improve the capacities of educators (see **Table 4.2**), including recruiting facilitators and volunteer educators from the target group communities, hiring qualified educators, and providing training in digital skills in the use of specific technologies for literacy instruction. Trauma-informed pedagogy, andragogy and intercultural communication are also included. While some programmes design and offer self-paced, independent training modules for newly recruited facilitators and volunteers, others use multiple sources of data to identify the training needs of their educators and provide them with ongoing support through online communities. Some programmes actively use facilitators in the design of programme content as well. **Table 4.2** lists seven programmes and their strategies for improving the quality and capacities of educators.

Table 4.2. Challenges and programme-specific strategies for capacity-building for teachers and educators

Challenge	Programme strategy	Name of programme
Facilitators struggle to motivate and engage learners	Facilitators are provided with pedagogical training and taught how to use radio, video and other audio-visual aids to improve engagement	Broad Class – Listen to Learn English Language Course for Refugee Teachers
Training not tailored to the needs of facilitators	Data from multiple sources are used, including teacher-proficiency tests, teacher surveys containing open-ended questions and Likert-scales, focus group discussions, and lesson observations to identify needs and areas that require support	English Language Course for Refugee Teachers
	Courses and training sessions that facilitators can complete at their own pace to develop skills that will enable them to customize learning and use technology effectively	We Love Reading
	Facilitators involved in the design of the programme (curriculum) and training	Migrant Liter@cies
	Information on the learning experience and the learners' needs is used to shape programme operation	
Lack of training in providing support for social-emotional learning, addressing trauma and contextualizing content	Facilitator training programmes include intercultural communication and trauma-sensitivity training	Paper Airplanes
Limited digital skills to deliver content using ICT-based platforms	Digital skills added to teacher-training curricula	Dogme Training Programme
Poor selection process, resulting in untrained facilitators (i.e. volunteers) or disparities in recruitment (e.g. gender disparity)	Clear selection criteria developed; mandatory training modules include key professional development opportunities, group meetings and professional development consultations. Similarly, pre-service and ongoing training are provided to help facilitators improve their skills	Sistema Interactivo Transformemos Educando
	Local volunteers and facilitators from the community are recruited and trained to help learners feel represented and to foster a sense of belonging	We Love Reading

Source: Authors' elaboration

4.2.1 Selected programme profiles

Programme	English Language Course for Refugee Teachers
Organization	Education Development Trust (EdDevTrust)
Location	Lebanon
Language of instruction	Host country's language, second or foreign language
Digital tool(s)	Zoom, WhatsApp, Padlet, edPuzzle, Microsoft Forms
Target population	Refugee teachers
Target skill(s)	Pedagogical skills in teaching English, speaking and writing skills, digital skills
Impact	Trained teachers of 1,500 Syrian refugee children
Website	https://www.educationdevelopmenttrust.com/

The **English Language Course for Refugee Teachers** supports refugee teachers in Lebanon in developing their English-language and teaching skills. EdDevTrust selects these teachers in consultation with its NGO partners. Literacy and digital skills are taught in a multilingual context, and instruction is also provided in literacy skills for social, cultural and economic integration and vocational education. The lessons can be reproduced by the target group to teach others in their communities. Learners improve their English-language skills while developing teaching strategies and pedagogy that they can apply in their own classrooms. Each group is assigned weekly projects, which require about 10 hours of work per session. After completing the course, participants receive a certificate.

The programme ensures that training is tailored to the needs of the teachers. First, teachers are tested at the beginning and end of the course using Oxford University Press online language proficiency tests to measure progress, supplemented by speaking assessments before and after training. Second, teachers' use of English in the classroom is monitored. Third, biannual teacher surveys provide feedback on pace, content and facilitation. Finally, focus-group interviews are conducted to obtain additional qualitative input from teachers. This information improves the training programme and makes it more relevant to the teachers.

Programme	Sistema Interactivo Transformemos Educando
Organization	Fundación para el Desarrollo Social Transformemos (Transformemos Foundation for Social Development)
Location	Colombia
Language of instruction	Spanish, five Indigenous languages (Nasa-Yuwe, Sikuani, Curripaco, Piapoco and Puinave), and Palenquero
Digital tool(s)	Computer, tablet or smartphone
Target population	IDPs, marginalized learners, migrants, minority groups, refugees, girls and women, Indigenous persons
Target skill(s)	Literacy, digital skills, second-language acquisition
Impact	Over 400,000 youth and adults, 14,000 teachers trained/have implemented the software of the Transformemos Interactive System in 3,200 educational institutions
Website	https://www.facebook.com/fundaciontransformemos/

The **Sistema Interactivo Transformemos Educando** programme is aimed at young people and adults aged between 15 and 60 years who are illiterate or have been excluded from the formal education system. The foundation works in partnership with Colombia's Ministry of Education to increase education opportunities in the formal system for vulnerable groups through an innovative approach that combines traditional teaching methodologies with up-to-date technologies such as interactive multimedia and the internet.

Prospective instructors must have teacher certification and participate in ongoing professional development opportunities; these include a six-month online course on youth and adult education, a minimum of three group meetings per academic year where facilitators have the opportunity to learn from one another by exchanging experiences, challenges and good practices, and training on the management of the Transformemos interactive system. Training and support for instructors include instructional courses, teaching materials and an online community space to network and share ideas. Instructors learn how to use blended learning in the classroom in an eight-week introductory course of around 4.5 hours.

Although Transformemos has a general pedagogical model that guides the implementation of the programme throughout the country, the curriculum, resources, timetables and locations of classes are flexible and differ from region to region. Furthermore, prior to developing the implementation plan in a given area, the foundation carries out a qualitative and quantitative assessment of participants' needs and cultural characteristics to design an intervention specifically tailored to the requirements of the target population. Transformemos does not, however, aim only to improve literacy and digital skills: activities and resources have also been invested in promoting the development of the learners' community by implementing over 500 projects, such as community kitchens and vaccination campaigns.

Programme	We Love Reading
Organization	We Love Reading
Location	Jordan (original programme), Azerbaijan, Egypt, Germany, Iraq, Lebanon, Palestine, Malaysia, Mexico, Saudi Arabia, Thailand, Tunisia, Turkey, Uganda and United Arab Emirates
Language of instruction	English and Arabic (L1 and L2)
Digital tool(s)	Online training platform, mobile application
Target population	Refugees, migrants, IDPs
Target skill(s)	Literacy (mainly reading), leadership skills
Impact	Has reached 100,000 learners
Website	https://welovereading.org/

To foster a love of reading, **We Love Reading** trains local volunteers to read books about local culture in local languages to community children. The programme's online training course is designed for anyone interested in reading aloud to children in their native (L1) language. The online course is based on Picciano's theoretical framework (2009), which recognizes that learners represent different generations, personalities and learning styles. Picciano highlights that programmatic goals drive pedagogical approaches and the relevant technologies. Interested individuals, NGOs or community-based organizations can be partners and host a 'We Love Reading ambassadors' training session' or a training-of trainers session. These partners provide the venue, recruit trainees and cover the cost of the training programme.

Programme	Paper Airplanes
Organization	Paper Airplanes, Inc.
Location	USA
Language of instruction	Combination of L1 (mother tongue) and English
Digital tool(s)	Videoconferencing, cloud-sharing platforms, Kiron Campus (2021), websites, videos
Target population	Refugees and IDPs from the Syrian Arab Republic, Jordan, Turkey, Lebanon, Saudi Arabia, Germany, Egypt, Iraq, Gaza Strip and Afghanistan
Target skill(s)	English literacy and digital skills
Impact	2,411 learners
Website	https://www.paper-airplanes.org/

Paper Airplanes conducts one-to-one English language learning. Trained volunteers use online video-conferencing applications and free online collaborative tools to teach internally displaced Syrian youth and adults and refugees in neighbouring countries. Language tutors are mainly from Canada, the UK and the USA. Paper Airplanes stands out through its flexibility in the use of applications, including Google Meet, Zoom, Facebook Messenger and WhatsApp, depending on the familiarity of the learner and the connectivity available.

To address the needs of learners who may have suffered trauma, intercultural communication and trauma-sensitive aspects form part of Paper Airplanes' volunteer tutor training. Volunteer tutors undergo six to eight hours of training following a specialized curriculum, moderated by 'tutor coordinators' within the organization. These tutor coordinators work with volunteer tutors to build a community and provide support whenever needed. As the programme is conducted entirely online, this was deemed necessary to boost volunteer retention and tutoring quality.

Other programmes, such as Broad Class – Listen to Learn, Migrant Liter@cies and the Dogme Training Programme, also address the challenges of educator training and support to improve literacy learning among refugees, migrants and IDPs using ICTs (see **Table 4.2**).

4.3 RELEVANT CONTENT AND INNOVATIVE INSTRUCTIONAL APPROACHES

Programmes must be relevant if they are to succeed in delivering literacy to adults. Educational programmes for refugees, migrants and IDPs are often designed for children and, to some extent, youth (UNESCO, 2018a). In order to be relevant to adults, programmes should integrate other skills and domains of learning in addition to basic literacy and numeracy skills. Moreover, programmes that include image- or sound-based navigation ensure that even those who lack basic literacy skills will not be left behind (ibid.). Innovative approaches to instruction must also motivate learners to pursue learning despite various obstacles.

Analysis of the 25 programmes shows that they achieve content relevance by integrating digital and life skills into literacy and second-language learning using various instructional innovations and ICTs (see **Table 4.3**). Consultations between stakeholders and the intended course beneficiaries guides the design of the programmes, which recognize the learners' diverse linguistic backgrounds and the host communities' cultures, politics, economies and other social aspects.

Creative instructional and andragogical approaches, such as arts-based and drama curricula through Zoom or other communication tools, are integrated into second-language and literacy development. Game-based online exercises and activities also help learners enjoy the learning process. With online learning platforms and social media, programmes transcend the traditional limitations of physical infrastructure and power dynamics in a teacher-led classroom, thereby giving learners a voice and enabling them to learn and express themselves more freely.

Table 4.3. Challenges and programme-specific strategies for relevant content and innovative instructional approaches

Challenge	Programme strategy	Name of programme
Limited motivation due to other priorities and needs	Content is crowdsourced from the local community to promote community engagement and allow individuals to exercise agency on a Wiki platform	BASAbali
	Elicit feedback from learners and carry out programme assessments to design larger-scale programmes for more learners	Migrant Liter@cies
	Customize toolkits and guidelines to meet learner needs	
	Use learner engagement data and other sources of learner feedback to ensure programme relevance	Kiron Campus
	Harness artificial intelligence to customize content delivery to each student's level and pace of learning	M-Shule
	Use learner data (tracked at enrolment and during the course) to adapt content and ensure relevance	
Difficulty in designing engaging, trauma-sensitive, responsive content that addresses the learners' various needs	Encourage participants to explore topics relevant to their interests with learner-driven dialogues in live online sessions (e.g. in the Dogme Approach, learning materials are generated by learners and trainers through conversational communication)	Dogme Training Programme
	Focus on grapheme-phoneme correspondence to provide learners with immediate feedback and consider the reality of migrants' and refugees' everyday lives to make content relevant	DigLin: The Digital Literacy Instructor
	Provide an arts-based curriculum to address the various social and emotional challenges faced by learners (e.g. process drama pedagogy)	Connected: Adult Language Learning through Drama
	Encourage translanguaging to de-emphasize language hierarchy and promote learners' native languages	
	Employ mass media to help convey cultural and social aspects of the host community while promoting language learning through subtitles, an embedded dictionary and translations	SVT Språkplay
	Acknowledge the agency of learners by inviting them to contribute to the curriculum, thus adding value to the programme's design. Encourage learner participation through social media platforms, Wikis and co-developed tools like virtual dictionaries on the learning portals	BASAbali Thabyay eLearning Platform Upskilling Adults 45+ with Migrant Background
Lack of digital skills demotivates or excludes learners from participating in learning	Provide digital skills lessons and regular support on technical issues, particularly at the start of any programme that uses ICTs	Kiron Campus Paper Airplanes

Source: Authors' elaboration

4.3.1 Selected programme profiles

Programme	Migrant Liter@cies
Organization	Centro Zaffiria
Location	Belgium, Estonia, Italy, Germany, the Netherlands, Poland, Slovakia and Spain
Language of instruction	Host country's language
Digital tool(s)	Mobile phones, tablets, computers, Wi-Fi, video projectors, free apps and software (Lomap, Google Maps), Calepino (new app), Moodle
Target population	Educators and teachers working with adult refugees and migrants
Target skill(s)	Literacy and digital literacy skills
Impact	Developed the literacy and digital literacy skills of some 600 migrants. Around 200 teachers and educators trained within the project; 300 through the MOOC during the project
Website	www.migrantliteracies.eu/workshops/

Migrant Liter@cies is a partnership of institutions in eight countries that produce learning materials for instructors and facilitators to use in their classrooms for adult migrant learners. It aims to support teachers by expanding their media and digital skills. The institutions collaborated to produce an instructional design with a low technology threshold, free software and mobile devices to enable adult migrants to participate. The project has resulted in 45 workshops, eight national toolkits and one e-learning Massive Open Online Course (MOOC) adaptable to local contexts for use by adult educators across Europe.

Programme	BASAbali Wiki
Organization	BASAbali
Location	Indonesia
Language of instruction	Balinese
Digital tool(s)	Wiki platform, website
Target population	Youth refugees, migrants and IDPs
Target skill(s)	Literacy and multilingualism, job-related skills (for better employability), digital skills, citizenship skills
Impact	Over 1.3 million Wiki contributions
Website	https://dictionary.basabali.org/Main_Page

BASAbali Wiki, a virtual library platform for the Balinese language, takes an innovative approach to content development by involving the community. To reach the most marginalized, the programme collaborates with local communities to provide physical copies of books from the platform to learners who do not have access to the internet. Workshops are also held with

communities and schools, particularly in rural areas, to improve learners' basic skills and engagement with the platform.

A multimedia, multilingual dictionary for Balinese was co-developed with the community as part of the BASAbali programme. To date, over 1 million people have contributed original content to the Wiki, making existing material more accessible and customizing the platform to be meaningful and useful to the local community. A series of children's books featuring a young female multilingual superhero who engages children in reading is an example of such content. The community contributes to creating this superhero figure through the superhero's own social media channels via workshops, teacher training sessions and community organizations.

Programme	Dogme Training Programme
Organization	Mosaik Education
Location	Jordan, Lebanon (virtual)
Language of instruction	Host country's language, second language or foreign language
Digital tool(s)	Video-tagging software, live and asynchronous online training via mobile phones, Zoom, Moodle, Facebook
Target population	English-language teachers of refugees
Target skill(s)	Learner-centred teaching, engaging and contextual lesson planning, digital literacy, online teaching, assessment of learners
Impact	38+ English-language teachers: 92% of teachers improved their communication skills; 77% of teachers reported increased confidence; 100% of teachers subsequently used the techniques learned in the training programme in their classrooms; 80% of teachers reported that techniques from the training led to increased student participation in their classrooms
Website	https://mosaik.ngo/opportunities/dogme-training

Mosaik Education initiated its **Dogme Training Programme** to create better educational opportunities for refugee communities in Jordan and Lebanon. The programme was also enhanced to equip teachers to leverage technology in the wake of COVID-19 lockdowns. The programme trains English-language teachers to use Dogme teaching techniques. This approach allows teachers and learners to generate materials and emphasizes conversational communication. The trainers in this prigramme guide participants in exploring topics relevant to their interests by initiating learner-driven dialogues. Furthermore, content is delivered through synchronous (live, facilitated via Zoom or Moodle) and asynchronous sessions (at the learner's own pace). The cognitive apprenticeship approach is used in the live sessions, which brings the problem-solving processes into the open, where students can observe, enact and practise these (tacit) processes with help from the teacher (Collins, Brown and Newman, 1987, p. 4). Each live session includes a breakout activity segment in which participants practise skills demonstrated by the trainers and then receive feedback from trainers and peers. Mobile devices can also be used to access learning activities and materials.

Programme	DigLin: The Digital Literacy Instructor
Organization	Friesland College, the Netherlands
Location	100+ countries
Language of instruction	Host country's language, L2 or foreign language
Digital tool(s)	Log files, photos and audio files, computers, tablets, phones
Target population	Adult migrants with limited or no schooling or literacy in their first language who are trying to learn the language of their host country
Target skill(s)	Literacy and digital skills, literacy in a multilingual context, self-motivated learning
Impact	8,000 users each year
Website	http://diglin.eu/

DigLin is a programme that provides free, online, contextualized and individualized learning materials to enhance the lexical and grammatical skills of second-language literacy and acquisition of learners with limited education. The pedagogical approach underpinning the design focuses on grapheme-phoneme correspondence, providing learners with immediate feedback and content relevant to the daily lives of migrants and refugees while promoting learner autonomy. It is compatible with mobile devices such as smartphones and tablets. The programme provides feedback in more than one format. It also uses behaviour tracking technology (also known as log files). Log files track learners' behaviour and performance while working in the system. Scripts that record each learner's every action are included in the software package to produce up-to-date records of all events and the actions of all software users. The key benefit of collecting and analysing data using log files is that this allows programme developers to ascertain precisely what learners do or don't do and determine whether there is a relationship between their actions and learning, helping make content more relevant.

Programme	Connected: Adult Language Learning through Drama
Organization	Sydney Theatre Company
Location	Australia
Language of instruction	English; participants' first language is also welcomed and integrated into instruction and communication
Digital tool(s)	Zoom
Target population	Refugees, migrants and asylum-seekers
Target skill(s)	English literacy, English speaking
Impact	Over 700 learners since 2016
Website	https://www.sydneytheatre.com.au/education/our-community/adult-drama-and-literacy

Created in 2016, **Connected: Adult Language Learning through Drama** provides English-language learning to adult refugees, asylum-seekers and migrants in Australia through drama and creative workshops. The programme uses imaginative stories, myths and folktales to stimulate English language learning and foster social connections through creative expression. The programme curriculum is based on process drama pedagogy, which is the 'exploration of a theme, topic, idea or problem through a series of dramatic devices, resulting in an improvised or unscripted drama experience' (Haseman, 1991; O'Neill, 1995, as cited in Stinson and Freebody, 2005). In process drama, participants exhibit agency in creating the fictional 'world' of the theatrical scenario alongside the facilitator,

thereby ensuring that the content of the dramatic activities is relevant and has personal meaning to participants, as they each play a part in creating it.

The programme, delivered via Zoom during the COVID-19 pandemic, encourages learners to practise in pairs or groups. Moreover, the programme uses 'translanguaging' to create a welcoming and inclusive environment where students feel comfortable. Translanguaging recognizes a multilingual person's full linguistic repetoire, and uses and honours their first language in the second-language learning process. This approach de-emphasizes a language hierarchy and allows learners to use other languages; for instance, learners can use their native language during group discussions.

Programme	M-Shule SMS Learning & Training
Organization	M-Shule
Location	Kenya
Language of instruction	Host country's language, second/foreign language
Digital tool(s)	Mobile phone, SMS text messaging, chatbot via messaging app, web app
Target population	Refugees
Target skill(s)	Literacy, numeracy, financial literacy, life skills
Impact	230,000 learners
Website	https://m-shule.com/

M-Shule SMS Learning & Training uses artificial intelligence to customize learning content to each learner's profile. A learner's initial content is designed based on their learner profile; as they progress through the micro-courses delivered and responded to via SMS, algorithms provide relevant content based on the learner's responses to questions used to assess their current level of knowledge. More difficult questions promote mastery of specific skills, while easier questions build foundational knowledge that is lacking. Optionally, teachers can be provided with reports on learning progress if learners are using the programme in face-to-face classes. External evaluation indicates that the

programme has a positive impact on literacy and numeracy outcomes in national and international exams.

Programmes such as SVT Språkplay, Kiron Campus, Thabyay eLearning Platform, Upskilling Adults 45+ with Migrant Background, and Paper Airplanes highlight the use of strategies, or a combination of strategies, similar to those employed by the illustrative programmes above. They enhance ICT-supported literacy learning and education by accommodating learners' diverse needs through various types of content and different modes of delivery, and by understanding learners' back-grounds and social context (see **Table 4.3**).

4.4 MONITORING AND EVALUATION

There is a lack of rigorous evidence of the effectiveness of ICTs in supporting language acquisition for refugees, migrants and IDPs. The cost-effectiveness of ICT-supported literacy programmes for refugees and migrants compared to non-digital programmes is also unclear (Hanemann, 2018; UNESCO, 2018a). Understanding why programming is successful and how it can be replicated or scaled in other contexts requires more robust monitoring and evaluation (M&E) of interventions supported by ICT. However, the ability of organizations to partake in M&E depends on several factors, including their budget, internal monitoring capacity and the challenges of collecting such data on populations on the move. The latter is of critical importance, as refugees, migrants and IDPs are heterogeneous in terms of their legal status and the nature and duration of their displacement and residence.

As the programmes in **Table 4.4** show, different strategies were implemented to monitor and evaluate the effectiveness of programmes that use ICTs. Some programmes gather real-time data about learning progress using applications and software programmes. They also use log files to track user progress and behaviour. A range of offline and online assessments and tests are implemented, and qualitative data are gathered through surveys on learners' subjective views of their experiences with the programmes. Educators also share their views on the programmes, the effectiveness of technologies and learners' progress. An external evaluation was conducted only for a limited number of programmes, probably due to budget constraints.

The four illustrative programmes in **Table 4.4** provide additional details of the specific strategies employed to better monitor and evaluate ICT-supported literacy programmes for refugees, migrants and IDPs.

Table 4.4. Challenges and programme-specific strategies for monitoring and evaluation		
Challenge	**Programme strategy**	**Name of programme**
Lack of rigorous data on the effectiveness of ICTs in supporting literacy and basic skills learning for refugees, migrants and IDPs	External evaluators conduct independent evaluations of project activities to determine whether objectives have been achieved and how problems are solved	Migrant Liter@cies
	Real-time data are collected on reading time, reading consistency and assessment questions using applications/software. This information can be used to adapt the programme and create incentives for learners	Learning Coin for Equitable Education
	Questionnaires, student self-evaluations, focus groups and interviews are used to acquire key information about what works, why, and how different aspects of the programme could be improved	Better Connections
	Conduct surveys at the end of a course to capture learners' voices and elicit feedback, encourage focus group discussions and involve learners in designing programme materials	Migrant Liter@cies
	Use participant surveys to gather information in both qualitative and quantitative formats	Paper Airplanes Education for Humanity
	Collect feedback from tutors and teachers who attend training courses, workshops and webinars	vhs-Lernportal
	Collect baseline data to examine the extent to which ICTs reach the classrooms/beneficiaries. Programme partners with external entities to conduct randomized control trials to measure learner outcomes	Rising on Air
	Collect and analyse data using log files (user-behaviour tracking) to ascertain precisely what learners do or don't do and determine whether there is a relationship between what they do/don't do and how they learn	DigLin: The Digital Literacy Instructor
Limited availability and use of data to assess the effectiveness of programmes	Conduct literacy tests before the course to assess the learner's entry level; literacy instructors then evaluate progress through ongoing practical assessments. Carry out programme monitoring periodically; include end-of-year evaluations whereby students present their work or take examinations	Thabyay eLearning platform
	Monitor and evaluate both qualitative and quantitative data using tools such as language proficiency tests, oral assessments, classroom observations, etc.	English Language Course for Refugee Teachers
	Involve the M&E team/M&E plan at all stages of project cycle management, including during implementation and after the project, to ensure that the data gathered are relevant and of high quality, and that beneficiary participation is integrated and documented	Norwegian Refugee Council (NRC) Youth Programme

Source: Authors' elaboration

4.4.1 Selected programme profiles

Programme	Thabyay eLearning Platform
Organization	Thabyay Education Foundation (TEF)
Location	Myanmar
Language of instruction	Combination of first and second languages (English, Burmese and Karen)
Digital tool(s)	Zoom, Moodle, YouTube, Educasia, mobile phones, tablets
Target population	Refugees, migrants and IDPs
Target skill(s)	English-language courses, literacy and work-related skills, university preparation
Impact	Over 3,000 students have successfully completed TeP online courses since 2009
Website	www.tepedu.org/

The **Thabyay eLearning Platform (TeP)** was created by the Thabyay Education Foundation to deliver low-cost English language classes online to marginalized areas along the Thai-Myanmar border, where there are large numbers of migrants, refugees and IDPs. TeP takes a more conventional approach to monitoring progress and uses the online Moodle platform to provide content. The programme uses examinations to monitor student progress. Online English language and test preparation courses are also available through the e-learning platform. According to the monitoring reports, 40 per cent of the students who participated in the test preparation module were admitted to higher education programmes, and 20 per cent won scholarships to pursue further education in countries such as China, the Republic of Korea, Thailand and Canada. The programme involves several faith-based and ethnic organizations to expand outreach and increase student enrolment. According to the most recent impact data, 45 per cent of Thabyay programme participants have been accepted to university.

Programme	Learning Coin for Equitable Education
Organization	UNESCO Bangkok
Location	Thailand
Language of instruction	A combination of first and second languages, including Thai, Burmese and Malay
Digital tool(s)	Tablets with internet SIM cards and the LearnBig digital library app
Target population	Migrant children and youth
Target skill(s)	Multilingual literacy
Impact	605 learners
Website	https://bangkok.unesco.org/content/learning-coin-project

UNESCO Bangkok's **Learning Coin for Equitable Education** is an app and cash-transfer programme for migrant children and youth in Thailand. The programme promotes literacy and reading among ethnic minority, stateless and marginalized migrant children and youth in Thailand by incentivizing the use of the LearnBig mobile application through conditional cash transfers.

LearnBig is a multilanguage open digital library with more than 1,400 textbooks, reading books and teaching materials for learners and educators. These books are available in various scripts such as Thai, Burmese, Malay and other ethnic minority languages, including Karen, a Sino-Tibetan language spoken by populations in southeast Myanmar and western Thailand. Learners are recruited from community learning centres and schools in Thailand, and provided with tablets preloaded with the LearnBig app and an internet connection.

Daily monitoring through the LearnBig app collects information such as reading time, reading consistency and questions answered. The data are used to calculate the value of cash incentives provided to students' parents. As a result, the programme continually adapts and customizes itself to individual learners. Furthermore, the project found that of the learners enrolled in the non-formal education programme, 86 per cent passed the first-year Thai literacy examination, and 92 per cent passed the second-year examination. They also found that learners were reading more books in Thai.

Programme	Better Connections
Organization	Qatari Ministry of Transport and Communications
Location	Qatar
Language of instruction	Arabic, English and learners' mother tongue
Digital tool(s)	Computers with audio and video plug-ins, internet connection, printer, scanner, copier, Microsoft Office, Skype
Target population	Migrant workers in Qatar
Target skill(s)	ICT for entertainment, communication and life skills
Impact	Over 1.5 million workers since project launch
Website	https://www.motc.gov.qa/en/ditoolkit/migrant-workers/better-connections-program

Better Connections is a programme led by the Qatari Ministry of Transport and Communications (MOTC) in partnership with the Qatari Ministry of Administrative Development, Labour and Social Affairs (MADSLA). In 2014, MOTC partnered with the Social and Economic Research Institute (SESRI) of the University of Qatar to conduct a nationwide assessment to determine the needs and interests of migrant workers in Qatar. Eighty-four per cent of migrant workers surveyed expressed interest in computer and internet training programmes. The Better Connections programme was designed to mitigate the digital divide among migrants in Qatar, improve their well-being and financial literacy skills, raise awareness about their rights as workers and provide a means to communicate with their family members back home.

The programme's M&E relies on a combination of online pre-and post-training student surveys, in-person interviews and post-training focus groups. Although student outcomes are not monitored, this qualitative input is used to inform future implementation of the programme as it focuses on direct feedback from participants.

Programme	Norwegian Refugee Council Youth Programme
Organization	Norwegian Refugee Council
Location	Jordan
Language of instruction	Mother tongue or first language
Digital tool(s)	Computer, mobile phone
Target population	Refugees, women and girls, learners with special needs, youth not in education, employment or training, youth out of formal schooling for more than three years
Target skill(s)	Basic literacy and numeracy, technical skills, interpersonal and communications skills, socio-emotional skills
Impact	Approximately 3,200 youth trained from 2012 to 2016, and an additional 1,815 in 2018
Website	https://www.nrc.no/what-we-do/themes-in-the-field/supporting-youth/

The **Norwegian Refugee Council (NRC) Youth Programme** provides access to structured and certified learning opportunities for youth in refugee camps to support them in developing their skills and enhancing their well-being and readiness to transition to adulthood along different pathways: livelihoods, social engagement and further education/learning.

The programme receives support from a dedicated M&E unit at NRC Jordan. This unit is involved in all stages of project cycle management: it ensures that data gathered are relevant and of high quality and that beneficiary participation is integrated and documented. The M&E unit also oversees adequate monitoring during implementation, and documents and analyses lessons learned at the end of projects. Continuous monitoring throughout the programme cycle moreover ensures that the needs of participants are being met. There is also a separate mechanism that offers participants a transparent avenue to provide feedback in real time anonymously.

Other programmes, such as BASAbali, DigLin, Education for Humanity, the English Language Course for Refugee Teachers, Migrant Liter@acies, Paper Airplanes, Rising on Air and the vhs-Lernportal also use various M&E strategies to document, analyse and improve the quality of their ICT-supported literacy programmes as well as learning outcomes (see **Table 4.4**).

4.5 STRATEGIC PARTNERSHIPS

Engaging with stakeholders and developing partnerships is vital to many of the programmes, particularly because NGOs with limited resources run more than half of them – some in challenging settings, such as remote, rural camps for refugees and IDPs. Strategic partnerships are a key contributing factor in the effective implementation of programmes, notably when national ministries and district authorities provide access and support the coordination of programmes. Strategic partnerships also help build learner trust, increasing their motivation and participation. Moreover, when partnerships are made with faith-based organizations and other community-based organizations, they can help build social connections, create a sense of belonging to the community and positively influence integration (Eby et al., 2011). Community-based organizations, in particular, play an important role in reaching out to

refugees, migrants and IDPs, and in implementing programmes locally. The programmes covered in this report also frequently partnered with the private sector, who provide internet connectivity and access to ICT devices and software, thereby making learning content accessible.

Many of these programmes show that strategic partnerships are critical; however, it is also important to note that, while strategic partnerships are essential, they can only work if there is coordination, clarity of roles and a clear vision. Building on the thematic area of M&E discussed in Section 4.4, close and comprehensive monitoring and evaluation processes and reports also played an essential role in strategic partnerships. They showed partners the impact of the programmes and provided feedback for more effective implementation. The programmes' specific strategies are summarized in **Table 4.5**, followed by three illustrative programmes.

Table 4.5. Challenges and programme-specific strategies for partnerships		
Challenge	Programme strategy	Name of programme
Different languages and contexts in different countries involved in the same programme	Establish flexible partnerships across different countries to share, develop and transfer innovative practices at organizational, national and international levels. Ensure that ICTs introduced during the courses are compatible with the tools and resources developed by all programme partners	DigLin: The Digital Literacy Instructor Migrant Liter@cies Upskilling Adults 45+ with Migrant Background
Limited human and financial resources for implementation	Partner with organizations and institutions that contribute to specific programme needs such as local coordination, digital skills training, curriculum design and learning content	Connected: Adult Language Learning through Drama Education for Humanity Global English Language Programme NRC Youth Programme Jordan
	Partner with universities or other educational institutions for flexible learning pathways, improved course content and multiple modalities of learning	Kepler Kiziba Kiron Campus
	Promote local events with stakeholder involvement, whereby partners co-design events or provide venues and facilities to overcome human resource/ infrastructure constraints	We Love Reading BASAbali
	Collaborate with private partners, such as telecom providers or technology companies, to provide learners in remote areas with access to electricity, the internet and affordable computers and tablets	Better Connections Learning Coin for Equitable Education
Ensuring outreach to target beneficiaries	Involve local partners, such as community organizations and NGOs, to ensure effective outreach to targeted beneficiaries and increase learner enrolment	BASAbali Dogme Training Programme English Language Course for Refugee Teachers Global English Language Programme Learning Coin for Equitable Education Paper Airplanes Thabyay eLearning Platform
	Work with public and private media companies, such as television broadcasters and private radio stations, to increase outreach through their existing audiences	Broad Class – Listen to Learn SVT Språkplay
	Cooperate with national agencies, such as national authorities and employers of migrant workers, in programme design and implementation to increase access to target beneficiaries and promote continuity	Better Connections Education for Humanity Rising on Air NRC Youth Programme Jordan

Source: Authors' elaboration

4.5.1   Selected programme profiles

Programme	Upskilling Adults 45+ with Migrant Background
Organization	Romanian Institute for Adult Education Timisoara
Location	Romania
Language of instruction	Romanian
Digital tool(s)	MOOCs, Google Play, smartphone, computer, tablet, Moodle, Teachable, Europass, Skills Panorama
Target population	Migrant adults aged 45+
Target skill(s)	Basic literacy skills, basic education skills, digital and soft skills for social and professional inclusion
Impact	90+ learners
Website	https://upskilling.ilabour.eu/

The **Upskilling Adults 45+ with Migrant Background** programme is run by the Romanian Institute for Adult Education Timisoara (IREA), which partners with several institutes and entities across the European Union to ensure that ICT skills introduced during the programme synergize with support instruments available throughout the EU, such as the Learning Opportunities and Qualifications in Europe portal and the EU Skills Panorama. This approach attempts to make the skills acquired during the programme easily applicable in locations across Europe. The programme is designed to train facilitators and provide services for educational providers that focus on upskilling middle-aged adult migrants of all genders, enabling them to thrive in the modern workforce. The project recognizes that migrant adults aged 45 and over constitute a vulnerable population, as they face difficulties (re-)integrating into the labour market due to (long-term) unemployment, de-skilling and competency gaps. Moreover, since society is ageing, this group is growing.

The programme is working on a campaign to raise awareness of the importance of basic skills for migrants (and returning migrants) at the regional, national and EU levels. This campaign complements direct advocacy to policy-makers to include all relevant stakeholders – national, local and regional employment departments; immigrants' organizations and offices; recruitment agencies; trainers' associations and employers – in order to deliver recognized basic skills training for migrants.

Programme	Global English Language Programme
Organization	Jesuit Worldwide Learning
Location	Afghanistan, Central African Republic, the Democratic Republic of Congo, India, Iraq, Kenya, Jordan, Malawi, Myanmar, Philippines, Sri Lanka, Thailand, Togo
Language of instruction	Host country's language; second/foreign language
Digital tool(s)	Computer, tablet, or smartphone
Target population	Indigenous peoples, IDPs, marginalized learners, migrants, minority groups, refugees, women and girls
Target skill(s)	English-language skills
Impact	Over 2,500 students in 33 centres in 13 countries
Website	https://www.jwl.org/en/home

Another programme that leverages strategic partnerships to make learning accessible is the **Global English Language (GEL)** Programme, founded in 2017. It sees itself as a preparatory course for students to strengthen their English language skills, helping them succeed in higher education. Local partners are essential to GEL as they cover the local cost of operating the centres that deliver the programme and recruit students in their local communities. English-language teacher training is conducted in partnership with the Creighton University Intensive English Language Institute in the USA, which offers a 150-hour online teacher-training course.

Programme	Kiron Campus
Organization	Kiron Open Higher Education GmbH
Location	Germany, Jordan, Lebanon
Language of instruction	Multiple languages, including learner's first language
Digital tool(s)	MOOCs, Google Play
Target population	Refugees seeking higher education, access to the labour market and life-long learning opportunities
Target skill(s)	Business and economics, university preparation, English-language skills, literacy for economic self-sufficiency, literacy and vocational education and training, job-related skills and higher education opportunities
Impact	14,000 learners globally, over 73,000 course enrolments, over 21,000 course completions, 100 learners admitted to university
Website	https://kiron.ngo/en/

Kiron Campus is an online learning platform that aims to improve access to higher education for the most marginalized. It overcomes the legal and infrastructural barriers faced by these vulnerable learners by setting up key partnerships that benefit them. It offers free access to its courses for refugees, asylum-seekers, IDPs, and Jordanian and Lebanese learners. Kiron's learners are largely from Germany, the Syrian Arab Republic and Jordan, but the nationalities of these learners are mostly Syrian and Jordanian. The platform was designed with a mobile-first approach and to

function in low-bandwidth environments, which many of its users experience. The platform is accessible via an Android app for smartphones that works with a low-bandwidth internet connection, allowing learners to learn on the move when they do not have access to laptops or desktop computers.

Kiron has established learning agreements and partnerships with higher education institutions in Germany that allow students to transfer from the Kiron programme to these institutions and receive credit for prior learning. Kiron Campus also assists students in overcoming the difficulties of providing proof of previous education, language skills and financial resources. To be eligible for the programme, a learner only needs to submit a document proving they are a refugee, asylum-seeker, IDP or a member of another under-privileged community. Kiron's website caters to users with limited literacy skills by presenting its platform in an engaging way, with images illustrating instructions and resources. Kiron Campus has partnered with the German Federal Ministry for Education and Research (BMBF) on several research projects. The BMBF also gives Kiron financial support to improve the quality of its platform.

4.6 RECOGNITION, VALIDATION AND ACCREDITATION

Recognition, validation and accreditation (RVA) of learning is vital for the learner's ability to pursue further education and participate in the labour market. Obstacles to RVA include learners' legal status, the equivalence of qualifications, a lack of documentation, language barriers and costs.

Table 4.6 summarizes some of the key RVA challenges discussed in Chapter 3, and how some of the programmes in this report address specific aspects of these challenges. The most common strategies include aligning programmes with regional or national curriculum frameworks, establishing specific agreements with relevant universities and developing mechanisms for the recognition of prior learning, carrying out advocacy among policy-makers and other stakeholders, and awarding learners electronic badges for motivational purposes.

Table 4.6. Challenges and programme-specific strategies for RVA		
Challenge	**Programme strategy**	**Name of programme**
Lack of RVA of learning, preventing refugees, migrants and IDPs from pursuing further education and participating in the labour market	Establish learning agreements with formal systems such as higher education institutions that enable students to transfer from the programme into these institutions and receive credits for prior learning	Kepler Kiziba Kiron Campus
	Align the programme's curriculum with the national curriculum or national qualification framework (NQF) to ensure recognition by ministries of education or other relevant authorities	Learning Coin for Equitable Education NRC Youth Programme Jordan
	Ensure curriculum and content aligns with internationally recognized frameworks, such as the Common European Framework of Reference (CEFR) for Languages or provides an internationally recognized certification, such as the International Computer Driving Licence	Global English Language Programme NRC Youth Programme Jordan
	Advocate for policy-makers and relevant stakeholders to shape national systems to be more responsive to the needs of refugees, migrants and IDPs	Upskilling Adults 45+ with Migrant Background
	Award a certificate of completion when learners successfully complete the minimum requirements of a course or programme	Education for Humanity Global English Language Programme
	Award badges and other virtual rewards upon completion of tasks in recognition of learners' achievements	vhs-Lernportal

Source: Authors' elaboration

The curriculum of the **Learning Coin for Equitable Education** programme was aligned with the national curriculum to help migrant learners pass national literacy examinations in Thailand, and the **NRC Youth Programme Jordan** has been accredited by the Jordanian Centre for Accreditation and Quality Control since 2018 and by the Technical and Vocational Skills Development Commission since December 2020. The **Global English Language Programme** aligned its curriculum with recognized standard frameworks such as the Common European Framework of Reference (CEFR) for Languages. Apart from the CEFR, the International Computer Driving Licence was another widely recognized standard that was part of the **Norwegian Refugee Council's (NRC) Youth Programme**.

The **vhs-Lernportal** in Germany was developed in part to enable refugees to begin learning German and about Germany without requiring official certification of their legal status, a requirement for subsidized in-person language courses. While there is no official recognition of learning achievements on the platform, learners can print out a list of their achievements as informal evidence of their learning. However, informal certification can be problematic when host countries do not recognize learning provided in programmes. For example, Jordanian authorities do not recognize **NRC Youth Programme** certificates awarded to Syrian refugee youth for some of their courses, such as life skills, perhaps lowering motivation to participate among young people.

Kepler Kiziba and **Education for Humanity** demonstrate that technology can provide an important pathway to increased access to higher education in refugee camp contexts (Dahya and Dryden-Peterson, 2016). **Kiron Campus**, in particular, has benefited refugees in Germany by creating a pathway for its refugee learners to have their tertiary-level online learning recognized and accredited at higher education institutions in Germany.

While programmes mentioned plans to explore the use of blockchain technologies to provide digitally secure certification, the use of advanced technologies in RVA for refugees, migrants and IDPs was neither explicit nor systematic. Exploring the potential and practical uses of such technologies is important as RVA remains one of the areas that deserves more focus to overcome the already significant disadvantages faced by these target populations.

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5.1 RECOMMENDATIONS

The following recommendations draw on the insights offered by the combined analysis of the 25 programmes and the literature review. They seek to cover the global, national and programme levels of ICT-supported literacy learning contexts for refugees, migrants and internally displaced youth and adults. The target audience for these recommendations includes policy-makers, literacy providers, private companies, research institutions and non-governmental organizations.

At the global level:

- Capture more comprehensive and disaggregated data on literacy rates and numbers of youth and adult refugees, migrants and IDPs.
- Improve RVA mechanisms in literacy and education programmes for refugees, migrants and IDPs and their prior learning achievements.
- Broaden existing research agendas to include ICTs and the literacy practices of youth and adult refugees, IDPs and migrant learners in the contexts of those most in need, particularly in low- and middle-income countries, learners with disabilities, minorities and other vulnerable groups.

At the national level:

- Improve ICT infrastructure for better coverage where refugees, migrants and IDPs reside.
- Ensure quality and affordable access to ICT devices and internet connectivity for the learning, communication and information needs of refugees, migrants and IDPs.
- integrate monitoring and evaluation into literacy programmes to respond to learners', educators' and other stakeholders' feedback, and demonstrate impact and efficacy.

At the programme level:

- Provide continuous training and development opportunities for educators, facilitators and teachers in the use of technologies for effective literacy instruction with learners from refugee, migrant and internally displaced backgrounds, including training in socio-emotional support and trauma-informed teaching.
- Include educators, facilitators, teachers and other education personnel in designing technology-supported programmes to ensure instructional effectiveness.
- Consult with and involve learners from refugee, internally displaced and migrant backgrounds in the design of ICT-supported literacy programmes and throughout programme implementation.
- Design learning content to meet learners' needs, taking into consideration their everyday experiences, and their existing literacy, numeracy and broader education levels. The limited experience of using different types of ICT, diverse mother-tongue languages and cultural diversity of refugees, IDPs and migrants should also be considered.
- Understand and document the impact of the literacy programmes on literacy and other aspects of the learners' well-being.
- Integrate principles of Universal Design for Learning to ensure that aspects of content, such as teaching approaches, ICT modalities, assessment, monitoring and evaluation, all recognize, accommodate and assist learners at risk of exclusion.
- Develop strategic partnerships between sectors and public, private and non-profit organizations to enhance programme strengths and mitigate challenges in programme implementation.

5.2 CONCLUSION

The challenge of supporting and ensuring that youth and adult refugees, migrants and IDPs attain minimum literacy proficiency in a manner that meets their diverse needs across their different contexts is huge. Literacy offers a wide range of benefits to the learner, such as increased resilience, improved self-confidence and self-esteem, better prospects for employment, better health outcomes, a stronger sense of agency, and motivation to further their education and social integration. These are especially critical for refugees and IDPs in the different phases of involuntary displacement, particularly given the trend of protracted displacement that can last years or even decades. Literacy and education opportunities offer tangible improvements to these groups' quality of life during a time of stress, potential trauma, and loss of identity, livelihood and property.

Literacy is equally beneficial to migrants. It may mitigate the risk of exploitation, abuse or even death, given that most migrants work in low-skilled, low-paid jobs in large, developed economies.

These benefits are all key contributing factors to the ideal of education as essential to the full development of human capability and dignity; they also allow every person to participate fully in society. These principles and goals are laid out in numerous international legal and policy documents, including the Universal Declaration of Human Rights, the Sustainable Development Goals and the Global Compact for Safe, Orderly and Regular Migration, irrevocably obliging us as a society to meet this challenge head-on.

While ICTs offer great potential to address this challenge, the literature and programmes high-lighted here show that it is a supportive tool but not a panacea. The fundamentally challenging cognitive nature of language acquisition to achieve minimum literacy proficiency coupled with each learner's unique sociocultural context and needs requires that the appropriate technology be integrated based on a learner-centred approach and a proper understanding

of learner attitudes and behaviours with respect to ICTs. Using ICTs to support literacy provision also requires understanding how existing or new infrastructure and systems function – not independently, but in an ecosystem within which educators (or digital substitutes), learners, digital learning contents and the learning and living environment all mutually interact.

The emerging literature on refugee, migrant and IDPs suggests that mobile phones have become a ubiquitous and indispensable digital device. However, the programmes and literature show that a need exists for proven, scalable and even more widely accessible technology, such as interactive radio instruction and film or television subtitling, whether alone or in combination with other technological modalities. Programme content must be relevant to learners' needs and contexts. It should, for example, enable them to develop digital skills and acquire literacy for work, have a better understanding of relevant health matters or navigate government bureaucracy and paper-work.

However, despite the recognized benefits of using a learner's mother tongue for teaching, few programmes cited using refugees' and migrants' native languages to teach the host country's language and culture. The same applies to literacy programmes for IDPs. The expansion of the **Thabyay eLearning Platform** programme to include Burmese and Karen in addition to English, and the **Learning Coin for Equitable Education** project that supported Thai and Malay are positive examples of such accommodation.

The programmes showcase the use of diverse technologies in different parts of the world to teach different languages. They address varying populations inclusively, at different scales, in a way that is aptly reflective of the unique contexts of the youth and adult refugees, migrants and IDPs for whom the programmes are designed. Examining these programmes leads to a more critical understanding of ICTs' potential and limitations in supporting literacy provision for these target populations. However, what is less clear and where evidence is still lacking is

whether these technology-based programmes make the best use of limited resources, and how learning gains made in these programmes compare with learning gains made in programmes that do not feature or rely on technology.

This study offers four significant insights into the use of innovative technology in literacy and education for refugees, migrants and IDPs. First, **there is a significant gap in our understanding of the state of literacy and literacy provision among youth and adult refugees, migrants and IDPs. Adult literacy is not visible in international policy and legal documents nor in most of the literature produced by international organizations and humanitarian aid organizations that play major roles in providing education for refugees and IDPs**. Migrants are likely to have varying degrees of access to adult literacy programmes depending on their location: however, reliable data are not available in their context, as the SDG 4 indicators on education do not disaggregate by migrant or displacement status. Governments, international organizations and humanitarian aid organizations need to come together to understand the situation before they can tackle this challenge coherently. The recent literacy, numeracy and life skills assessment of Syrian refugee youths in Lebanon carried out by UNESCO, with support from UNHCR, is an inspirational example of addressing this issue (UNESCO, 2020b).

Second, **technological innovations combining established low-cost, non-digital technologies and methods, such as interactive radio instruction with advanced algorithms, offer encouraging possibilities to scale up effective literacy and education programmes**. These should be further explored, given that almost half the global population does not have internet access. The lack of access to digital devices and internet connectivity is becoming an increasingly significant barrier as more programmes use social media, video conferencing platforms, learning management systems and online resources. This situation has been exacerbated by restrictions imposed on in-person teaching and learning during the COVID-19 pandemic. Developing and

sustaining these programmes will likely require strategic engagement with multiple stakeholders, from private individuals to governments, to combine relevant expertise and resources for the effective implementation of learning programmes for youth and adult refugees, migrants and IDPs.

Third, **the literature and programmes underline the importance of placing refugees, migrants and IDPs at the centre of the design and implementation of such programmes**. This requires focusing on understanding their specific learning needs, personal experiences and learning environment, including their community and commute and their ICT practices, among other things. The programmes and literature often combined literacy with digital skills in literacy lessons and dedicated lessons and content that enhanced learners' daily lives, employment prospects, and community participation and interaction.

Fourth **is the importance of local, national and international, cross-border strategic partnerships for the effectiveness of ICT-supported literacy and education programmes**. Programmes highlight how engagement with local, community-based organizations was critical for delivering ICT devices, conducting literacy courses and other education opportunities in multiple countries, enrolling refugee, migrant and IDP learners, and monitoring and evaluation. At the national level, private telecommunications providers supported internet connectivity while other companies provided ICT devices. Government institutions were also important gatekeepers in reaching out to refugees, migrants and IDPs, and helped coordinate programme implementation. Moreover, the many cross-border partnerships exemplify how resources and expertise in using ICT to support literacy and education for refugees, migrants and IDPs exist globally and can be brought together for those who need it most.

The challenge is considerable, and we can only meet our obligation towards the most vulnerable – refugees, migrants and IDPs – through the collective efforts of governments, international organizations, academia, literacy providers, private sector companies, educators and learners. Only then will it be possible to fulfil the obligations enshrined in the Sustainable Development Goals.

6.1 INCLUSION / EXCLUSION CRITERIA FOR LITERATURE REVIEW

Dimension	Inclusion criteria	Exclusion criteria
Education level	– Secondary and post-secondary – Technical and vocational education and training (TVET) – Higher education – Adult learning and education (literacy)	– Early childhood – Primary
Education type	– Formal – Informal and non-formal – State – Non-state	
Countries	– All countries	
Age	– Youth[8] and adults	– Children under 15
Migrant status	– Refugees, asylum-seekers, IDPs, migrants	– Stateless
Research age	– Focus on the past 5 years (2015+) or on key projects from the past 10 years (2010+)	
Types of studies	– Peer-reviewed studies (published in academic journals) – Quantitative studies designed to examine specific elements of the assumed intervention mechanism – Meta studies – Qualitative research (including academic research) – Programme evaluations – Grey literature – Literature reviews – Conceptual and theoretical academic research	– Studies that do not further understanding of the mechanisms at play – Purely exploratory studies (without valid / credible findings on effects; effect size)
Document language	– English	

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[8] The UN definition of youth can be found at www.un.org/esa/socdev/documents/youth/fact-sheets/youth-definition.pdf.

6.2 FRAMEWORK FOR ASSESSING QUALITY OF EVIDENCE

Principles of quality	Associated principles
Conceptual framing	Does the study acknowledge existing research?
	Does the study construct a conceptual framework?
	Does the study pose a research question?
	Does the study outline a hypothesis?
Openness and transparency	Does the study present or link to the raw data it analyses?
	Does the author recognize limitations/weaknesses in their work?
Appropriateness and rigour	Does the study identify a research design?
	Does the study identify a research method?
	Does the study demonstrate why the chosen design and method are good ways to explore the research question?
Validity	Has the study demonstrated measurement validity?
	Is the study internally valid?
	Is the study externally valid?
Reliability	Has the study demonstrated measurement reliability?
	Has the study demonstrated that its selected analytical technique is reliable?
Cogency	Does the author 'signpost' the reader throughout?
	Are the conclusions clearly based on the study's results?

Source: DFID, 2014

6.3 FULL LIST OF 25 PROGRAMMES

No	Name of programme	Name of organization	Country of origin	Website	Years active
1	BASAbali Wiki	BASAbali	Indonesia	www.BASAbali.org	2011 -
2	Better Connections	Reach Out to Asia – Education Above All	Qatar	reachouttoasia.org	2014 -
3	Broad Class: Listen to Learn	POWER99 Foundation	Pakistan	www.power99.foundation	2015 - 2017
4	Connected: Adult Language Learning through Drama	Sydney Theatre Company	Australia	www.sydneytheatre.com.au/connected	2016 -
5	DigLin: The Digital Literacy Instructor	Friesland College	Netherlands		2013 -
6	Dogme Training Programme	Mosaik Education	UK	https://mosaik.ngo/	2020 -
7	Education for Humanity	Education for Humanity, Arizona State University	USA	www.edforhumanity.asu.edu	2019
8	English Language Course for Refugee Teachers	Education Development Trust (EdDevTrust)	UK	www. educationdevelopmenttrust.com	2017 -
9	Global English Language programme	Jesuit World Learning	Switzerland	www.jwl.org/en/home	2017 -
10	Kepler Kiziba	Kepler	Rwanda	www.kepler.org	2013 -
11	Kiron Campus	Kiron Open Higher Education GmbH	Germany	www.kiron.ngo	2015 -
12	Learning Coin for Equitable Education	UNESCO Bangkok	Thailand	www.bangkok.unesco.org/theme/non-formal-education-and-literacy	2018 - 2019
13	Migrant Liter@cies	Centro Zaffiria	Italy	www.zaffiria.it	2017 - 2020
14	M-Shule SMS Learning & Training	M-Shule	Kenya	https://m-shule.com/	2017 -
15	Norwegian Refugee Council Youth Programme	Norwegian Refugee Council – Jordan	Norway	www.nrc.no/	2012 -
16	Paper Airplanes	Paper Airplanes	USA	www.paper-airplanes.org	2014 -
17	Rising On Air	Rising Academy Network	Sierra Leone	www.risingacademies.com	2020 -

No	Name of programme	Name of organization	Country of origin	Website	Years active
18	Sistema Interactivo Transformemos Educando	Fundación para el Desarrollo Social Transformemos (Transformemos Foundation for Social Development)	Colombia	www.transformemos.com	2004 -
19	SpråkPlay	Språkkraft (LanguagePower) NPO	Sweden	www.sprakkraft.org	2015 -
20	Thabyay eLearning Platform	Thabyay Education Foundation	Myanmar	www.tepedu.org	2009 -
21	UNHCR and Makhzoumi Foundation Mission with I'dad Center	Friends of the Disabled Association	Lebanon	www.friendsfordisabled.org	2019 - 2020
22	Upskilling Adults 45+ with Migrant Background	Romanian Institute for Adult Education	Romania	www.irea.ro	2019 - 2022
23	Using educational platforms, TV, as Innovative Literacy Learning and Education for Refugees, Migrants and Internally Displaced Persons (IDPs) in Syria	The National Center for Educational Curriculum Development, Syrian Ministry of Education	Syrian Arab Republic	www.sep.edu.sy	2018 -
24	vhs-Lernportal	Deutscher Volkshochschul-Verband e.V. (DVV, German Adult Education Association)	Germany	www.volkshochschule.de	2016 -
25	We Love Reading	We Love Reading	Jordan	www.welovereading.org	2006 -

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Globally, the number of refugees, migrants and internally displaced persons (IDPs) has increased significantly over the past 10 years to reach unprecedented highs. Displacement from conflict and natural disasters, further exacerbated by climate change, has heightened the challenge and made it more pressing. Access to inclusive quality education for youth and adults is especially critical in the context of prolonged displacement. Literacy and numeracy are particularly important because they form the core of basic education. Literacy is also a crucial component of self-directed learning and the pursuit of opportunities to acquire skills and qualifications for work and to lead dignified lives.

This report reviewed relevant literature and analysed 25 programmes from across the world that have used innovative information and communication technologies (ICTs) in literacy and education for refugees, migrants and IDPs. It identifies a lack of data on the state of literacy for youth and adults globally, and limited literature on the effectiveness of ICTs in sup-

porting literacy and education programmes for refugees, migrants and IDPs. However, the 25 programmes reveal that ICTs play an important role in overcoming barriers to learning for these target groups. The strategies followed by these innovative ICT-supported programmes are elaborated across six thematic areas: (1) access and inclusion, (2) capacity-building of teachers and educators, (3) relevant content and innovative andragogy, (4) monitoring and evaluation, (5) strategic partnerships and (6) recognition, validation and accreditation of learning.

Policy-makers, programme providers, international organizations, civil society, and, indeed, anyone with an interest in meeting the obligation to provide inclusive quality education for the most vulnerable, will benefit from the rich analysis and diverse examples included here. Together, they illustrate how technology can be used to support literacy and education programmes for refugees, migrants and internally displaced persons, using an evidence-based, learner-centred approach.

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