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EdTech in Education & Adolescent Empowerment Programming

Thematic Brief

care
75 YEARS

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Background

The use of technology for education, or EdTech,[1] has transformed how teachers teach as well as how students learn. EdTech interventions are most effective when they complement, not replace, the work of teachers, allowing for the scaling up of quality instruction, expanding opportunities for learners (and teachers) to regularly practice new skills and to enhance knowledge, and increasing student engagement.[2] This is essential to support learning, to increase access to key services, and to engage in employment opportunities reliant on digital skills, especially among children and adolescents who have been marginalized from quality equitable and inclusive education and socioeconomic opportunities.

Unfortunately, a recent UNICEF study found that a majority of youth in low- and middle-income countries do not have Internet access (Sustainable Development Goal (SDG 17.8.1), have limited or no digital literacy skills (SDG 4.4.1), and do not own a mobile phone (SDG 5.b.1), with adolescent girls and young women, as well as students from the poorest countries, disproportionately affected.[3] With respect to digital device access and use, adolescent girls and young women encounter barriers to owning, using, and being enabled to develop skills with equal opportunities as their adolescent boy and young male counterparts.[4][5][6]

The potential of EdTech can be captured in the following dimensions of learning[7]:

- **Access:** EdTech is expected to broaden **access to learning opportunities** during crises, including most recently the COVID-19 global pandemic, in remote areas, and among marginalized groups, including migrants, those who are displaced, out-of school children, children with disabilities, and refugee children.

- **Quality:** EdTech can **improve the quality of learning, materials, and resources** to help young people to develop the knowledge and critical skills to engage meaningfully in community and economic life, to become agents of change **and** to **mitigate and adapt to challenges posed by**

climate change and other destabilizing factors.

- **Equality:** EdTech is believed to be able to **help equalize learning opportunities for girls and boys** in favor of economically, geographically, demographically, or socially disadvantaged populations.

- **Information:** EdTech enables students to have **access to trusted content, including on sensitive subjects** such as sexual and reproductive health, child protection and gender equity.

- **Confidence**: Increased access to technology, new resources, and heightened learning outcomes can **increase learner confidence in seeking learning support and in the use of new technologies**.

As UNESCO puts it, *"Under the right conditions*, it is believed that ICT [EdTech] can have a monumental impact on the expansion of learning opportunities for greater and more diverse populations, beyond cultural barriers and outside the confines of teaching institutions or geographical boundaries."*[8] However, in many places, grandiose, poor, and untested EdTech diminishes its potential impact. Additionally, the impact of mobile learning and online teacher training on learning outcomes remains limited. Some of the reasons for the limited impact include not knowing how to use the technology strategically to support teaching and learning; allowing the device to drive instruction; and the lack of planning around the choices and uses of technology and the evaluation of its effectiveness.[9]

Overview of CARE's Approach to EdTech

Committed to maximizing impact, CARE seeks to avoid these pitfalls and to bridge the gender digital skills divide by using EdTech as part of an integrated approach to education programming, combined with leadership skills and other life skills development; age-appropriate sexual and reproductive health (ASRH); and economic empowerment activities for

> *CARE integrates EdTech into its education service systems strengthening work, including relevant tools and skills to enhance continuous professional development for teachers and teacher educators.*

adolescents and their families. This integrated approach seeks to improve not only education outcomes but also adolescent capacity to engage in decision-making processes and to experience positive transitions. CARE integrates EdTech into its education service systems strengthening work, including relevant tools and skills to enhance continuous professional development for teachers and teacher educators. To ensure a positive impact from the inclusion of EdTech, CARE seeks to understand *when, if, and under what conditions educational technology can be used to enhance education access, the quality of teaching and learning, gender equality, and social inclusion.*

CARE uses a set of **core objectives** to inform the development of EdTech in CARE. These include:

- *Improve quality of delivery*. E-tools allow for timely support to teachers and teacher educators, including remote coaching and access to e-learning materials that support curriculum delivery and peer learning.

- *Increase access to information for adolescents.* SMS services and e-learning platforms allow

students to access content on sensitive and taboo subjects such as SRH and gender-based violence.

- **Increase exposure time to learning.** Electronic content allows students to practice literacy and numeracy skills as well as skills needed in other subject areas through self-directed or collaborative activities at school and/ or home, depending on equitable access, affordability, and connectivity availability. Students can learn at their own pace with e-learning tools that can be adapted to their needs, abilities, interests, and context.

- **Increase connections and interactions.** Virtual networks allow for teacher-to-teacher guidance and sharing of best practices, especially in rural areas where teachers are unable to connect with peers regularly due to distance or to receive regular feedback from academic supervisors from district or regional education offices. Virtual networks also allow for co-learning and collaboration between in-school students and out-of-school adolescents. During the COVID-19 pandemic, students, teachers, parents and caregivers with access to cellphones with texting capability and to social media platforms were able to stay connected to provide/receive academic and psychosocial support.

- **Address gender and social norms preventing equal access to EdTech**. We work with teachers, parents, and caregivers to shift existing norms and beliefs about girls' access to devices and ability to use them in school and at home. This includes ensuring that girls are allocated equal time to use devices at home.

- **Increase accountability and more inclusive governance and reform in facilitating learning.** CARE uses real time e-platforms and tools as a means of empowering teachers, communities, and education officials to systematically track learning, attendance, and retention, increasing accountability in achieving improved education outcomes.

- **Safeguarding.** Children, teachers, parents, and caregivers are taught how to assess risks in virtual environments; prevent exploitation and abuse; and seek assistance when necessary. This includes how to search for, vet, and share information and to engage online safely and responsibly as well as how to protect one's privacy and identity online.

- **Increase relevance and localization.** The use of some electronic content can allow for quick delivery of content in local languages, adapted to local needs and (where possible) produced by teachers and students themselves.

- **Replicable and sustainable models**. Using locally available technology, adapting relevant open educational resources (OER) that align with national curricula and make content available in local languages,[10] and building partnerships with local providers to develop and disseminate
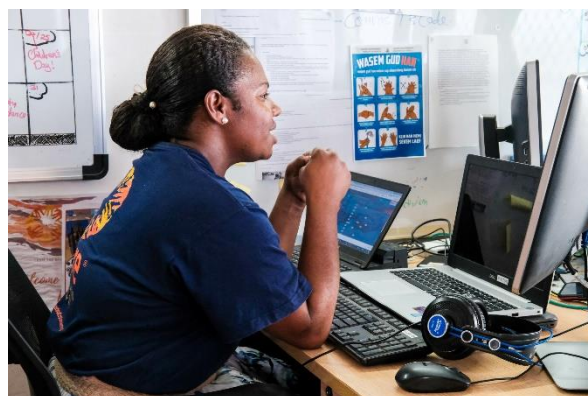
content more widely and/or quickly than traditional methods always allow. A lot of projects that integrate EdTech are pilots that often fail to move into scalable and sustainable programs. This may be in part the result of the fact that they are often designed thousands of miles away from where the EdTech tools will actually be used and so fail to meet user needs.[11] They also may be designed without considering in advance the funding model for scale-up (e.g., cost per user, social business model, revenue generation options, etc.[12]).

CARE uses two frameworks to help guide teachers and teacher educators to think through when, how, and if to integrate EdTech into lessons and what specific skills and knowledge teachers need to be able to effectively integrate EdTech to support improvements in teaching and learning. The first framework is called SAMR (**S**ubstitution, **A**ugmentation, **M**odification, and **R**edefinition). As teachers learn more about EdTech integration, they are able to decide what EdTech tools to use, whether using them enhances learning, and with increased agility, how EdTech's strategic use can promote the development of higher-level skills (through transforming learning tasks). The more agile the teacher, the higher up the EdTech agility continuum (ladder) teachers can go.
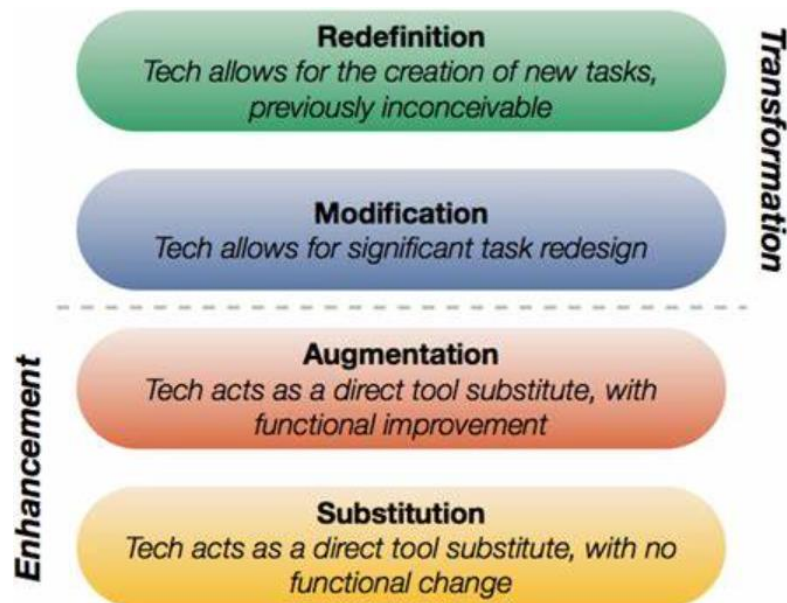

In the graphic, the dotted line between the first two steps along the ladder in the SAMR framework serves as a threshold where a teacher would be shifting from using technology to enhance learning to using it to transform learning.[13] When teachers begin exploring how to make use of EdTech effectively, they may initially focus on the first two levels of the framework, replacing traditional materials with digital ones, converting lesson plans and worksheets into printable formats and posting them online, or using videos to record and make lessons available for asynchronous learning. Over time and with relevant professional development support and practice, teachers will be able to move to higher levels of meaningful EdTech integration, enabling their students to become creators and publishers of their own work using multiple platforms, engaging with experts in a variety of fields, and participating in digital forums with peers from across the globe.

The second framework CARE uses to guide EdTech integration is called TPACK (**T**echnological, **P**edagogical, and **C**ontent **K**nowledge). This framework helps teachers and teacher educators to look

more closely at what teachers need to know, what skills they need to teach better, and what they need to know about technology to teach more effectively to promote student learning.[14] The TPACK framework provides guidance around subject area content knowledge, pedagogical knowledge, and technological pedagogical knowledge needed by teachers to be able to meaningfully integrate EdTech into their lessons.[15]

Both frameworks are introduced by project technical staff into CARE's education programming that integrates EdTech to strengthen their capacity to guide implementing partners, including relevant education ministry staff, to better understand what gap/s the integration of specific EdTech tools would be selected to fill, what skills they, teachers, and students need to use EdTech, and what EdTech tools and strategies are most effective to achieve relevant project outcomes and are sustainable post-project.
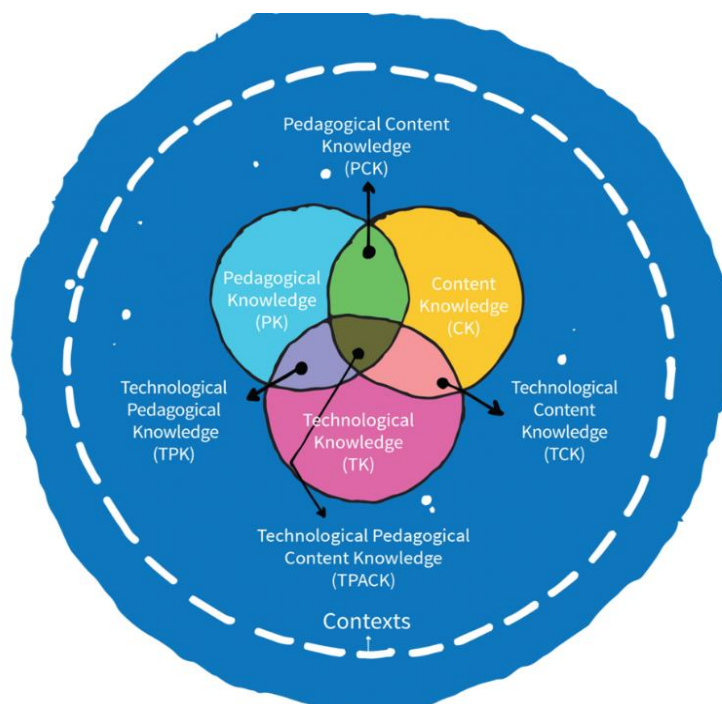
By purposefully and thoughtfully designing education programs that incorporate EdTech, we seek to avoid repeating historical efforts that have often ignored context as well as safety, equity, and inclusion considerations, and instead focus on meaningful, equitable, inclusive, and strategic EdTech integration.

CARE's Approach to User-Driven EdTech

CARE's approach to EdTech is grounded in principles of "human-centered design" (sometimes called "design thinking"). One of the key strengths of human-centered design is the active involvement of 'end-users' who have knowledge of the context in which the system will be used. This means a clear commitment to working with adolescents to understand and design for their needs in education, accessing information, and navigating the changing world around them. Key parts of our process include:

- **Inspiration** where the focus will be on understanding the adolescents and girls with whom we will work. This is done through the combination of observations, consultations with adolescents, and evidence from in-depth situational analyses and in some cases risk assessments conducted in each context.

- **Ideation.** Making sense of, or bringing ideas to, understanding the perspectives heard from adolescents and others and to test and refine the identification of opportunities.

- **Prototyping**. Developing a "low-scaled" version of an EdTech service or tool that allows for

early testing and can quickly show what does or does not work. Given the potential for technology costs in funding, staff time, and social capital with partners, counterparts, or communities to spiral exorbitantly, this prototype is critical.

- **Iterating and failing fast and early**. Taking risks early and quickly can produce rapid learning. The key is to iterate and make changes in ways that are documented, thought through, and assessed to go to scale in the project with an EdTech tool that holds the highest likelihood of success.

- **Implementation** is the phase where the EdTech solution will be operationalized, delivered to adolescents and others, and leveraged to maximize its impact for the goal.

- **Establishing and listening to intentional feedback loops.** Feedback loops are essential to capture, maintain, and adapt the use of evidence to improve programming in present projects and future ones.[16] User engagement and ownership are essential for the successful use of technology since user inputs can help to build better digital tools to address contextual challenges and to respond to recipient expectations. This includes creating spaces for some user sub-groups opting out of using technology.[17]

- **Rigorously tracking results.** Tracking if and how content/systems are being used and how well they respond, or not, to student and teacher needs.

Using EdTech to Support Data-Driven Programming

In addition to using technology for education programming, our monitoring systems use mobile data collection to obtain real-time information on progress, to identify emerging patterns, and to quickly adjust our approaches so they match the needs and situations observed on the ground. Mobile data collection reduces the likelihood of errors in data entry and analysis; allows effective, remote monitoring in all project areas, especially those that are conflict-affected; and enhances accountability. CARE designs programs so that their impact can be continuously measured while ensuring that data is collected and used responsibly and shared using formats that are easy to interpret and to act upon.[18]

How We Are Doing It

CARE is committed to responsible, responsive, and cutting-edge education programming that improves learning outcomes and equips students with knowledge and skills for empowerment, as well as with supportive relations and systems to apply those skills. Within our education and adolescent empowerment programming, there are several ways in which we incorporate EdTech to boost learning and build conditions for learner-focused empowerment.

We connect adolescents with knowledgeable adult experts on a host of issues that impact them as well as with their peers for shared learning and support. These kinds of virtual opportunities are vital in countries where youth-friendly, age-appropriate, comprehensive, and reliable information is sorely lacking and where the ability to engage with others with different viewpoints/life trajectories can offer hope and motivation.

EdTech to build critical skills: Student-led content creation

In **Cambodia**, we have built adolescents' digital literacy skills focused on content creation, coding, and critical thinking skills, as well as increasing student access to information, in particular for girls from minority groups. A total of 2,889 students (52% from minority groups, 52% girls) accessed computer labs and tablets, developed student-led magazines, and used EdTech in science and mathematics classes. CARE and Team4Tech trained EdTech master trainers to increase the capa city of the education system to support teachers working in the remote Northeast provinces to continue to use EdTech in classrooms. A quasi-experimental evaluation showed that students in EdTech intervention schools had significantly higher learning scores in Grade 7 and Grade 8 exams vis à vis those from comparison schools.[19]

In **Ecuador**, at-risk adolescents and youth engaging in an accelerated education program under the *Education Free from Violence* project participated in a series of workshops to plan and implement an edu-campaign (#YoTeCreoYTeProtejo) to raise awareness about GBV and other protection issues affecting them and their communities. The edu-campaign included the design, testing, and roll out of animated videos and interactive games along with the development of social media posts tailored for adolescents, youth, and adults. Adolescents were able to develop their communication, leadership, and digital skills while participating in these workshops and to enhance their knowledge of sexual violence and other forms of abuse. The edu-campaign was launched through four school fairs in Guayaquil. Adolescents participating in the project helped to facilitate the fairs. The edu-campaign reached 59,639 direct participants. The communication products (animated video and podcast), information on interactive game methodology, and social media content have been made available to the public through https://educacionlibredeviolencia.org/yotecreoyteprotejo/ to support replication and adaptation by schools and social organizations supporting the rights of and creating safe spaces for children and adolescents.[20]

EdTech to broaden horizons in rural areas

CARE partners with communities in conflict-affected rural areas of **Afghanistan** to provide home-based classes, ensuring a safe learning environment for adolescent girls. Computer labs implemented in community-based classes increased girls' exposure to science, math and reading content, boosting access to information in a context where learning resources are extremely scarce. CARE implemented lower secondary community education classes across Paktya, Parwan, Kapisa, Ghazni and Khost provinces, supporting 7,521 adolescent girls to complete their education. A quasi-experimental evaluation found that the average proportion of students proficient in advanced numeracy skills increased from 5% to 32% within a 12-month period, compared to 0% among students from the same grades in comparison (public) schools.[21]

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In **India**, CARE's *Innovators' Lab* project built digital and computer literacy skills in adolescent girls and boys from marginalized communities in Bengaluru. The project engaged 1,000 students (50% girls) between 11-14 years of age and local youth between 19 to 28 years of age to serve as community

facilitators in nine villages in the state. Students learned how to use various digital tools and to apply digital skills for real world purposes (e.g., to locate the nearest health care facilities, to apply for scholarships, to research possible solutions for problems affecting their local communities, etc.). Students learned how to use digital tools safely and to engage online responsibly for self-expression and for vocalizing their opinions. Additionally, students developed computational thinking skills such as mathematical and scientific reasoning, pattern identification, and data analysis with community facilitators using a blended learning approach and hands-on activities to promote higher level thinking. An impact study conducted in 2022 showed that students who received mentoring in digital and computer literacy skills under the project had significantly improved self-confidence and self-efficacy in using the Internet and digital applications safely. Students were also able to enhance their conceptual knowledge and skills related to science, technology, engineering, and mathematics (STEM) subjects in grades 6-8.[22]

Teaching Disaster Risk Reduction (DRR) and Sexual and Reproductive Health and Rights (SRHR)
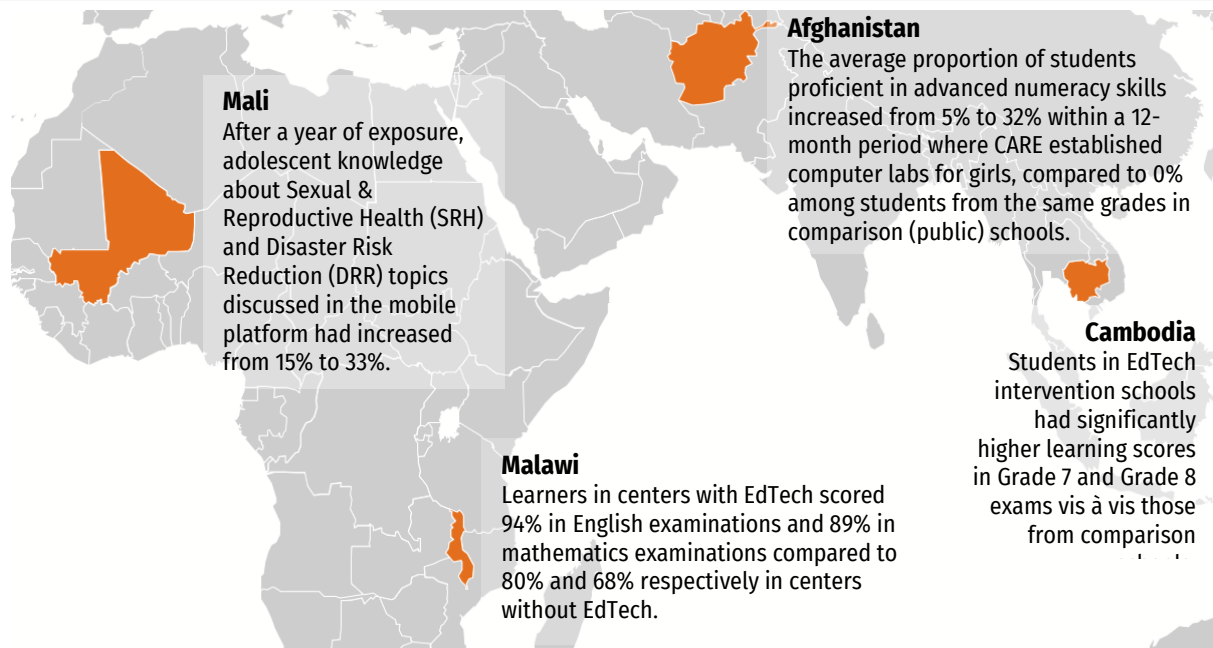CARE's *Education for Change* project used mobile phones to increase access to information on SRHR and DRR in the conflict-affected Mopti region of **Mali**. 25,031 adolescents (56% girls) participating in Friendship Circles held regular dialogues on issues affecting their education and well-being and used the mobile platform to send questions and to receive responses via SMS in a safe and confidential manner.[23] Teachers trained as focal points on SRH and DRR respond ed to the questions sent by adolescents, with support from project experts. After a year of exposure, adolescent knowledge about SRH and DRR topics discussed in the mobile platform had increased from 15% to 33%.[24] M-platform messaging was updated to include information on preventive measures, positive hygiene, and safety risks related to COVID-19.

In **Rwanda**, CARE partnered with Girl Effect Rwanda (GER) to promote gender equity and girls' empowerment through a youth-friendly multi-media platform (*Ni Nyampinga),* reaching 60% of Rwanda's population through its quarterly magazine, bi-weekly radio shows, *mobisite*, and other platforms. The partnership facilitated the dissemination of tailored content for different age groups on sexual and reproductive health, harmful gender and social norms, and child rights while showcasing girls' voices and success stories. In response to the recent global pandemic, CARE and

GER collaborated to produce COVID-19 related content (in print and digital formats) targeting young people and their caregivers across the country. This included messaging encouraging young people to stay focused on learning during lockdown, to be aware of learning platforms and resources available, and how to manage stress, social isolation, and other challenges emerging during the pandemic. Caregivers were also able to receive vital information on how they could support their children to continue learning while at home.[25]

Key Results from CARE's EdTech Work

Mali
After a year of exposure, adolescent knowledge about Sexual & Reproductive Health (SRH) and Disaster Risk Reduction (DRR) topics discussed in the mobile platform had increased from 15% to 33%.

Afghanistan
The average proportion of students proficient in advanced numeracy skills increased from 5% to 32% within a 12-month period where CARE established computer labs for girls, compared to 0% among students from the same grades in comparison (public) schools.

Cambodia
Students in EdTech intervention schools had significantly higher learning scores in Grade 7 and Grade 8 exams vis à vis those from comparison

Malawi
Learners in centers with EdTech scored 94% in English examinations and 89% in mathematics examinations compared to 80% and 68% respectively in centers without EdTech.

Mass access to local language content

In **Timor-Leste**, CARE's *Lafaek* project is a social enterprise supporting the Ministry of Education to develop supplementary learning materials for primary students and teachers as well as resources for parents. The content is entirely produced by local writers and artists in the main language of the country, Tetum. All content is publicly available through print materials and online via the project's Facebook page, which has over 150,000 followers—making it among the most accessed websites in Timor-Leste. CARE's content for teachers—focusing on subject area learning and pedagogy—is also disseminated through the Ministry of Education's online professional development system, accessible through tablets distributed to all primary teachers.

Mobile English learning in conflict zones

In **Somalia**, CARE worked with Cell-Ed to develop a mobile learning platform to boost English learning outcomes among upper primary students in 199 schools in conflict-affected rural and remote areas. The mobile platform was accessible through feature phones using a call-in option or as a smartphone app. The activity was rolled out in partnership with local telecom operator Telesom. In response to the COVID-19 pandemic, professional development for teachers and academic coaches was provided virtually through teleconferencing tools, social media platforms, and messaging apps.

Supporting government systems to mainstream EdTech

In **Egypt,** CARE partnered with Microsoft Philanthropies, the Ministry of Youth and Sports, and the Ministry of Communications and Information Technology on a national initiative to empower 600,000 underserved youth by helping them to develop digital literacy and employability skills and by providing them with job placement support. CARE enhanced the capacity of government trainers in essential content area knowledge and skills to support young people and launched an online portal for job and leadership skills, training over 30,000 young people, developing 35 courses in Arabic accessible through an online portal, and partnering with 200 companies for demand-driven

training.[26]

In **India**, CARE is providing EdTech training for formal school teachers through Block Resource Centers and building virtual teacher networks to share good practices and crowdsource solutions for issues they face in classroom practice. In government-operated accelerated education centers, CARE is supporting former out-of-school girls from marginalized castes and tribal backgrounds to use tablets with e-content to practice basic reading and numeracy and learn computer and digital literacy skills. In response to the COVID-19 pandemic, teacher professional development has been provided virtually using teleconferencing tools, social media platforms (Facebook/YouTube/blogs), and mobile and OER applications such as Tangerine and WhatsApp.

Sharing contextualized OER teacher training content through government e-platform

The *India Partnership for Early Learning* initiative has supported the state government of Uttar Pradesh in delivering the online foundational literacy and numeracy teacher training program (Nishta 3.0), for early childhood and care education (ECCE) through grade 5 teachers. Self-paced course modules to support teachers to develop specific subject area knowledge and pedagogical competencies have been uploaded onto the Ministry of Education's Digital Infrastructure for Knowledge Sharing (DIKSHA), a national platform for school education and the country's largest OER repository. Additionally, short videos clarifying the academic strategy of the National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN) Bharat Mission,[27] designed by the NIPUN Bharat Coalition team, have been uploaded onto DIKSHA.[28]

Building connections and learning

In **Kenya**, CARE seeks to bridge the digital gap faced by poor adolescents, in particular girls, empowering them to benefit from the e-resources increasingly available in East Africa's digital hub. Our baseline data indicated that 77% of the adolescent boys were able to use mobile phones, compared to only 69% of the girls.[29] In key pilot sites in both urban and rural settings, CARE worked to develop an online portal for disseminating e-content so that learners could complement their in-person sessions with additional electronic resources. The online materials are also open source (OER) and available for others to use. As a result, in-school and out-of-school adolescents in a poor urban area (Mukuru) and a remote rural location (Kajiado) are learning basic computer literacy skills and having increased access to information through local EdTech hubs.

EdTech in accelerated education

In **Malawi**, CARE worked with Team4Tech to set up computer labs and to provide tablets for accelerated education centers in Kasungu and Salima. The initiative allowed older adolescents, including married girls and teenage mothers, to practice literacy and numeracy skills using tablets with math and English apps and to develop basic computer and digital literacy skills (e.g., turning tablets on/off, troubleshooting challenges with opening/closing apps, navigating app content and activities, etc.). The results indicated that math and English app use led to stronger student engagement and improvements in learning outcomes. Learners in centers with EdTech scored 94% in English examinations and 89% in mathematics examinations compared to 80% and 68% respectively in centers without EdTech.[30] Additionally, in several countries where CARE's accelerated education model has been adapted for local contexts and is being implemented, including in Malawi, India, and Somalia, teachers and facilitators are connected through learning circles and virtual

networks to share best practices and to crowdsource solutions to emerging issues.[31] Having access to virtual communities of practice during crises, including the prolonged COVID-19 pandemic, enabled teachers and teacher educators to promote remote and home-based learning and to receive ongoing academic and psychosocial support.

Building literacy skills through reading application

In **Egypt and Sierra Leone**, CARE partnered with Worldreader to provide digital tools along with teacher and caregiver support to increase children's access to engaging, leveled reading materials to bolster literacy outcomes and a love of reading. In Egypt a reading competition in three governorates in Upper Egypt (Al-Minya, Asyut, and Beni Suef) helped to enhance primary students' literacy skills. Six hundred families with access to smartphones participated in the digital reading competition, accessing 190 books in Arabic that focused on themes relevant to young learners ages 6-12 during school closures and the midterm break. Students, parents, and caregivers accessed the digital reading collection using Worldreader's BookSmart application and received recommended books of the week through in-app push notifications and WhatsApp messages on Fridays from volunteers supporting the project. Parents and caregivers also received guidance on activities to do with their children via WhatsApp. Over 700 readers participated in the digital reading competition, and girls accounted for 63% of participants. Student participants completed an average of 10 books per household over an eight-week period, exceeding the targeted eight books, and spent an average of 23 minutes per day on reading. In Sierra Leone, CARE launched the Read with Us pilot with Worldreader and Catholic Relief Services in the remote districts of Falaba and Koinadugu in the northeast where pre-COVID-19 pandemic, primary school students were reading below grade level. The pilot integrated digital tools in 12 community schools that had already established reading clubs. These included 45 tablets with the BookSmart app pre-installed and preloaded with 291 age-appropriate digital books, and parents, caregivers, and teachers received guidance via WhatsApp on reading activities to enhance five core reading and socioemotional skills. Wifi modems and solar power banks were also distributed to support tablet use. Three-hundred and ninety students participated in the digital reading competition. Students spent an average of between 39 and 145 minutes per day on reading, and over 80% of students self-reported that the Read with Us program had greatly enhanced their school performance.[32]

Enhancing accountability

In **Haiti**, CARE's *Haiti Gagne* project implemented a biometric system to track student and teacher attendance in 53 schools in the Nord and Sud-Est departments. The system enabled local communities and education officials to track trends in attendance and to take action to increase student exposure to learning activities.

In **Somalia**, in collaboration with the Federal and State-level Ministries of Education, CARE's *Adolescent Girls' Education in Somalia* project adopted an out-of-school children tracking system to track, and register accelerated basic education (ABE) students who have transitioned into formal education. The data from the tracking system, which is linked to the national EMIS, is being used to assess the effectiveness of the national ABE programme and to verify the transition rate of ABE learners into the formal education. Improving the effectiveness of data collection systems as well as the quality of data on marginalized students will enable government entities to better plan how best to address the needs of all learners and to assess disparities in education outcomes among children from vulnerable sub-groups.

Under the USAID-funded *India Partnership for Early Learning (IPEL)*, CARE has helped to enhance the capacity of education officials at the state, district, block, and cluster levels to utilize education data to address education provision gaps in foundational learning (FL) programming. This has been achieved through the creation of a comprehensive FL reporting system. In early 2023 approval was received from the state government in Bihar to develop the system. In Jharkhand, the first version of the system (with seven Key Performance Indicators) was launched. In Uttar Pradesh, the project focused on refining the first version and institutionalizing reliable data collection practices in the system.

Addressing learning loss during global pandemic

In **Cambodia**, following the onset of COVID-19, to support the needs of ethnic minority lower secondary learners in remote Northeast provinces, CARE's *Know&Grow* project utilized a blended approach to support teachers to utilize an e-platform set up by the Ministry of Education, Youth, and Sport (MoEYS) and to access subject area teaching and learning materials uploaded onto the Ministry's website. Teacher-developed digital content and mini-lessons were made available through text messaging and social media platforms (YouTube, Facebook) for learners able to access these virtually without it being cost prohibitive. Learners without access to virtual resources received printed lessons (from teachers adhering to government safe distribution guidelines). Project staff and a mobile teachers cadre checked in with learners through home visits or virtually via pre-organized e-learning groups set up by teachers following MoEYS guidance and through the support of provincial education officers (POEs) and school directors. POEs provided trainings on computer and digital literacies to EdTech Core Teachers, Technical Grade Leaders, school directors (integrating MoEYS safe online communication guidelines).

Key Lessons and Considerations

Throughout the work CARE has led in meaningfully integrating EdTech into its interventions targeting in-school and out-of-school learners, a number of core lessons and considerations have arisen which inform how we approach technology integration into education and adolescent empowerment programming. These include:

- **Ensure EdTech fills a core gap**, rather than simply adding new 'flash' or substituting for a tool that may be more cost effective. What are the gaps to learning, access, engagement, etc. that we are aiming to address through EdTech integration, and how will we assess these through its integration?

- **Use existing and open tools.** When educators begin to consider using digital tools in their classrooms, they should be encouraged to ask the following questions: Can an already existing tool be used in a new way to help with the learning task? Will it take longer to find and learn how to use this new tool than to make do with the existing one, especially if the new tool will not be used often? What tutorials can I find or make for students to help them understand how to use

the tool? What additional training and support is needed to integrate this tool into my lessons to improve student learning and engagement?

- **Understand and design for gendered, geographic, disabilities-related, and other divides** which may be exacerbated by EdTech integration if not carefully considered. For example, CARE's work in Kenya showed that girls had less daily use of individual technology devices such as phones and computers than boys; the same held for rural populations in comparison to urban populations.[33]

- **Explore how EdTech can connect more broadly:** While mobile phones and tablets are designed to be used as learning devices, most individuals' (learners', teachers', parents', etc.) first interest is on their function as a resource for communication and vital information, followed by mobile banking. How can we build upon current EdTech uses by our target populations? What additional skills need to be developed?

- **Budget and plan for technology to malfunction, break, or get stolen.** In urban centers, some adolescents are able to access mobile devices only if they steal them.[34] While the locations for use of tablets and computers are designed to be secure and waterproof, nature, extreme weather events, and human error often lead to malfunctioning devices. Community members need to be trained to provide routine maintenance, and budgets need to consider the costs of maintenance and system/software updates. Additionally, if power supplies are provided to a location, or solar panels installed, agreements need to be made in advance with community leaders regarding their use outside school hours to prevent disruptions in learning time.

- **Collaborate with stakeholders to define what sustainability and long-term ownership look like**. Develop a plan on how exactly the project will go about achieving sustainability of the EdTech tools/approaches once the project ends.

- **Support teachers and facilitators:** While many adult learners such as teachers/facilitators may indicate high levels of confidence in using technology and adapting to it, they are often not comfortable admitting what they don't know. They need safe spaces and regular practice to learn computer and digital literacy skills, to make mistakes and troubleshoot challenges, and to explore how to integrate these skills into their daily lives and work. Refresher training and regular practice sessions should be budgeted for and planned for safe and regular practice and exploration, grounded in adult learning principles. This also includes training and ongoing support for teachers/facilitators, teacher educators, and other education staff who access, use, and analyze information from data systems related to students' profiles and academic performance.

- The use of phones and tablets to collect data regularly greatly expands and expedites the speed and accuracy with which data can be collected, analyzed, and responded to. **Getting the process and system correct from the start** is key to ensuring the back-end results are of quality. Time and quality measures skipped here will likely result in poorer results than paper and pencil methods.

- **The use of EdTech is fun!** For children and adolescents, they are likely to pick up EdTech tools

and to learn relevant skills more quickly than adults. Adult uptake time to learn shouldn't inhibit the progress of learners. They need time to experiment in a safe way, to learn how to engage with different tools responsibly, to have unstructured time to explore, to play age-appropriate games, and to be kids.

Key Contacts:

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