

# Teaching and Learning in Fragile Contexts (TLFC) Research Summary



## Using Digital Tools for Education in Emergencies

In 2024 and 2025, the Canadian NGO CODE commissioned a series of African research studies in partnership with Global Affairs Canada, to help build the regional evidence base on what works to improve literacy and learning outcomes for children in refugee and internally displaced person (IDP) communities. Some of these studies explored how digital technologies—such as mobile devices, online platforms, and artificial intelligence (AI)—can support education in emergency settings.

Across crisis-affected contexts, digital tools are helping expand access to learning where schooling is often disrupted. Research by Dr. George Ngwacho Areba and Dr. Titus Pacho in **Kenya** found that mobile devices allow teachers and students to access lesson materials, videos, and syllabi, even where resources are limited. These tools support flexible and self-directed learning, helping students continue their education outside the classroom. However, many teachers reported challenges such as poor internet access, unreliable electricity, and high costs for devices and data. Teachers' digital skills are also critical—those with stronger skills were more confident and effective. Over 70 percent of teachers called for practical, context-specific guidance to help them use mobile technology in their teaching.



Research by Prof. Paul Shehu Yaduma in northeast **Nigeria** shows similar benefits. In conflict-affected areas where schools are often closed or unsafe, digital platforms help ensure continuity of learning. Teachers reported that digital tools improved lesson delivery and made it easier to share materials and assess students. Students were also more engaged and motivated, especially when learning included interactive or mobile-based content. However, infrastructure gaps and limited digital skills continue to restrict impact. His research emphasizes that digital learning must be supported by investments in connectivity, equipment, and teacher training.

Looking at newer technologies, research by Marvin Ggaliwango in **Uganda** explored the use of AI tools in education. He found that many teachers are already using AI, but not all can identify biased or inaccurate information. This creates risks in fragile settings, where content must be culturally appropriate and sensitive. To address this, his work focused on building teachers' capacity to critically assess and adapt AI-generated content. Teachers were supported to develop locally relevant materials and take an active role in shaping how AI is used. The study also highlights the importance of clear safeguards, including data privacy guidelines, to ensure safe use of AI in education systems. Moreover, locally developed solutions are essential.

Global AI tools often do not reflect local languages or contexts. Working with teachers and national partners, the project developed localized, offline-friendly AI tools better suited to learners' needs.

Research by Theodore Habimana in refugee camps in **Rwanda** further highlights both the potential and limits of digital technologies. He found that ICT tools can improve student engagement, attendance, and teacher preparation, even in difficult conditions. However, improvements in literacy outcomes have been uneven. Ongoing challenges—including limited teacher training, high staff turnover, and weak policy implementation—continue to affect results.



Taken together, these studies show that digital technologies can play an important role in supporting education in emergencies. They can expand access, improve engagement, and help maintain learning during crises. However, their success depends on strong teacher support, reliable infrastructure, and solutions that are adapted to local contexts.

**Download this research from: <https://code.ngo/tlfcresearch/>**