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HELPDESK RESPONSE 167

# EdTech to Support Out-of-School Children and Adolescents

## A curated list of EdTech interventions

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# About this document

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# Contents

# Abbreviations and acronyms

| | |
|---|---|
| **AGYW** | Adolescent girls and young women |
| **ASA** | Advisory Services and Analytics (World Bank) |
| **BEFIT** | Building Education Foundations through Innovation & Technology |
| **DREAMS** | Determined, Resilient, Empowered, AIDS-free, Mentored and Safe (USAID partnership aimed at reducing rates of HIV among adolescent girls and young women) |
| **EAGER** | Every Adolescent Girl Empowered |
| **OOSC** | Out-of-school children |
| **FLN** | Foundational literacy and numeracy |
| **GEC** | Girls' Education Challenge |
| **IRI** | Interactive radio instruction |
| **IAI** | Interactive audio instruction |
| **IVR** | Interactive voice response |
| **LNGB** | Leave No Girl Behind |
| **TEAM Girl Malawi** | Transformational Empowerment of Adolescent Marginalised Girls in Malawi |
| **UNFPA** | United Nations Population Fund |
| **VSO** | Volunteer Service Overseas |

# 1. Purpose and goals of the request

This Helpdesk report was created in response to a request from the World Bank Malawi Education Team for a curated list of resources on examples of EdTech interventions targeting out-of-school children and adolescents to inform an ASA (Advisory Services and Analytics) output. The ASA output will provide policy options to improve second-chance learning and foundational skills for out-of-school children (OOSC).

The particular areas of focus were identified as:

- Programmes that teach foundational literacy and numeracy (FLN) to children aged 10–14 to support re-entry into the education system.
- Programmes targeted at providing relevant skills and literacy to 15–19-year-olds who have dropped out of school and possibly focus on agricultural skills.
- Programmes that focus on girls and adolescent women.

To provide the World Bank Malawi team with adequate information on the above. This curated list begins with an introduction to the use of EdTech to support out-of-school children and youth. It then presents examples of such interventions and programmes within Malawi, the wider African region, and the rest of the world. This list is designed to serve as a resource for the team and does not make any direct recommendations on actions to be taken.

The list has been organised into three sections. Section 2 presents an overview of impactful and sustainable use of EdTech to support learning. This section focuses particularly on the role of radio and audio programming as an educational tool. Section 3 highlights select examples and use cases to better inform and support World Bank Malawi's Education Team in developing the ASA output. Throughout the research process, a range of interventions were found to be highly innovative and informative, but for one reason or another did not meet the criteria to be highlighted as a primary example. These interventions have been included in Section 4 as additional resources for consideration

# 2. EdTech to support out-of-school children and adolescents

Educational technology (EdTech) is widely considered a means of enabling more children to have access to impactful and continuous education, both within and outside the education system. This is attributed to its potential to deliver education over distance and at scale, and because it can be personalised to children's needs. As such, it presents a range of opportunities to support out-of-school children in a cost-effective and targeted manner.

Potential EdTech solutions include high-tech digital technologies, which generally require internet access, as well as low-tech modalities such as radio and television. No-tech solutions are also an important and viable option because access to electricity and connectivity remains limited in extremely remote areas.

Equity, inclusion, and safety are essential considerations when choosing high-, low-, and no-tech modalities. The realities of digital divides must be considered, as technology can exacerbate existing inequities, and access is a major challenge for some marginalised groups. As such, interventions that use EdTech must be tailored to the particular context in which they are used, recognising the specific needs they are intended to address and balancing high, low, and no-tech modalities as appropriate. Given that only 16.4% of the households in Malawi have access to the internet (↑National Statistics Office, 2019), low-tech and no-tech solutions may be the most contextually appropriate to reach out-of-school children.

Evidence shows that when carefully designed and implemented, low-tech solutions like radio, television, messaging, and tech-enabled personalised learning can help support learning outcomes for rural, hard-to-reach, and out-of-school learners. Educational radio programming can be cost-effective for large-scale remote learning, particularly in countries with limited infrastructure, stakeholder support, and many listeners (↑Damani & Mitchell, 2020). Such programmes would be well suited to Malawi, where 33.6% of households own radios, making radio the second most prevalent technology at the household level after mobile phones, with a household ownership level of 51.7% (↑National Statistics Office, 2019).

## 2.1. Radio and audio programming

Educational radio programming can take various forms and use various EdTech modalities, as defined in Sections 2.1.1 and 2.1.2 below.

### 2.1.1. Types of educational radio programmes

**Classic radio instruction**: Focused primarily on content delivery, this approach is typically targeted towards older students and adult learners (↑Zacharia, 2020).

**Interactive radio instruction (IRI)**: IRI combines radio broadcasts with active learning to improve learning and teaching. IRI learners react to prompts embedded in radio lessons and engage in as many ways as possible to practise their new learning (↑Zacharia, 2020). There is significant evidence of the effectiveness of IRI in improving student learning outcomes, even in more challenging learning environments (↑Education Development Center, 2009).

**Interactive audio instruction (IAI)**: IAI lessons use the same content and format as IRI lessons but use delivery modes other than radio, allowing for greater reach. For example, audio content can be accessed via mobile phones (e.g., memory cards / podcasts), interactive voice response (IVR), MP3 players / CDs, or audio streaming / downloading (↑Zacharia, 2020).

### 2.1.2. Delivery modes for educational radio

**Radio**: Educational content can be aired on radio stations across the country. However, this requires learners to tune in at scheduled times to access the content, so this mode is incompatible with asynchronous learning.

**Mobile phones**: Audio content can be delivered via MP3 format through SMS messages, WhatsApp, Bluetooth, and memory cards. Once downloaded, the content can be accessed on demand and allows learners to engage with it at their own pace.

**Interactive voice response (IVR)**: IVR is an alternative low-tech solution with the potential to reach students and teachers on a large scale. Callers can dial a number to enter into an IVR system, where they can navigate through an audio menu to listen to audio lessons on their phones. The caller is then guided through an interactive computer-operated phone system, which allows the caller to interact either through the use of speech recognition or via the keypad on the phone. IVR systems respond with pre-recorded or computer-generated audio content to further engage the caller through a progression of sequenced information or audio content (↑Afoakwah et al., 2021).

### 2.1.3. Cost considerations

Developing educational radio programmes generally involves high fixed and initial costs, with low recurring costs. Additionally, annual per-student costs are substantially lower than those for other technologies, and as more learners are reached, these costs decrease. Cost estimates range between USD 1.00 per student / year to a few cents (>USD 1) per child / year at a considerable scale and using a broadcast medium (↑Zacharia, 2020). Table 1 below identifies components to factor into cost analysis.

**Table 1.** *Cost considerations for radio and audio programming for education.* Source: ↑Zacharia, 2020

| Starting costs | Recurring costs | Cost to users |
|---|---|---|
| ■ Audience research / programme design<br>■ Lesson planning (scope & sequence; overview planning)<br>■ Scriptwriting<br>■ Testing<br>■ Audio production (e.g., recording of programmes, music, editing (including altering existing programmes, dubbing))<br>■ Developing education print material if needed (e.g., teacher guides)<br>■ Public awareness campaigns<br>■ Technical assistance<br>■ Staff salaries<br>■ Teacher & listener / home teacher training & support | ■ Broadcasting airtime<br>■ Ongoing lesson planning<br>■ Lesson delivery devices and supporting material (e.g., radio, mobile phones, memory cards, CDs, MP3 players, batteries, chargers)<br>■ Printing of educational material (if needed)<br>■ Distribution (e.g., teacher guides, radios, batteries)<br>■ IVR: Toll-free line (if IVR is funded by institutions) | ■ Electricity (solar power, crank- or battery-charged)<br>■ Cost of playback devices: Radio, MP3, CDs (if borne by users)<br>■ IVR: Telecom use charge (if borne by users)<br>■ IAI: Cellular data charges |

### 2.1.4. Regional examples of educational radio

**Taonga Market Interactive Radio Instruction**:[1] The United States Agency for International Development (USAID) supported the creation of the *Taonga Market* IRI programme to help the Zambian Ministry of Education reach Zambia's out-of-school orphan population. The programme aimed to support out-of-school youth by providing them with radio-based learning content to enable them to re-enter school. The project began by establishing 20 radio learning centres that later grew to 1,000, staffed by community volunteers to provide education to out-of-school children and to offer psychosocial support for orphans and vulnerable children and their caregivers.

The community volunteers act as mentors and guide the children through the daily broadcast lessons with the help of a guidebook. The learners and mentors assemble at a central location (which varies from day to day) and listen to the lesson together on a shared device.

Taonga Market's success in supporting out-of-school children led the ministry to adopt the programme in government schools as well. Although the Taonga Market programme was implemented in the early 2000s, it still presents an informative use case for leveraging IRI to support out-of-school children. It can be used to inform programmes that are more appropriate for current times (↕Education Development Center, Inc, 2020).

**Somali Interactive Radio Instruction Program (SIRIP)**:[2] From 2005 to 2011, SIRIP provided IRI to 330,000 children in Grades 1–5 attending formal, non-government, Quranic, and community schools in Somalia. Radio programmes were broadcast daily (three hours per day, up to five days per week). Radio lessons were also supplied to students and teachers. The programme covered basic literacy and numeracy skills, along with life skills, health, conflict prevention, and mediation, with 30-minute programmes addressing a particular learning objective. SIRIP demonstrated success, with Grade 1 SIRIP learners scoring 15% higher than non-SIRIP learners on standardised literacy tests and 20% higher in maths. Although SIRIP focused on in-school early learners, this model lends itself to adaptation and replication for delivering skills-based content for out-of-school children in Malawi (↕Education Development Center, Inc, 2020).

**Rising Academy**:[3] Although focused primarily on in-school learning, Rising Academy's Rising on Air programme offers a model that could also meet the needs of out-of-school youth and children. It is a freely usable and adaptable 20-week programme of ready-to-air radio scripts and SMS content reaching

[1] https://www.edc.org/zambia-questt-iri Retrieved 30 August 2023
[2] https://www.edc.org/sites/default/files/uploads/Somalia-SIRIP.pdf Retrieved 30 August 2023
[3] https://www.risingacademies.com/ Retrieved 30 August 2023

over 25 countries through 35 partners and has been translated into 12 languages. The featured content includes literacy / language, arts, and numeracy / maths for five different levels across K–12 (↑Rising Academies, 2023).

# 3. Example EdTech interventions

The following are examples of EdTech interventions from within Malawi and across the globe. The examples have been included on the basis of the relevance of their overall design and targeted population and skills.

| Team Girl Malawi | |
|---|---|
| *Target population* | Out-of-school adolescent girls aged 10–19 |
| *Targeted skills* | Literacy, numeracy, and life skills; sex education, basic business training |
| *Aims* | Empower marginalised girls in Malawi and improve their life chances by enhancing their learning outcomes and helping them transition to education, training, or employment. |
| *Geographic scope* | Malawi (40 communities in urban Lilongwe, rural Dedza, and rural Mchinji) |
| *Timeline / implementation status* | 2018–2023. The project ended in October 2023. |
| *Description* | 'Transformational Empowerment of Adolescent Marginalised Girls in Malawi' or 'TEAM Girl Malawi' was part of the Leave No Girl Behind (LNGB) window under FCDO's Girls' Education Challenge (GEC) and implemented by international education charity Link Education.[4] It aimed to improve learning and life chances for marginalised adolescent girls who had never been to school or dropped out without gaining functional literacy and numeracy. The project delivered Complementary Basic Education (CBE) classes for literacy, numeracy, and life skills. It also hosted vocational and basic entrepreneurship training with access to a village savings and loan group and organised peer-to-peer support groups focused on sexual reproductive health and rights (↑Link Education International, 2021). |
| *EdTech modality* | Through a rapid assessment, TEAM Girl Malawi identified a lack of access to distance learning technology among the girls it targeted. Considering this lack of access and learners' preferred methods of engaging, the programme chose not to use technology for delivery. Instead, it delivered training and learning materials through community-based learning centres. TEAM Girl Malawi ended in October 2023 with the end of the GEC programme. While the TEAM Girl Malawi intervention did not use technology to deliver learning content to girls, there are opportunities to incorporate technology in future adaptations of the |

[4] https://linkeducation.org.uk/ Retrieved 24 July 2023

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| | model. These could include, for example, using technology for monitoring and evaluation or for providing tech-based learning materials in the learning centres (↑Link Education International, 2021). |
| *Evidence of impact* | The project supported 5,250 girls and 1,050 boys who were out-of-school adolescents aged 10–19. A midline evaluation showed an 88% increase in reading scores, an 85% increase in mathematics scores, and an 83% increase in scores associated with life skills among the participating girls, as well as an increase in community volunteerism (↑da Silva et al., 2022). |
| *Opportunity for scalability (or implementation in Malawi)* | The intervention has the potential to be scaled up and introduced to more communities in Malawi. Considering that marginalised girls have limited access to learning resources, electricity, and the internet, TEAM Girl Malawi offered a relevant no-tech model. The use of low-tech modalities, such as radio, could be considered for content delivery to increase reach. |
| *Cost consideration* | The average annual cost for TEAM Girl Malawi was GBP 292 per beneficiary. This included the effort of reaching extremely marginalised out-of-school girls, setting up community learning centres (a significant element of the programming), payment of facilitators, and additional support to girls who have completely missed out on education (↑Sarton & Thukral, 2021, p. 29). |
| *Sustainability* | TEAM Girl Malawi used a community-based structure (CBS) to work closely with communities, which led to increased community engagement and improved understanding of the importance of education (↑da Silva et al., 2022). |
| *Sources and further information* | TEAM girl Malawi project information[5]<br><br>TEAM girl Malawi Distance Learning Case Study[6] |

[5] https://girlseducationchallenge.org/projects/project/team-girl-malawi/Retrieved 18 December 2023
[6]https://girlseducationchallenge.org/media/4tphjwvh/dtl_casestudy_team-girl-malawi_may-2021.pdf Retrieved 30 August 2023

| APA DREAMS / Siyakha Girls Economic Empowerment Initiative | |
|---|---|
| *Target population* | Adolescent girls and young women (AGYW), aged 15–24 |
| *Targeted skills* | Financial literacy, social asset building for employment, sex education |
| *Aims* | Strengthen economic resilience of vulnerable AGYW and increase their self-confidence, assertiveness, goal-oriented behaviours and ability to negotiate safe sex. |
| *Geographic scope* | Ten countries in sub-Saharan Africa, including Malawi, eSwatini, Kenya, Lesotho, Mozambique, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. |
| *Timeline / implementation status* | The global DREAMS partnership was announced in 2014. In Malawi, USAID funded the partnership from 2016 to 2021. Since 2020, DREAMS programming has been integrated into the Ana Patsogolo Activity (APA). The APA DREAMS initiative will continue through 2025. |
| *Description* | Funded by the US President's Emergency Plan for AIDS Relief (PEPFAR) and USAID, APA DREAMS is a five-year project aiming to improve the livelihood of adolescent girls and young women (AGYW) aged 15–24 through social asset building, HIV prevention, and sex education. Siyakha Girls Economic Empowerment Initiative is part of the DREAMS intervention package that specifically targets training AGYW for more economic resilience. The APA DREAMS interventions package includes different components for AGYW in different age groups. To improve financial literacy, AGYW are provided with financial knowledge and savings groups, as well as vocational training sessions and mentored internships. The programme also links AGYW to local artisans and entrepreneurs to build up their social assets and open up future employment or entrepreneurship opportunities. |
| *EdTech modality* | Virtual training and support developed in Zimbabwe: During the Covid-19 pandemic, local trainers (DREAMS ambassadors) were equipped with mobile phones and airtime to communicate with service providers and DREAMS participants. Additionally, a flexible package of remote and in-person technical assistance and a paper-based toolkit (Siyakha Girls Toolkit and Guide[7]) were offered to provide technical support for local implementers and expert advice for scaling and adapting the model (↑World Education, Inc./Bantwana, 2020). |
| *Evidence of Impact* | In Malawi, APA has delivered DREAMS to more than 55,000 AGYW in Blantyre, Machinga, Zomba, and Phalombe Districts. In 2022, APA DREAMS enrolled 57,638 AGYW, of which 90% completed the primary |

[7] https://bantwana.org/resource/siyakha-girls-toolkit-and-guide/ Retrieved 30 August 2023

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| | package and 75% completed at least one of the secondary interventions that were offered across various age ranges by mid-year. Ninety-nine per cent of the participants remained HIV-free, delayed marriage, and avoided pregnancy during the programme (↑Bantwana World Education Initiative, 2022). In the pilot of the Siyakha Girls Economic Empowerment project, participants increased job readiness and employment rates: 27% of participants started their own individual or group businesses; 15% secured full-time employment at their internship organisations, and 8% extended their internships; 25% of remaining participants were actively seeking employment by the end of the project (↑Bantwana World Education Initiative, no date). |
| *Opportunity for scalability (or implementation in Malawi)* | The programme's remote technical assistance opens up more opportunities for scale-up. The intervention has the potential to be implemented in the four remaining districts of Malawi that APA DREAMS has not yet reached. |
| *Cost consideration* | N/A |
| *Sustainability* | One of the areas of focus for future APA DREAMS work is to ensure that DREAMS is embedded in local systems for long-term sustainability. |
| *Sources and further information* | The DREAMS (Determined, Resilient, Empowered, AIDS-free, Mentored and Safe) Partnership[8]<br><br>Siyakha Girls Economic Empowerment Initiative[9]<br><br>Siyakha Girls Pilot[10]<br><br>Siyakha Girls Toolkit and Guide[11] |

[8] https://www.usaid.gov/global-health/health-areas/hiv-and-aids/technical-areas/dreams Retrieved 30 August 2023
[9] https://bantwana.org/project/siyakha-girls-economic-empowerment-initiative/ Retrieved 30 August 2023
[10] https://bantwana.org/project/siyakha-girls-pilot-under-the-accelerating-strategies-for-practical-innovation-and-research-in-economic-strengthening-aspires/ Retrieved 30 August 2023
[11] https://bantwana.org/resource/siyakha-girls-toolkit-and-guide/ Retrieved 30 August 2023

| EdTech for sex education (part of Joint Programme Malawi Girls Education) | |
|---|---|
| *Target population* | Adolescent girls (and boys) in Standards 6–8 |
| *Targeted skills* | Sex education |
| *Aims* | Prevent girls from dropping out of school and protect them from gender-based violence by providing comprehensive sexual awareness education to students. |
| *Geographic scope* | Malawi (Dedza, Mangochi, and Salima districts) |
| *Timeline / implementation status* | 2020–ongoing |
| *Description* | As part of the Joint Programme on Education for Girls in Malawi, the United Nations Population Fund (UNFPA) launched a digital learning platform that provides access to learning content on sexual reproductive health and rights. By providing comprehensive sexual education early for young girls and boys, the programme aims to protect adolescent girls from dropping out of school due to early pregnancy, as well as from gender-based violence. Implementation of the programme also involves teachers, parents, and community members. Groups of mothers were trained to provide counselling and outreach to girls who have left school to help them re-enter formal education (↑Global EdTech, 2022). |
| *EdTech modality* | Digital learning platform (with the provision of digital content and devices) |
| *Evidence of impact* | A pilot was successfully implemented in 26 schools in 2020 and the initiative was scaled up to another 20 schools in 2022. Evidence of impact on outcomes is not yet available (↑Global EdTech, 2022). |
| *Opportunity for scalability (or implementation in Malawi)* | The programme has the potential to be scaled up to more schools and districts. However, it is important to consider that some schools might not have adequate internet connectivity or stable enough electricity to support access to digital learning. |
| *Cost consideration* | N/A |
| *Sustainability* | N/A |
| *Sources and further information* | EdTech supporting sex education[12]<br><br>Teachers and mothers join forces to keep girls in school in Malawi[13]<br><br>JP Malawi Girls' Education[14] |

[12] https://global-edtech.com/edtech-supporting-sex-education-for-students-in-malawi/ Retrieved 30 August 2023
[13] https://www.un.org/africarenewal/news/teachers-and-mothers-join-forces-keep-girls-school-malawi Retrieved 30 August 2023
[14] https://mptf.undp.org/fund/jmw00 Retrieved 30 August 2023

| Unlocking Talent / Building Education Foundations through Innovation & Technology[15] (BEFIT) | |
|---|---|
| *Target population* | Out-of-school youth, learners in Standards 1 and 2, children with special needs, and teachers |
| *Targeted skills* | Foundational literacy and numeracy Skills |
| *Aims* | Provide students with digital learning resources and curriculum to build up their literacy and numeracy skills. Improve the quality of primary school education for children in Malawi through the use of technology in education. |
| *Geographic scope* | Malawi, Ethiopia, Kenya, Uganda, Sierra Leone, and South Africa |
| *Timeline / implementation status* | Unlocking Talent was founded in 2013 and is still ongoing. However, in Malawi, the intervention model is now operated under BEFIT; the implementation years of BEFIT are 2023–2029. |
| *Description* | Unlocking Talent is an initiative led by VSO (Volunteer Service Overseas) Malawi in partnership with the non-profit organisation onebillion.[16] It provides tablets and digital learning courses on literacy and numeracy skills for marginalised learners in Malawi and other countries, including out-of-school youth. The course is designed for independent learning and use. Learners receive certificates for each completed topic and a diploma at the end of the course. In addition to working in formal education settings, the initiative has out-of-school outreach programmes and programming in refugee camps. In Malawi, this initiative has transitioned into the Building Education Foundations through Innovation & Technology (BEFIT) initiative led by Imagine Worldwide, VSO, onebillion, and supported by the Government of Malawi. |
| *EdTech modality* | Learning through apps installed on tablets in solar-powered learning centres. |
| *Evidence of impact* | Randomised controlled trial (RCT) studies launched by Imagine Worldwide have shown that students who learn with the tablet and designed courses make better literacy and numeracy improvements than those who learn without them (↑Levesque et al., 2022). However, there is a lack of third-party-led research to confirm these outcomes. The programme has reached 150,000 learners in total, including 1,054 out-of-school youth. In rural Tanzania, out-of-school children demonstrated accelerated learning progress |

15 https://www.imagineworldwide.org/updates/building-educational-foundations-through-innovation-technology-befit-malawi-scale-up-program-overview/ Retrieved 14 September 2023

16 https://onebillion.org/about/ Retrieved 15 December 2023

| | |
|---|---|
| | and improved reading outcomes after 15 months of learning with the onecourse software installed on tablets (↑VSO, no date). |
| *Opportunity for scalability (or implementation in Malawi)* | According to the programme web page, the initiative aims to reach 10,080 out-of-school youth by 2023. However, it is important to note that the new initiative in Malawi, BEFIT, mainly focuses on students in school (↑VSO, no date). |
| *Cost consideration* | According to ↑onebillion (2020), the unit cost of a 'onetab' tablet is around USD 50, but these tablets only host onebillion materials and cannot be used for other purposes. Imagine Worldwide estimated that the recurring cost of supporting a child is USD 5 per year, without including initial startup costs. While this cost seems low, it does not include substantial initial startup costs. Furthermore, in the context of Malawi, the recurring costs cited by Imagine Worldwide constitute roughly an eighth of the government's budget of USD 40 per year per child. |
| *Sustainability* | A low-cost renewable solar energy system powers the learning centres built through the initiative. The tablets are charged by a solar panel and are also shared by learners to increase engagement. The environmentally friendly initiative can potentially reach more students and out-of-school children in Malawi. |
| *Sources and further information* | Unlocking Talent[17]<br>Unlocking Talent in Malawi [18]<br>Unlocking Talent in Malawi: Technical Report 2022 [19]<br>BEFIT Malawi: project overview[20] |

[17] https://www.vsointernational.org/our-work/inclusive-education/system-strengthening/unlocking-talent-through-technology Retrieved 30 August 2023

[18] https://www.vso.ie/fighting-poverty/where-we-fight-poverty/malawi/unlocking-talent-through-technology Retrieved 30 August 2023

[19] https://www.imagineworldwide.org/resource/technical-report-impacts-of-a-2-year-edtech-program-on-early-primary-learning-in-malawi-amid-disruptions-due-to-covid-19/ Retrieved 30 August 2023

[20] https://www.imagineworldwide.org/updates/building-educational-foundations-through-innovation-technology-befit-malawi-scale-up-program-overview/ Retrieved 30 August 2023

| Educate! | |
|---|---|
| *Target population* | Out-of-school youth, girls, secondary school students |
| *Targeted skills* | ICT / digital competencies, entrepreneurship, and employable skills |
| *Aims* | Improve 21st-century skills and prepare youth for employment and entrepreneurship |
| *Geographic scope* | Uganda, Rwanda, Kenya |
| *Timeline / implementation status* | Launched in-school model in 2009 and has since expanded reach as well as the number of programmes. It is an ongoing initiative. |
| Description | The organisation Educate! partners with youth, schools, and governments to design and deliver solutions to tackle youth unemployment in Africa. Programmes are designed to equip young people with the skills to attain further education, overcome gender inequities, start businesses, get jobs, and drive development in their communities.<br>Educate! does this through three delivery channels:<br>■ school solutions<br>■ education system solutions<br>■ out-of-school youth solutions<br><br>For out-of-school youth, Educate! offers skills-based boot camps in Uganda and Kenya to equip out-of-school youth with the skills to transition to employment successfully. Additionally, Educate! is currently piloting 'boot camps' focused on out-of-school girls. The overarching goal of the vertical of work focusing on out-of-school youth is to enhance and build alternative employment pathways that are aligned with strategic sectors and informal economy business models.<br>Educate! uses a distance learning model that offers virtual 'boot camps' alongside other in-person 'boot camps' and training programmes. The 'boot camps' range from 3 to 6 weeks and are highly targeted. An iterative approach ensures the 'boot camps' are impact-oriented and youth-centred. Educate! uses evidence and robust monitoring and evaluation tools to prioritise impact (↑Educate!, no date b).<br>Educate! Also launched an online skills platform, NawiriPro, designed to provide skills development that aligns with the needs of informal sector businesses. The platform is accessible via mobile phones. The pilot project focused on Nairobi's motorbike couriers — a major growth sector in Kenya's informal economy |

| | |
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| *EdTech modality* | Distance learning models that include virtual 'boot camps' and training and SMS and smartphones for monitoring impact. Educate also developed an online mobile platform for skills development: NawiriPro[21]<br>***Note:*** *It is not apparent that Educate! engages in providing devices; rather, it attempts to leverage technologies that communities can access.* |
| *Evidence of impact* | ↑Educate!, (no date a) monitors four target outcomes to determine measurable impact:<br>■ improved livelihoods<br>■ increased business ownership and employment<br>■ increased community participation<br>■ improved workforce readiness.<br><br>External evaluations revealed that participants demonstrated significant and durable shifts in skills as well as improvements in educational and gender-related outcomes, such as:<br><br>■ 50% more likely to be employed from a base of 17% in the comparison group<br>■ 44% more likely to own a business from a base of 26% in the comparison group<br>■ 95% income increase from a base of USD 88.43 in the comparison group<br><br>The following results were observed when focusing particularly on girls:<br>■ 25% increase in university enrolment for women<br>■ 21% less likelihood of having a child<br>■ 8% decrease in inter-partner violence for women<br>■ 244% income increase from a base of USD 32.43 in the comparison group<br>■ 113% more likely to be employed from a base of 9% in the comparison group<br>■ 91% more likely to own a business from a base of 15% in the comparison group<br><br>In 2019, Educate! partnered with the governments of Uganda, Rwanda, and Kenya, impacting over 46,000 youth in and out of school while reaching 470,000 learners more broadly. |
| *Opportunity for scalability (or implementation in Malawi)* | Educate! focuses on cost-effectiveness and has invested in developing a highly replicable model with the aim of expanding to impact youth across Africa. The organisation has a long-term goal of reaching 10 million and, as such, was, from the onset, designed with scalability in mind. The approach to scaling involves |

[21] https://www.facebook.com/p/NawiriPro-100076307340017/ Retrieved 19 December 2023. Please note, at the time of writing, the authors were able to access more information about the Nawiri Pro app from another website. This website is no longer active, and this is the only reference to the app we were able to access.

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| | piloting programmes and using robust evaluations to adapt and change as and when needed. Such an approach would be helpful in rolling out the programme in a new context such as Malawi. |
| *Cost consideration* | ■ Total annual budget:<br>– USD 2.3 million in revenue and USD 1.6 million in expenses in 2015<br>■ Average direct cost per school per year:<br>– USD 4,000 (estimated to drop to USD 2,500 at full scale)<br>■ Cost per Educate! Scholar per year:<br>– USD 100 (estimated to drop to USD 63)<br>■ Revenue sources:<br>– 40% from institutional foundations<br>– 40% from family foundations<br>– 20% from individuals (↑Kwauk & Perlman Robinson, 2016) |
| *Sustainability* | N/A |
| *Sources and further information* | Educate![22]<br><br>Educate! scale and expansion[23]<br><br>Randomised control trial[24]<br><br>Out-of-school youth solutions[25] |

[22] https://www.experienceeducate.org/ Retrieved 30 August 2023
[23] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3956793 Retrieved 30 August 2023
[24] https://www.gov.uk/research-for-development-outputs/educate-rct-4-year-follow-on-interpretation-memo Retrieved 30 August 2023
[25] https://www.experienceeducate.org/out-of-school-youth Retrieved 30 August 2023

| Every Adolescent Girl Empowered (EAGER) | |
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| *Target population* | Out-of-school adolescent girls aged 13–17, including those who have never attended school or who have dropped out early and who are subject to social marginalisation. |
| *Targeted skills* | FLN and financial literacy |
| *Aims* | Aims to build literacy, numeracy, and financial literacy skills for the target population of girls to enhance their opportunities for employability or entrepreneurship. |
| *Geographic scope* | Sierra Leone |
| *Timeline / implementation status* | EAGER is a four-year programme running from 2019 to 2023 |
| *Description* | Every Adolescent Girl Empowered and Resilient (EAGER) is a UKAid-funded Girls' Education Challenge[26] (GEC) Leave No Girl Behind (LNGB) project in Sierra Leone. EAGER is implemented by the International Rescue Committee (IRC) in partnership with Concern Worldwide, Restless Development, and BBC Media Action in ten districts across Sierra Leone.<br><br>The programme includes a transition phase designed to encourage graduates to use the various skills developed through the programme. During the transition phase, EAGER also provides its graduates with additional support, such as an empowerment package and conditional cash grant, to pursue their financial goals and practise the skills they learnt in their financial literacy sessions.<br><br>EAGER produces weekly girl-centred radio programmes and broadcasts them on national and local radio stations. This is done to build support for girls across the wider population. |
| *EdTech modality* | Radio |
| *Evidence of impact* | Through two successive cohorts of girls, EAGER has worked directly with 28,000 out-of-school adolescent girls across Sierra Leone. |

[26] https://girlseducationchallenge.org/ Retrieved 30 August 2023

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| | According to the midline evaluation report:<br>■ Average literacy scores increased by 1.2 SD<br>– 15- or 16-year-old beneficiaries had an average literacy score of 47.4 compared to 19.8 at baseline<br>■ Overall numeracy scores increased by 0.98 SD<br>■ Life skills scores increased by 0.98 SD<br><br>The endline evaluation indicates that 91.91% of participants who completed the learning sessions then proceeded to engage with the empowerment plans.<br><br>Additionally, 87.8% of the caregivers of girl beneficiaries who listened to the EAGER radio show agreed that it helped them understand girls' issues better. Forty-eight per cent of other radio listeners agreed(↑IMC Worldwide, 2021). |
| *Opportunity for scalability (or implementation in Malawi)* | EAGER's range of programme offerings (with add-ons to the basic package) provides opportunities for adaptation and implementation based on Malawi's needs and resource availability for such programmes.<br><br>It is recommended that when scaling and replicating the model, programmes should target 50 girls (two cohorts of 25 girls) per community to optimise cost-efficiency and marginal gains (↑IMC Worldwide, 2021). |
| *Cost consideration* | Airbel Impact Lab (↑Cochran, 2022) found that cost-efficiency gains made through scaling level off at 50 girls per community.<br>Assuming the programme reaches 50 girls per community, the total implementation cost for the Basic Delivery Model is just under GBP 2 million or GBP 431 per girl. Additional delivery components, such as empowerment packages and conditional cash transfers, have a marginal effect on the at-scale programme cost.<br>■ Adding the empowerment package:<br>– Additional GBP 43 per girl<br>■ Adding the conditional cash transfer:<br>– Additional GBP 53 per girl |
| *Sustainability* | The positive impact of the radio programmes with parents and caregivers has resulted in community-driven creation of safe spaces for girls. |

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| *Sources and further information* | EAGER[27]<br>EAGER baseline evaluation report[28]<br>EAGER midline evaluation report[29]<br>EAGER endline evaluation report [30]<br>EAGER scenario analysis [31] |

[27] https://www.rescue.org/eager-project Retrieved 30 August 2023
[28] https://rescue.app.box.com/s/bb6unkcf2avfup16mtzu0b3a0ovt2tsl Retrieved 30 August 2023
[29] https://rescue.app.box.com/s/76j71h19cnht62rwmi7jx5vma68ztdnf Retrieved 30 August 2023
[30] https://rescue.app.box.com/s/85bvc9ecgubp9lfr2rc9l5leq9gi1391 Retrieved 30 August 2023
[31] https://rescue.app.box.com/s/qd6v37kfdowbcl5zfgmol65rjw7tk8me Retrieved 30 August 2023

| Curious Learning | |
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| *Target population* | Children in populations that have no access to school or are in under-resourced schools |
| *Targeted skills* | Literacy |
| *Aims* | Works with a wide range of partners to curate, localise, and distribute free, open-source apps to provide the opportunity to learn to read. |
| *Geographic scope* | Works globally across 195 countries, with offerings in 69 different languages. |
| *Timeline / implementation status* | Started with a pilot in Ethiopia in 2011 and launched its first flagship app in 2017. The project is an ongoing initiative. |
| *Description* | Curious Learning is an open platform that addresses the distribution and learning challenges faced by under-resourced communities. They focus primarily on the development of literacy skills. The organisation works with partners such as Global Digital Library, NORAD, World Bank, UNESCO, and Ubongo, among others, to localise literacy apps such as Feed the Monster[32] — the organisation's flagship app created through the All Children Reading (ACR) Grand Challenge for Development (GCD)[33] EduApp4Syria competition in 2016. Feed the Monster is now available in over 50 languages and has 600,000+ users globally. Recently, Curious Learning supported learners in Ukraine by developing a Ukrainian version of the Feed the Monster app, which reached over 100,000 downloads within two months (↑Curious Learning, 2022). |
| *EdTech modality* | Smartphones, Learning apps |
| *Evidence of impact* | Curious Learning and its partners currently offer over 75 learning apps that reach all 195 countries. They cover over 69 different languages and average 92,000 downloads a month. Their complete content suite has had more than 3.5 million downloads.<br>A study indicated that 22 hours of using apps that Curious Learning helped localise, such as Feed the Monster, was comparable to 2 months of literacy learning in a well-resourced school (↑Koval-Saifi & Plass, 2018). |
| *Opportunity for scalability (or implementation in Malawi)* | Curious Learning runs a programme called Literacy League,[34] where they recruit and engage Literacy Fellows in various countries to champion the organisation's work in their respective countries. This helps the organisation enhance their geographic reach.<br>Curious Learning's localisation, distribution, and measurement model presents a framework that could be effectively replicated in Malawi through targeted and strategic collaboration with the organisation. |

[32] https://play.google.com/store/apps/details?id=com.eduapp4syria.feedthemonsterENGLISH&hl=en&gl=US Retrieved 1 September 2023
[33] https://allchildrenreading.org/competitions/ Retrieved 1 September 2023
[34] https://www.curiouslearning.org/2022-review Retrieved 30 August 2023

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| *Cost Consideration* | Curious Learning conducted a multi-country campaign testing distribution scalability, which revealed the following marketing costs:<br>■ Nepal: Reached 130,000 learners over 4 months, with estimated marketing cost of USD 0.08 / learner.<br>■ India: Reached 100,000 learners over 2 years at a marketing cost of USD 0.04 / learner.<br>■ Kenya: Reached 25,000 learners over 2 months at a marketing cost of USD 0.42 / learner.<br>Note that these cost estimates focus on marketing and do not include the costs for developing, maintaining, updating, or localising apps. |
| *Sustainability* | N/A |
| *Sources and further information* | Curious Learning[35]<br><br>Curious Learning and partners offerings in various languages[36]<br><br>Curious Learning timeline[37]<br><br>Curious Learning's localization guide[38]<br><br>Ubongo[39]<br><br>Global Digital Library[40]<br><br>AppMap Chart: Skills needed to become a proficient reader[41] |

[35] https://www.curiouslearning.org/ Retrieved 30 August 2023
[36] https://docs.google.com/spreadsheets/d/1E19XHn0TRXIGS_sfYp3_nj32w1vMKVVpvIrrTYCx6WE/edit#gid=0 Retrieved 30 August 2023
[37] https://www.curiouslearning.org/timeline Retrieved 30 August 2023
[38]https://docs.google.com/document/d/e/2PACX-1vSZ7fc_Rcz24PGYaaRiy3_UUj_XZGl_jWs931RiGkcI2ft4DrN9PMb28jbndzisWccg3h5W_ynyxVU5/pub Retrieved 30 August 2023
[39] https://toolkits.ubongo.org/ Retrieved 30 August 2023
[40] https://digitallibrary.io/ Retrieved 30 August 2023
[41] https://docs.google.com/document/d/1zeI1gdb9Z0D3YPukGCKpKhYYrC84jbNVKc2Rvs3eAjQ/edit#heading=h.uewz92fnade2 Retrieved 30 August 2023

# 4. Additional resources

The following are additional resources to consider to better inform the use of EdTech to support out-of-school Children and Adolescents. This list of additional resources is made up of innovative and informative use cases both within Malawi and around the world. They were not included as primary examples because they did not fully meet the inclusion criteria. However, they still possess the potential to share important lessons and insights.

## 4.1. Other interventions to consider in Malawi

The World Bank's Skills for a Vibrant Economy (SAVE) Project, Malawi (↑World Bank, 2021), aims to provide skills development related to labour force participation, digital skills, and more in tertiary education and TVET settings. It gives special attention to women's empowerment and skills development. Details of this World Bank project can be found here.[42]

The Social Cash Transfer Programme (SCTP), Malawi (↑Government of Malawi & UNICEF, 2020) provides non-conditional cash transfers to ultra poor Malawian families, aiming to provide social protection and poverty reduction. In the 2022–2027 strategic plan (↑Government of Malawi & UNICEF, 2020), the programme's main goals include improving students' school enrolment, attendance, progression, and retention. Additionally, the programme aims to finance a standard package for each participating family that includes information and awareness raising on health, nutrition, and education. The programme utilises digital payment and data capture. This project was not included as an example intervention because it does not use technology for educational purposes.

The Digi Savvy program, Malawi,[43] aims to provide digital skills training for youth in Malawi. The programme includes foundational digital and entrepreneurial skills. The project was launched by the Ntha Foundation[44] and sits under the broader Digital Malawi project funded by the World Bank.

AGCOM (Agricultural Commercialization) project, Malawi,[45] aims to strengthen the inclusivity of women and youth in agriculture by supporting agriculture commercialisation with a Productive Alliance model. The project includes a 'women-only group' to support women in agriculture. The project wasn't

[42] https://projects.worldbank.org/en/projects-operations/project-detail/P172627 Retrieved 30 August 2023
[43] https://nthafoundation.org/cohort-3-completion/ Retrieved 30 August 2023
[44] https://nthafoundation.org/ Retrieved 30 August 2023
[45] https://blogs.worldbank.org/youth-transforming-africa/achieving-gender-and-youth-inclusivity-malawi-through-productive Retrieved 30 August 2023

included as an example intervention because of limited information on how technology was used for educational purposes in the intervention.

## 4.2. Global interventions for consideration

The Re:Coded[46] programme prepares conflict-affected youth to enter the digital economy as software developers and tech leaders in their communities. Re:Coded has trained more than 450 children and youth how to code since it was founded in May 2017. The company currently operates in Iraq, Turkey, and Yemen. Courses are targeted at particular communities and eligibility criteria vary by cohort. Prior experience of coding is considered an asset but is not required. This model could be used to inform ways to support school dropouts in developing skills and entering the workforce.

Aliim[47] is a non-profit organisation aiming to leverage technology and mentors to provide refugees and marginalised youth access to safe, quality, and relevant education. Aliim focuses on the 400,000 school-aged Syrian children who are out of school. It uses mobile learning via smartphones to address this crisis, aiming to improve equity and learning and minimise costs. Aliim has developed the first curriculum framework for mobile learning in conflict-affected contexts through this approach. Given the displaced nature of learners in conflict-affected contexts, the programme could provide lessons for supporting out-of-school children through mobile learning.

Enuma:[48] With offices in the United States and Korea, Enuma offers a product called Kitkit School to build literacy and numeracy skills through a game-based learning app and learning tools. Designed for hard-to-reach communities, Kitkit School has been implemented in Rwanda, Bangladesh, Tanzania, and Kenya. In 2018, the product was tested with Grade 4 pupils in Rwanda, who demonstrated positive learning outcomes after four months of participation. Enuma School can be accessed on a mobile phone or a tablet device. Once installed, the application does not require internet access to function. Although designed to target in-school youth, the programme's focus on hard-to-reach communities presents a replicable model for out-of-school children who primarily learn from home.

Can't Wait to Learn,[49] developed by War Child,[50] provides a solution to close the education gap for millions of children in formal and out-of-school settings. The tablet-based programme offers children the opportunity to (continue to) learn

[46] https://www.re-coded.com/ Retrieved 30 August 2023
[47] http://aliim.org/ Retrieved 30 August 2023
[48] https://enuma.com/ Retrieved 30 August 2023
[49] https://www.warchildholland.org/intervention-cwtl/ Retrieved 30 August 2023

[50] https://www.warchildholland.org/ Retrieved 30 August 2023

by playing educational games on tablet devices, contributing to improved psychosocial well-being. Content is made available offline to ensure greater reach and impact. The programme is currently active in Sudan, Uganda, Lebanon, Jordan, and Chad. Despite not explicitly focusing on FLN, the modality used by Can't Wait to Learn presents opportunities for replication and adaptation for reaching out-of-school children.

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