KEEPING STUDENTS WITHOUT INTERNET ACCESS LEARNING DURING COVID-19 SCHOOL CLOSURES

Case Study Report

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DISCLAIMER

FOREWORD

This case study could have been a long and sad story about calamity, and how calamity hits the most marginalised the hardest. But it is not! This is encouraging documentation of how innovation and ingenuity on the part of six EAC partners came together in a global crisis and made a difference in the lives of some of the hardest to reach children and their families in the world.

For much of the pandemic, the focus has been on how to use technology to compensate for lost learning time in schools. The term "technology" was generally understood to mean the internet and the many devices that take advantage of it. The pandemic underscored clearly the prevalence of disparity, particularly in relation to internet access. This finding was no surprise to EAC, its partners, and many others working in development. For this group there was a choice: despair at the lack of internet access or find other solutions. EAC and its partners, like many others, chose the latter.

This case study shows the importance of meeting learners where they are, and finding modalities that can be easily operationalised with modest means in resource-poor environments. The study points to the significance of seeking local solutions and using them creatively, and to the added value of combining approaches for extended reach. It also demonstrates the need for all educations systems to increase the flexibility of their approaches to reach more children through a variety of modalities that can accommodate different learning styles.

A few of EAC's partners observed less learning loss than was originally expected in some situations. They also realised that addressing an abrupt challenge to the status quo in education provided additional benefits, including in relation to child protection activities and fostering necessary government and NGO linkages.

This work also raises some questions that we need to address. First, and foremost, is the dire lack of emergency preparedness in almost every education system and provider globally. To have nations across the world so unready for a crisis is unforgivable when we have so much sophistication and so many prediction and response resources available.

A second, more challenging, one centres on the fact that out of school children only became a global concern when the children from more privileged homes found their right to education curtailed. This "reduced" right is being, or will be, restored for those children. The question remains as to why the same level of concern and action is not given to the millions who were out of school before the pandemic and could remain so. This is the crisis for which we can be prepared and for which we have solutions.

Mary Joy Pigozzi, PhD

Executive Director
Educate A Child

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ACRONYMS

ASER	Annual Status of Education Report
BBC	British Broadcasting Corporation
CGDES	Comités de Gestion Décentralisée des Etablissement Scolaires
COVID-19	Coronavirus Disease 2019
EAC	Educate A Child
FG	Focus Group
FHI 360	Family Health International
GCN	Girl Child Network
J-PAL	The Abdul Latif Jameel Poverty Action Lab
MOE	Ministry of Education
OOSC	Out Of School Children
PASS+	Primary School Access through Speed Schools
PD	Project Document
PPS	Psychosocial support
PTA	Parent-teacher associations
RISE	Research on Improving Systems of Education
SD	Secure Digital [Memory Card]
SMS	Short Message Service
SSA/P	Passerelle Accelerated Schooling Strategy/Pathway
UNESCO	U.N. Educational, Scientific and Cultural Organization
UNHCR	U.N. High Commissioner for Refugees
UNICEF	U.N. Children's Fund
USAID	U.S. Agency for International Development
3IE	International Initiative for Impact Evaluation

INTRODUCTION

The COVID-19 pandemic shuttered schools around the world. By March 2021, one year into the pandemic, an estimated two-thirds of an academic year, on average, had been lost around the world as a result. New or ongoing school closures in some contexts threaten to further exacerbate these learning losses. While a variety of technology-based solutions for remote learning have been a common remedy to school closures, an estimated one-third of students lack the internet connectivity needed to access such options (UNESCO, 2021). Indeed, in a recent survey in Tanzania, less than one per cent of parents surveyed reported that children accessed education programmes on the internet, and just over five per cent reported engagement with radio and television programming (Cilliers & Oza, 2021). Ultimately, the pandemic has likely deepened the steep educational challenges confronting children who lack internet access around the world, many of who were already disproportionately disadvantaged, e.g., from poorer households or living in rural areas (UNICEF, 2020b).

Recognising the struggle to access home learning opportunities in some contexts, practitioners looked to low- and no-tech solutions to learning during school closures, as well as strategies to boost access to higher tech solutions in remote, low-resource contexts. To learn from the experiences of partner organisations implementing low- and no-tech approaches, Educate A Child (EAC), a programme of the Education Above All Foundation that focuses solely on out of school children (OOSC) at the primary level, commissioned FHI 360 to conduct a case study on six EAC-supported projects that served OOSC without internet access prior to and during the pandemic. Specifically, the case study examines the approaches used in these EAC programmes serving such vulnerable children. Specifically, the case study focused on collecting lessons learned on the following research questions:

1. What specific approaches did EAC partners use to facilitate access to learning opportunities for children without the internet during COVID-19 school closures?
2. What were the main educational impacts of these approaches? To what extent did these approaches mitigate learning loss for participating children?
3. What contextual factors stimulated or hindered EAC partners' efforts to implement these approaches?
4. How did partners perceive EAC's role in supporting the development of response strategies related to these approaches?

For **Research Question 1,** we find that partners implemented a variety of low- and no-tech approaches, including a range of self-learning approaches (e.g., home-learning materials and radio programming) and facilitator-guided approaches (e.g., small-group learning sessions). In some cases, this included a combination of self-learning and facilitator-guided approaches. Radio programming was used by partners where this technology was readily accessible even within many disadvantaged households and because of the potential for wide reach and government uptake of the approach. Other programmes differed by modality and included small-group learning camps, community learning sessions, conference calls with teachers, and home learning packages supported by a community facilitator. These programmes favoured individualised facilitator support, which was seen as particularly important to the vulnerable populations EAC targets, and also allowed partners to leverage existing project structures. Ultimately, partners recognised the long-term utility of multiple approaches for remediation, for in-school instructional support, as alternative learning opportunities for out of school children, or during future emergencies.

Under **Research Question 2** on educational impacts, low- or no-tech education solutions offered by partners meant that children were able to maintain some access to learning, even if it was for just a couple of hours a day, observing that children missed out on less learning than initially feared. They also noted some impressive results on national examinations in spite of the challenging circumstances—but they concluded that these approaches nevertheless remain less than ideal for learning. Notably, partners cited significant achievements improving parental engagement with children's learning, beyond what they felt would have been possible under normal school circumstances. They also recognised training benefits to teachers, especially from radio programming.

For **Research Question 3,** partners named a range of factors that positively or negatively influenced implementation. Concerning resource actors, partners mentioned that established partnerships/networks at the community level, relationships with experts and media houses before the pandemic, reputation and government buy-in were critical enablers. Low initial levels of interest and competing priorities on children's time challenged implementation; though partners implemented a number of interventions to address this, including dissemination of COVID-19 protection kits, coaching of parents to support their children's education, and targeting community "gatekeepers" for sensitisation, among others. In terms of content, aligning lessons with the government curriculum and ensuring lessons were short and flexibly scheduled helped, whereas, with limited access to technology and equipment, the need to rework curricula to teach to multi-grade audiences and to suit new modalities hindered content development. Finally, partners concluded that dissemination and sharing, project monitoring and learning, and strategies to reach marginalised learners were enabling, in spite of corresponding challenges that sometimes undermined achievements in these areas.

In response to **Research Question 4,** partners all expressed gratitude for the opportunity to partner with EAC and pointed to several areas that helped them effectively provide education opportunities during pandemic school closures. For example, partners appreciated the flexibility to adapt their interventions and especially the opportunities for "thinking outside the box." They also praised EAC's open-mindedness, supportive guidance, and flexibility with performance metrics. Partners valued—and seek more opportunities for—sharing with other partners. In terms of potential areas for improvements, some partners suggested more timely guidance and clearer budget guidance would have helped. Finally, they recommended that future projects focus on supporting emergency preparedness, especially for Ministries of Education and Education Departments.

This case study is structured as follows. First, we describe a typology of self-learning versus teacher-guided home learning approaches, mapping partner approaches against this framework to illustrate the diversity of approaches partners used. Then we explain the methods used in the case study before turning to key findings, exploring results for each research question in turn. Finally, we offer conclusions, which we situate within the broader, emerging literature on implementation experiences during COVID-19 school closures.

TYPOLOGY OF HOME LEARNING APPROACHES

Without access to the technologies—especially the internet and television—that dominated government pandemic responses, many vulnerable children were unable to access learning opportunities during school closures. Yet a variety of low- and no-"tech" alternatives exist for use and adaptation with marginalised children. Lennox, Reuge, and Benavides (2021) map these home learning approaches according to whether they are primarily structured as self-learning opportunities or teacher-guided ones. Common low- or no-tech self-learning options include the use of printed materials and books and radio. Teacher-guided strategies include home visits and phone calls, and SMS/WhatsApp messaging. We add small-group sessions to the typology since several EAC partners valued this format, recognising social benefits to bringing vulnerable children together while maintaining COVID-19 safety protocols.

As shown in Table 1, participating EAC partners used a variety of approaches. Nevertheless, it is important to note that these represent a subset of partner approaches. Partners were asked to prioritise detailed information on one or a couple of approaches for this case study, though most implemented a suite of approaches to address learning gaps during school closures. For example, several partners supported the development of television lessons during school closures. However, the technology and electricity requirements for television-based approaches prohibits their use for many EAC beneficiaries, who are typically deeply disadvantaged, and so they are not a focus of this case study.

We discuss partner approaches further in the ***Presentation of key findings*** section below. We also noted that most partner approaches included both self-learning and teacher-guided strategies, with printed home learning materials supplemented

by teacher or facilitator support in one project in Pakistan and another multi-country project in Niger, Mali, and Burkina Faso, for example. We have categorised based on how children spend the majority of their theoretical time on task with learning.

Table 1. Typology of low- and no-tech home learning approaches and examples (Lennox et al. (2021))

	SELF-LEARNING	TEACHER OR FACILITATOR-GUIDED
LOW/NO TECH, OFFLINE	**Printed Materials** (e.g., EAC programmes in Niger, Mali, Burkina Faso, and Pakistan)	**Home visits** (an element of the Niger, Mali, and Burkina Faso programmes)
	Radio lessons (e.g., EAC programmes in Nigeria, Pakistan)	**Small group learning sessions** (e.g., EAC programmes in India and Kenya)
	Television (technology unavailable to many EAC beneficiaries)	**Small group calls** (e.g., EAC programme in Bangladesh)

STUDY METHODS

This case study used an iterative qualitative approach, drawing insights from a desk review of EAC partner project documents and external literature, a qualitative online survey, interviews with key informants, and focus group discussions. Below, the process for each of these phases as well as analysis is described.

DESK REVIEW

Review of project documents

A desk review phase examined (a) EAC partner documents and (b) journal articles and grey literature on education approaches used to reach disadvantaged children during pandemic school closures.

The partner document review drew on partner semi-annual technical reports submitted to EAC and other materials that partners volunteered to share for this study during the survey, in interviews, or case study communications. As mentioned in Table 2 below, of the project resources shared, 25 were found to be relevant to this case study. These resources were treated as data and analysed as described in the ***Data analysis*** section below.

Table 2. Participation in research activities

Activity	Total completed	Total organisations represented in activity
Survey	6 surveys	5[1]
Key Informant interviews (with individual or small groups)	7 interviews (13 participants)	6
Focus group discussion	2 (4 participants)	4
Project documents	25	6

To identify external resources for a literature review, relevant organisations and journals were identified and their websites were searched for publications of interest. Appendix A lists the websites and details our criteria for selecting publications during this search. Any additional academic literature or journal articles that we came across through other means or that were shared were also included. This process yielded 26 resources, predominately grey literature sharing implementation experiences during the pandemic.

Relevant literature was skimmed for information related to case study themes, mainly: the types of education approaches being used with children without internet access during school closures, the impacts of these approaches, and the contextual factors that influenced their implementation. Insights from the literature review were integrated into the key findings highlighted in the ***Conclusion section*** in order to situate case study findings within the broader global literature on this topic.

ONLINE SURVEY

To supplement the desk review, perspectives from EAC partner organisations were gathered through a self-administered online survey. Respondents were invited to participate via email and responded to the survey, which was conducted through the KoBo Collect platform, at their convenience between July 2 and August 11, 2021.

The survey targeted one response per organisation, with the lead respondent encouraged to solicit inputs from colleagues as needed. In one case, an organisation chose to submit multiple responses, one per project approach. Three email reminders to participate were sent to encourage survey responses, with all but one organisation invited ultimately participating in the survey. This one organisation later shared on the topics covered in the survey in their interview.

As documented in Table 2, a total of 6 responses were received from 5 organisations. The survey collected qualitative information on the basic features of the educational approaches each partner implemented during pandemic school closures (supporting Research Question 1) and on experiences with the EAC partnership during their

[1] Some organizations submitted multiple responses representing different approaches.

COVID-19 response (supporting Research Question 4). The survey was offered in English and French. French responses were translated into English using DeepL translation software and then verified for accuracy by a French speaker.

KEY INFORMANT INTERVIEWS

Semi-structured interviews were conducted with key informants from EAC partner organisations to better understand their approaches (Research Question 1), the impacts of those approaches (Research Question 2), and the contextual factors that enabled or challenged implementation (Research Question 3). Project points of contact recommended interview respondents knowledgeable about these topics. Interviews were conducted with individuals or small groups (1-4 people), with 1-2 interviews per organisation.

Interviews were held through Microsoft Teams in English or French depending on participant preference. Comprehensive notes were taken during interviews and, with permission, audio recordings were made whenever possible as a reference for notetaking. Notes were shared back with interview participants for their review, with the opportunity to make any clarifications or corrections. French notes were translated into English with DeepL software and then reviewed for accuracy by a French speaker.

As noted in Table 2, 7 interviews were conducted involving 13 participants from 6 organisations, with at least one interview from all organisations participating in this case study.

DATA ANALYSIS

For **Research Question 1,** which focused on detailing the approaches used by individual EAC partners, survey record(s), interview notes, and project documents for a given partner were pulled and reviewed, with information on approaches summarised directly within the case study narrative.

For **Research Questions 2-4,** for which themes were synthesised across EAC partners, data from surveys, interviews, and project documents were reviewed in detail to identify themes associated with topics of interest to the case study, such as enabling factors, challenges, and impacts. In a second stage, documents were coded in Dedoose, with nodes representing the detailed themes identified in the first stage of analysis.

FOCUS GROUP DISCUSSION

After initial findings were prepared, case study participants were invited to participate in a multi-partner focus group discussion. An FHI 360 researcher presented the draft findings from the first stages of the case study and then facilitated discussion. The semi-structured focus group guide had two emphases: to validate (or amend) initial findings and to deepen findings around key takeaways for Research Questions 2-4.

As documented in Table 2, 4 participants from 4 organisations participated in focus group discussions.

ENSURING QUALITY

In addition to the quality checks described under different case study stages, partner validation of data and findings was the main means of ensuring quality. In addition to their interview notes (as described earlier), partners vetted the descriptions of their approaches documented in this case study report and were given the opportunity to make corrections if needed. The focus group discussions also served as an important validation exercise for key findings on Research Questions 2-4.

NOTE ON DATA SOURCE CODES

In the ***Presentation of key findings*** section below, source codes include abbreviations that indicate the type of source cited. These abbreviations, which always precede the period in a source code, can be read as follows: “S” for survey sources, “I” for interview, “FG” for focus group, and “PD” for project documents.

PRESENTATION OF KEY FINDINGS

Next, we explore key findings, walking through the results for each research question in turn.

RQ1. OVERVIEW OF PARTNER APPROACHES

We begin with results for **Research Question 1,** which focused on understanding the specific approaches partners used to facilitate access to learning opportunities for children without internet prior to and during COVID-19 school closures. Table 3 provides an overview of partner approaches, noting the implementing partner, country context, a description, the main modalities, and the reach of each approach. Appendix B provides a more detailed description of each approach.

As documented in the ***Typology of home learning approaches*** section above, partners implemented a range of different low- and no-tech approaches, spanning both self-learning and teacher-guided modalities. The mainly self-learning modalities were (a) home-learning packages coupled with teacher or facilitator support in Burkina Faso, Mali, Niger, and Pakistan and (b) educational radio programming in Nigeria and Pakistan. While we have categorised these as self-learning approaches because the majority of student time-on-task happens in a self-guided (or parent-guided) environment, these approaches all involved some degree of direct support, e.g., home-learning packages were supplemented by direct instruction or tutoring. Even radio programmes encouraged government teachers to follow up with their students, though partners had less direct influence over whether and how this was happening. The main teacher-guided approaches were (a) conference calls with students over feature phones (coupled with home visits when lockdowns relaxed) in Bangladesh and (b) small-group in-person learning sessions and camps in Kenya and India.

In the next sections, we examine why partners selected specific approaches (noting that all partners delivered education programming through a combination of self-learning and teacher-guided approaches, which are described in more detail in Appendix B) and what they envision the future of these approaches to be once schools have fully reopened.

Table 3. Partner approaches

	Organisation	Country context	Description	Main modalities	Reach (number of OOSC)
	**Alight**	Pakistan	Developed radio education programme aligned with government primary school curriculum. The programme was broadcast in Gilgit-Baltistan and later rebroadcast nationally.	Low tech, self-learning	5,000,000
	**Alight**	Pakistan	Home-learning workbooks were developed covering core topics. Teachers supported through small-group instruction for children in Grades 1-5.	Low tech, self-learning (with support)	81,736
	**BRAC**	Bangladesh	Phone-based education programme. Teacher conducted a 20 minute lesson twice a week via conference call with a small group of children. Adhering to COVID-19 safety protocols, the teacher made weekly house calls to check on children.	Low-tech, teacher-guided	69,371

	**Educate Girls**	India	In-person camps, following COVID-19 safety protocols, for groups of 12-15 girls and boys aged 8 to 10. The camps followed a curriculum that included instruction in Hindi, Math, and other topics.	No-tech, teacher-guided	200,000
	**Girl Child Network**	Kenya	Students gathered in small groups for facilitator instruction and to listen to government radio broadcasts. Home visits provided additional support for children and their families.	Low-tech, teacher-guided	15,337
	**Plan International**	Burkina Faso Mali Niger	Students received a (paper) home learning package focused on foundational skills and psychosocial support. A facilitator provided support through home visits.	Low-tech, self-learning (with support)	9,660
	**UNICEF**	Nigeria	Supported government-led radio education programme broadcasting P1-P3 content in numeracy, literacy, and basic science. Ongoing feedback sessions helped refine content. Learning data was collected through a UNICEF platform called U-Report.	Low tech, self-learning	1,027,181

Why these approaches? Insights into partner decisions

Partners ultimately turned to diverse approaches to try to meet the learning needs of marginalised children during school closures. This section examines why partners pursued certain approaches over others, i.e., the conditions that made some approaches more or less desirable in a given context.

Why radio?

Partners pointed to the extraordinary reach of radio broadcasts and their resulting potential to make education available to marginalised populations—both in-school and out of school children—across whole provinces or even nationally [I.2, S.2b, I.1a]. The ubiquity and familiarity of radios in Nigeria made them "the only [technology] that was very acceptable to the community" and, therefore, it was "easy to make sure that parents can afford to have their child participate" in remote learning [I.1a]. Even households without radios could listen over inexpensive mobile phones with radio chips [I.2] or through recordings of radio programmes on SD cards [S.1], though clustering approaches were still necessary to overcome radio shortages in Nigeria [I.1b] and Kenya [I.3].

Moreover, government interest in radio education facilitates institutionalisation, as demonstrated in Pakistan, where a provincial and then national government adopted and rebroadcast Alight's programme [I.2]. In Nigeria, the government initiated interest in radio education and sought UNICEF's support, meaning there was government ownership from the outset. Indeed, the UNICEF-supported radio programme was "a state programme that we are supporting the state to implement, so we needed to key into what the state could participate in" [I.1a]. If requests made by parents, communities, and others for radio education to continue even after schools reopened are to be realised [I.2, I.1a, I.1b], radio's ability to be readily institutionalised is an important benefit.

Photo Credit: UNICEF, Kasimu Bala

Why individualised support?

In other cases, developing radio programmes made less sense to partners, because radio programmes were too expensive to launch [S.5] (though long-term cost-effectiveness was touted as an important benefit), already in use [I.3], or not deemed sufficient for learner needs. While considered invaluable as a stopgap or remedial strategy with expansive reach, one respondent felt radio would not have been able to sustain the interest of children during extended lockdowns [I.2]. Another believed radio education was better suited to "more traditional forms of education" whereas their beneficiaries are "catching up on education and have different needs" [FG2.5]. Alight, which implemented a radio programme as well as a workbook approach coupled with more individualised supports, concluded that both education approaches were very effective, but the workbook programme more so (though they had different objectives, and the workbook programme was more resource-intensive and smaller scale) [S.2a].

Partners felt that the more individualised support made available under other approaches was not only good practice but particularly important to engaging the vulnerable populations they target. Few would dispute the value of tailored, face-to-face follow-up, but partners pursued this goal through very different strategies. To design approaches under the intense circumstances of initial lockdowns, partners sought to streamline their strategies: They leveraged existing structures (e.g., networks of community facilitators) [I.3], locally available technologies (e.g., mobile phones) [I.6], and government education initiatives (e.g., radio broadcasts) to the extent possible [I.3]. This resulted in very different approaches reflective of local resources and project starting points. Indeed, one respondent stressed that there was no one solution to this sort of educational provision during the pandemic and that the circumstances "forced us to be extremely creative and find solutions that were very localised" [FG2.5] with very little time [I.4]. Indeed, many partners implemented blended approaches in order to meet the needs of different communities and families.

What is the future of these approaches?

Potential for use in future emergencies and seasonal school closures

Partners all recognised the viability of these approaches during future emergencies, including future waves of the COVID-19 pandemic and other crises- "We're in the midst of the pandemic and we never know about tomorrow, so we need to continue embracing this home schooling approach" [I.3]-as well as natural disasters, violent conflict, and teacher strikes [I.5, FG.2.5, I.3, I.4]. Another partner foresaw using their approach annually during monsoon season in Bangladesh when schools in some parts of the country often close for a month or more [I.6]. Partners spoke to the importance of having approaches ready-to-launch as part of improved emergency preparedness, with one partner mentioning that they are beginning to think through what an adapted home-based version of their approach could look like for more restrictive future lockdowns [I.4].

Incorporating these approaches into standard practice

Partners also proposed different roles for these approaches as part of standard educational practice going forward. As previously mentioned, pandemic educational radio broadcasts sparked local demand for ongoing radio education [I.2, I.1a, and I.1b]. One partner stated that radio "is very cheap, effective, and easy" [I.2] and another added that it "represents a valuable opportunity [to address] learning gaps, including the possibility of reaching out of school children, that can be capitalised on even in non-emergency times" [S.1, PD.25]. Radio provides a crucial opportunity to reach out of school children and to reinforce instruction for in-school children [I.1a, I.1b, S.1, S.2b]. Indeed, other approaches were also hailed as important remediation strategies. For example, one partner explained: "[A home learning package] is an approach that can be continued even in normal times because it helps raise the level of the students. It's like having a tutor. The child practices and there's a facilitator who helps review his exercises" [I.5]. In the same vein, another partner felt a similar approach involving home learning workbooks (and teacher support) could be

invaluable in helping students catch up on content missed during school closures (for children who hadn't already benefited) [I.2]. In another example, learning camps introduced during the pandemic are still in use as bridging programmes to help out of school children re-enter school successfully [FG2.4, I.4].

One partner also suggested that radio programmes be used to support in-school instruction and that some teachers have even started doing this already [I.2]. For example, teachers could "listen to how a lesson was taught on the radio to develop their understanding of the topic. Then, in the classroom, the teacher could teach the students and then turn on the radio to let them listen to the programme as well" [FG1.2]. At the same time, this resource should be an optional one that teachers are empowered to use only if they feel it enhances their lessons [FG1.2].

Another partner detailed the ways that their pandemic pivot has already reshaped their normal approach. Based on their experiences during school closures, they have continued to incorporate more locally available materials (typically real objects) in classrooms to support learning and have maintained "home schooling" support during evenings and weekends now that schools have reopened. Specifically, community facilitators continue to provide home support and encourage parent involvement, in line with the Kenya Ministry of Education, Science and Technology's Vision 2030 plan, and the partner has issued solar lamps to make sure that support can continue during evenings [I.3]. They find the results of these efforts promising:

> *[Before the pandemic] there had been a certain disconnect between teachers and pupils and their community or parents, but now the whole educational ecosystem is coming together to support the learning processes of children: There is the involvement of the government, the involvement of the communities [and parents], and the involvement of the pupils and teachers themselves. Now they put the child at the centre of learning processes [I.3].*

In summary, partners implemented a range of different low- and no-tech approaches, including home-learning packages, radio programming, and small-group learning sessions; incorporating several different approaches in their strategies. Radio programming was used by partners where this technology was readily accessible, even for many disadvantaged households, and because of the potential for wide reach and government uptake of the approach. Other programmes differed by modality and included small-group learning camps, community learning sessions, conference calls with teachers, and home learning packages supported by a community facilitator. These programmes favoured individualised facilitator support, which was seen as particularly important to the vulnerable populations EAC targets and also allowed partners to leverage within existing project structures. Ultimately, partners spoke to the long-term utility of approaches, including for remediation, for in-school instructional support, as alternative learning opportunities for out of school children, or during future emergencies.

RQ2. PERCEIVED IMPACTS OF APPROACHES

Next, we present the main educational impacts of these approaches **(RQ2).** We first explore perceived benefits to children before turning to caregivers and teachers. Table 4 summarises key the impacts that partners shared. It is important to note most impacts discussed are perceptions based on partner field experiences, not evaluations.

Table 4. Summary of key perceived impacts on children, caregivers, and teachers

	Impacts
Children	Although children likely learned less than they would have in normal school settings, approaches nevertheless helped to mitigate learning loss, as demonstrated by pass rates on national examinations in some contexts. The approaches also helped children maintain momentum and enthusiasm for schooling, lessened child protection concerns and provided opportunities to improve psychosocial well-being.
Caregivers	Partners observed substantial increases in parents' engagement with their children's learning, an impact anticipated to be durable.
Teachers	Radio programming models good teaching practices, thereby serving as an informal training tool.

Impact on participating children

Reduced learning loss during school closures

Partners unanimously reported that they believed project approaches helped to stem learning loss during school closures [PD.14]. Still, with shorter instructional periods (typically just one to a few hours per day), streamlined curricula, and less teacher interaction, children learned less than they would have during normal school settings: "It wasn't the full learning package they would have gotten had they been in school" [I.1a]. In spite of this, some partners reported strong results on national examinations [I.6, I.5, FG2.5], with similar percentages of children passing as in previous years in Pakistan, where there were also no significant differences in pass rates for boys and girls [S.5], and West Africa: "And we were extremely lucky to see that, at the end of day, the impact of school closures was extremely low or had no impact whatsoever on the number of students that actually passed the exam" [FG2.5]. At the same time, the duration of school closures likely matters. Schools closed for two months in West Africa and eight months in Pakistan compared to 18 months in India, where a respondent worried that there would be substantial learning loss from sustained school closures [FG2.5].

Additional educational benefits to children and youth

Partners also noted important educational impacts that go beyond learning, especially helping children maintain momentum with and enthusiasm for schooling [PD.14]. For one partner, this impact was particularly vital—"keeping kids connected with learning was actually the challenge we were trying to solve" [FG2.4, PD.13]. Having made gains before the pandemic to build interest and excitement about school, they worried that school closures would sever children's connection to education and lead children to remain permanently out of school, undermining the critical goal of re-entry when schools reopened [FG2.4]. For them, girls' excitement to participate in their camps—with some even continuing to participate in the afternoons after schools restarted—constituted an important success. In terms of how to engage children and sustain momentum, partners pointed to the use of fun, game-based activities, poems, and stories [I.6, FG2.4, PD.4, PD.7] and the value of basing programmes in communities, observing that this latter factor created "a very strong anchorage that motivated children to stay and finish the programme [FG2.5]."

Furthermore, partner approaches helped to mitigate child protection concerns, such as child marriage, transactional sex work, and child labour, which were amplified as families struggled to make ends meet after job or income loss during the pandemic. In Kenya, one partner made strides against child protection issues through direct mechanisms—i.e., community partners referred cases to government departments—and indirect mechanisms—i.e., learning opportunities provided an alternative to child marriage [I.3]. Additionally, participation was expected to improve psychosocial well-being during the pandemic, because partners integrated an emphasis on well-being into programme content [I.6, FG2.5, PD.13]. The opportunity to socialise in small groups, "which was a great relief to children" [I.1a], also made them happy [I.4]. Moreover, the continuity of education reassured children that school closures would not be permanent—an important concern especially for children who had (re)joined schools and worried that their recently restarted educational journeys were in jeopardy [I.5]. One respondent proposed that prior training facilitated teacher provision of psychosocial support during the pandemic [FG2.5], suggesting the value of incorporating this training into routine teacher education.

Impact on parents: improved parent engagement

Partners lauded improvements in parent engagement as a key impact from pandemic learning approaches, with one partner hailing this behavioural shift as "the magic that comes out of these challenges" [FG2.4]. This new engagement took many forms: direct involvement in lessons and learning support [I.3], help creating instructional tools from local materials [I.3], allowing time for children to dedicate for learning and checking that homework gets finished [FG2.5], leaving radios and cell phones at home for children to use when learning [I.1a, I.6, PD.7], and greater commitment to sending children back to school and ensuring their attendance [FG2.4, I.3]. As this last point suggests, partners see this as a durable behaviour shift. For

example, once schools reopened in Kenya, GCN observed parents following up on the learning outcomes of their children, asking how they could support children during evenings and volunteering to make learning materials for use in class [I.3].

What led to this change? One respondent explained that shifting the locus of learning from schools, which are often too far for parents to visit regularly, to homes and communities helped to break down the perception that education is the purview only of teachers. They noted that "[before the pandemic] learning, discipline, everything had been left to the teachers to do. But now parents are participating more in the learning processes of their children … it's something that has been embraced at the household level." [I.3]. During the pandemic, learning had to happen at home or not at all, and parents began to appreciate—and take on—some of the responsibilities previously left to teachers [I.1.b].

Partners tended to feel that these gains with parent engagement would not have been so readily achieved under normal circumstances—that they represent a silver lining to the tragic circumstances of the pandemic. Governments and organisations may want to consider how to harness this new parent interest and how to adapt engagement strategies from this period, such as coaching from teachers and community facilitators during home visits, for use in the future.

As an additional benefit to parents, one partner also reported that radio led to opportunities for adult literacy and numeracy development, especially for mothers with interrupted education listening along with their children [I.1a]. This impact suggests the potential for more widespread benefit if educational radio programmes continue to be aired in the future.

Impacts on teachers: Radio for teacher training and instructional support

Both partners who introduced radio programming mentioned its value as a teacher training tool, especially for teachers with low levels of training. The programmes modelled child-centred pedagogies, including strategies for engaging children in activities [I.1a], and "helped teachers understand that a topic can be taught in different ways" [I.2]. Mandatory participation during broadcast periods helped ensure that teachers listened. Required teacher feedback forms in Pakistan—monitored by the Education Department—helped enforce this teacher mandate [I.2].

In summary, partners observed that children missed out on less learning than they initially feared—and they noted some impressive results in spite of the challenging circumstances—but they concluded that these measures, which often include only short instructional periods each day, nevertheless remain less than ideal for learning. Partners also noted important educational impacts that go beyond learning, especially helping children maintain momentum with and enthusiasm for schooling, in mitigating child protection concerns, and in providing important psychosocial support during a critical period. Partners cited significant achievements in improving parental engagement with children's learning, gains beyond what they felt would have been possible under normal school circumstances. They also recognised training benefits to teachers from radio programming.

RQ3. CHALLENGES AND ENABLING FACTORS AFFECTING IMPLEMENTATION OF APPROACHES

Next, we consider common themes that emerged around factors that enabled or challenged implementation. First, we explore points related to 'who' influenced implementation, i.e., the complex human resources—the parents and community members, project contributors, and government actors—central to pandemic approaches. Then we turn to themes related to content planning, i.e., the 'what' of approaches. Finally, we document a range of process considerations, i.e., the 'how' of facilitating education opportunities during the COVID-19 pandemic.

Who? Factors related to human resource actors

First, we look at factors related to human resource actors, considering actors at three levels: local communities and grassroots organisations, project expertise, and government officials. Table 5 summarises key partner insights in this area.

Table 5. Summary of challenges and enabling factors related to human resource actors

Factor	Enablers	Challenges
Local communities and grassroots organisations	Established partnerships facilitated implementation.	Low initial interest among parents, emphasis on the use of children as domestic help.
Project staff expertise	Having in-house technical staff and established partnerships with universities provided access to expertise.	Deployment in the field impossible during lockdown conditions.
Governments	Government buy-in was essential for implementation.	Securing necessary approvals and permission.

Leveraging local resource networks established before the pandemic

Local resources networks that partners had tapped into prior to the pandemic—e.g., village committees, community facilitators, parent networks, teachers, school committees, and other grassroots, business, and government structures—facilitated implementation during school closures [I.4, I.5, I.3, I.1a, I.1b, FG2.5, FG2.4, PD.20]. In India, such community connections helped to build interest in learning camps [I.4, PD.12]. This was particularly critical early in the pandemic when strict restrictions in some localities prevented visits from project field coordinators, who would otherwise have mobilised participation (and did later in the pandemic). Under these circumstances, the project called community volunteers to take on this important role until field coordinators could resume visits after restrictions were relaxed. Another partner explained that embedding the pandemic approach within existing community structures localised the approach in a way that motivated children to complete the programme from home [FG2.5]. Connections with local structures also gave them the means to collect feedback to refine and contextualise their approach and also to share their insights: "We're very much integrated in the system and network, where we have a very positive environment to be able to build and share experiences and learnings" [FG2.5].

Another partner leveraged their strong reputation in communities before the pandemic to respond efficiently during school closures [I.1a]. Their reputation also facilitated government buy-in and made the government receptive to their support [I.1a]. Moreover, pre-pandemic partnerships with media houses led to donations and financial support (e.g., free advertising) and meant the partner already knew—and did not have to spend time learning—how to maximise broadcast coverage. In short, at a time when partners needed to launch new approaches quickly in challenging circumstances, their pre-pandemic connections gave them structures to operate within and the trust needed to work within those structures productively.

Community and family actors

While strong pre-existing local networks helped partners launch approaches and granted them entry into communities, low initial community interest nevertheless presented a challenge [PD.12]. In Nigeria and West Africa, families initially preferred to send some children to assist with farm work and chores outside the home, rather than participate in learning opportunities, depressing participation especially among boys [I.5, I.1a]: "We saw that the rate of execution by the girls was higher than the boys because the girls are at home while the boys play football, go to the field, and have to [provide] water to the animals [I.5]." In these and other contexts, at first, some parents would not provide learning support to children or did not make available the radios and cell phones needed to access learning content [I.6, I.5, I.3]. As one respondent explained, "the initial problem—apart from learner participation—was how to even get radios in communities, how to get parents to sacrifice their radios for the children to use. People are very close to their radios. They take them around with them to their farms and to the markets" [I.1a].

With the pandemic undermining livelihoods and elevating poverty levels, some parents also turned to child marriage and child labour. These child protection concerns not only presented challenges to children's well-being in and of themselves but also prevented children from participating in learning opportunities [I.4, I.3].

To address these concerns and bolster interest in participation, partners launched community sensitisation campaigns. All partners stressed that sensitisation was key to securing children's access to learning and cultivating stronger parent engagement and support for their children's education. To achieve this, partners needed to figure out who to engage. One partner initially tried to work through teachers and head teachers but only realised greater participation when they expanded their outreach to school-based management committees and parents [I.1a]. It was also important to involve community gatekeepers, especially opinion leaders, like imams, pastors, and other religious leaders [FG1.3, I.1b]. Additionally, it was critical to involve village women to build advocates for girls' participation [I.5].

Partners also offered insights into effective strategies for sensitisation campaigns. One partner (a) surveyed primarily economic community needs and then trained their teams to provide support to address those needs and (b) distributed COVID-19 relief packages, with both strategies helping to build community trust that eventually translated into greater willingness to send children to participate in learning camps [I.4, PD.12].

COVID Relief kits were distributed among the most vulnerable communities in rural, remote villages, to help families mitigate the immediate impact of COVID-19. This helped strengthen trust and ensure parents send their children to the community learning camps.

Another partner took a similar approach, making sure to understand common barriers to participation before launching sensitisation campaigns:

> *Organisations "need to understand the factors that make it hard for parents to participate in the learning processes of their children." For example, normally, "parents wake up, go to work, and children go to school. They meet in the evening and everyone is tired. The parents do not care to follow up about what children learned, whether they have been given assignments, and to support them in the learning process … Once you understand those factors you can move in and sensitise them about the importance of participating in the learning process" [I.3].*

These same two partners also emphasised the value of making education less abstract by bringing parents to visit camps or allowing parents to see learning sessions hosted in community settings [I.4, I.3]. Direct coaching to parents in their homes on how to support children's education–including realistic strategies for parents who are illiterate and cannot directly assist with learning—also helps [I.3, FG2.5]. Finally, one partner gave the government ownership of the sensitisation process for the radio programme, so that the Education Department sent a letter to all District Education Officers to disseminate information to teachers, who then informed parents that radio lessons would be available and participation was mandatory [I.2].

Project staff and design experts

Project staff and contributors were also key actors in these approaches. The rapid pivots necessitated by the circumstances required new or adapted content for radio programming and instructional packets. Partners pointed to the ability to identify experts who could support content development and revisions, often in local languages, as a key enabler for several partners [I.1a, FG2.5, I.2]. Having expert advisors on staff who already knew the context [FG2.5] and having existing partnerships with universities who could field these experts [I.1a] helped partners meet this need.

A more general challenge was identifying and collaborating with these experts under pandemic lockdown conditions. The same challenge applied to engaging project staff as well. The transition from face-to-face operations to remote interactions made planning a challenge. Projects often needed to rely on conference calls and mobile phones even for large events and training and monitoring, making it particularly difficult to reach staff or volunteers without cell phones [I.4, I.5, PD.10]. Another partner struggled to find children to pilot with due to lockdown restrictions and decided to engage the children of staff as a result [I.2]. Ultimately, as one partner explained, remote planning and coordination underscore the importance of having strong community networks in place, making it possible for a local community member to spread messages in the community without "having agents regularly in the field who risk bringing the pandemic to a village" [I.5]. Strong communication channels are also key and, as preparation for future COVID-19 waves or other emergencies, that same partner hopes to put in place a WhatsApp channel to enable communication with community representatives [I.5].

Government actors

Perhaps unsurprisingly, government buy-in enabled partner work. Although securing government permissions to implement during the pandemic—especially to implement in-person approaches—was sometimes complicated [I.4], many partners reported eager government responses to proposals [I.6, I.3, I.2, I.1a]. Governments recognised that many children could not access their remote learning programmes, which were often designed only for television, but did not have strategies in place to reach these children: "The state government realised they had never had any plan for emergencies. They realised they needed to have some contingency plans" [I.1a]. In the words of another partner:

> *There was a desperation in the Education Department. They wanted to do something, but they were not able to do anything … Then we took [our] programme to the government. The way they welcomed us … the way they started working with us was remarkable [I.2].*

Building on strong government interest, both partners pursuing radio approaches involved the government in implementation, growing government ownership of the programme and

helping to institutionalise radio learning [I.2, I.1a, I.1b, PD.24]. One explained the value of having the government take on sensitisation campaigns and some monitoring functions for the programme in order to foster government ownership [I.2]. In turn, government involvement helped these approaches reach more beneficiaries, as governments donated or provided steep discounts for broadcast time [I.2, I.1a, I.1b].

What? Developing the structure and content of the intervention

Next, we look at enabling factors and challenges related to content development for partner approaches, examining themes related to technology and materials, instructional content, and structural considerations. Table 6 summarises the main findings on this topic.

Technology and materials

Partners all noted that the populations they work with rarely have access to television or internet and, therefore, were unable to access conventional forms of remote learning: "No one in federal and provincial ministries was thinking of [the] millions of children who are underprivileged and living in [a] disadvantaged environment. They do not have access to any such resources internet, cable and TV and gadgets at home" [S.2b, PD.15]. Children's access to technology was constrained not only by a lack of devices but also barriers related to digital literacy and cultural norms that discourage girls, for example, from using digital technology [I.4, I.3], meaning that even if funding for internet and devices had been available, some children would have still struggled to access them.

As partners worked out how to reach these vulnerable populations, they turned to the low- and no-tech solutions discussed throughout this report. However, even very pervasive devices, like radios and mobile phones, were still unavailable for many beneficiaries. To address this challenge, partners convinced families or neighbours with devices to ensure they were shared with children, as mentioned above in **Impact on parents: improved parent engagement.** They also adopted clustering strategies sometimes supported by a teacher or parent, bringing small groups of children together to listen to programmes, which had the added benefit

Table 6. Summary of challenges and enabling factors related to instructional content

Factor	Enablers	Challenges
Technology and materials	Radio and mobile phones already available to some in rural communities.	The most vulnerable children have extremely limited technology access. Pandemic restrictions further limited access to technology, even including printed materials in some contexts.
Instructional content	Aligning lessons with the government curriculum facilitated community and government buy-in.	New modalities required substantially simplified curriculum, often reworked for multi grade audiences. New modalities were not conducive to teaching some topics.
Structuring lessons	Short, flexibly scheduled lessons help families balance competing demands for children's time during school closures.	Briefer attention spans for new modalities mean lessons must be more concise than in traditional school settings.

of allowing children to socialise and support one another [I.1a, I.1b, I.3, I.6]. Finally, some partners also provided devices where households (or clusters of households) did not have them, with radios and solar lamps (in Kenya) and SD cards with recordings of radio lessons (in Nigeria) at the request of parents [I.3, I.1a, I.1b]. However, insufficient funds sometimes made it impossible to procure devices, meaning, for example, that radios could not be purchased in Nigeria [I.1b]. A further challenge for mobile phones was reduced network connectivity in rural areas, especially during monsoon season in Bangladesh [I.6, PD.7].

Accessing other materials and supplies during the pandemic was also a challenge. In India, COVID-19 guidance meant that worksheets and other conventional learning materials could not be shared, requiring the project to design creative instructional approaches that did not rely on such materials [I.4]. In Kenya, traditional teaching and learning materials were too costly, so the project supported communities to develop improvised materials with locally available objects, like sticks, rocks, and discarded containers, an activity they have continued to encourage even now that schools have reopened [I.3, FG1.3]. In Pakistan, a partner (a) struggled to access the specialised equipment, such as high-quality microphones, needed to record radio lessons and (b) could not convene together in recording studios, so they initially recorded their lessons on mobile phones instead [I.2].

Instructional content

Partners shared a number of insights into design considerations for pandemic instructional content. First, partners stressed the importance of aligning content with national or state curricula [I.6, I.4, I.2]. All partner curricula did so wholly or at least in part, which not only helped students stay on track with local learning objectives but also incentivised participation by appealing to parents' interests for their children's learning [I.4]. It also facilitated institutionalisation, for example, with provincial and then national governments adopting partner radio lessons in Pakistan [I.2]. Because no other primary-level radio lessons in Pakistan followed the government curriculum–even though other non-aligned education programmes aired regularly—a partner referred to their decision to focus on government content as an important objective: "The innovation of the radio programme was that it was developed from scratch using the national curriculum, which was followed in all the provinces across most of Pakistan. It was a new programme that focused on student learning outcomes" [FG1.2].

However, the national curriculum could never be covered in full by partners' emergency approaches, which tended to provide at most a couple of hours of daily instruction over a period of one to a few months. As a result, partners had to prioritise what one respondent called the "must-learn" content over "should-learn" and "nice-to-learn" content [I.6]. This decision-making process involved mapping out official learning objectives that children might be tested on in government examinations, as well as determining what subjects or topics could be effectively conveyed via radio programming, over the phone, or in the absence of physical instructional materials or with minimal teacher support, with partners reporting greater difficulty providing math instruction well under the circumstances [I.6., I.4, I.1a, PD.7].

Partners also wrestled with the challenge of designing multi-grade lessons [I.3, I.2]: "There might be a child from Grade 1. There might be a child from Grades 2 or 3. So how do you make it interesting for all the kids? This was a very difficult question for us" [I.2]. That same partner explained that to address this challenge, they mapped learning objectives topically by grade and then progressed from basic to more advanced aspects in their radio curriculum, with the simpler stages serving as new content for some learners and a useful refresher for others. Although the programme targeted primary school children, they even incorporated fundamental concepts, like counting, poems, stories, and even handwashing demonstrations to appeal to any pre-primary listeners. They noted that, while this may not be ideal, this concept-building approach helps to address a challenge that is exacerbated by the use of remote learning modalities: "We don't know who is sitting in front of the radio because we can't see them. It's not the face-to-face teaching" [FG1.2].

In addition to these strategies for overcoming content-related challenges, partners pointed to additional strategies that helped them improve their education programming. First, lessons should be engaging and fun, which was especially important during the pandemic to keep children interested

in education and also to provide joy during difficult times. Specifically, partners recommended incorporating storybooks, drawing activities, games, ice breakers, stories, and poems [I.6, I.2, FG2.4, PD.4]. Second, lessons should also be short. One partner piloted hour-long lessons and then shortened them to 45 minutes, which they found more appropriate for the attention span of early primary learners [I.2]. Another partner explained that they did not want home learning packets to require more than a couple of hours of children's time each day, because "we were aware that these children, because they're not in school, might be involved in other activities, like supporting the family financially" [FG2.5]. Finally, lesson content must also be locally relevant [I.5], making contextualisation processes important, as discussed above in ***Leveraging local resource networks established before the pandemic.***

Structuring lessons and designing content

Partners also shared some final content-related insights. First, partners commented on the difficulty of designing approaches without knowing how long lockdowns would continue. Two partners mentioned transitioning from short-term solutions (distributing instructional materials in one instance, radio broadcasts in another) to longer-term ones (home-learning workbooks and small-group phone calls) as lockdowns stretched on [I.6, I.2]. Another partner mentioned that the timing of their lockdown—near the end of the school year—helped, both because (a) they knew they only needed to complete the academic year remotely and (b) they only had to develop content in French: At the start of their programme they work in over 20 local languages but by the end of the school year they have transition mainly to French [FG2.5].

Lastly, the two partners who supported radio programmes stressed the importance of flexible scheduling for broadcasts. One partner explained that re-broadcasting lessons at multiple times matters because children who could not listen in the mornings might be able to in the afternoons or evenings [I.2, PD.2]. Another shared that they avoided broadcasting at times that conflicted with children's Islamic education, which parents were continuing at home even during closures of Islamic schools [I.1b].

How? Process considerations

Now, we examine challenges and enabling factors related to process considerations, mapping out themes related to outreach to the most marginalised, sharing, COVID-19 safety, and project monitoring efforts. Table 7 summarises the primary factors that partners named.

Table 7. Summary of challenges and enabling factors related to process considerations for implementation

Factor	Enablers	Challenges
Outreach to the most marginalised	In-person outreach activities improve enrolment of out of school children Additional support, especially through home visits, for children who are struggling.	Reaching very marginalised children, especially out of school children and children with disabilities, was very difficult during the pandemic.
Dissemination and sharing	Deliberate efforts by partners to share their approaches facilitated institutionalisation and expanded reach, sometimes substantially.	
Implementing COVID-19 safety protocols		Ensuring beneficiary compliance with COVID-19 safety protocols.
Project monitoring and learning	"Pilot, pilot, pilot" [FG2.4]: Piloting and ongoing project learning helped partners refine approaches that had to be rolled out more quickly than is typical. Data on participation and learning, while challenging to collect, helped partners improve instruction and provide targeted follow-up.	Piloting and in-person data collection were more difficult, and sometimes impossible, due to lockdown restrictions.

Outreach to the most marginalised

Partners expressed frustration and concern that the out of school children their normal interventions are designed to target were more difficult to reach during school closures and were also largely excluded from government approaches: "There are around 22.8 [million] out of school children (OOSC) in Pakistan who are the real target group of [our] interventions. During lockdown [this] segment of the community [was] drastically affected" [S.2b]. Two partners estimated that approximately 90% of participants in their approaches had been in-school prior to the pandemic. However, the EAC programme specifically targets children out of school before the pandemic and those who were never enrolled [I.3, I.4]. One explained that over the course of India's extended lockdown, they began to have greater success enrolling out of school children in learning camps: "we've been able to turn that around quite significantly in the camps that we're running this year" [FG2.4]. They attributed this to relaxed lockdown conditions that enabled field coordinators and Team Balika[2] to resume in-person outreach activities and to more aggressive door-to-door campaigns that were possible as a result [I.4, FG2.4, PD.10].

Team Balika community volunteers go door-to-door to convince parents to send their daughter to Camp Vidya, a community based learning initiative of Educate Girls.

[2] Team Balika are unpaid local volunteers who advocate for girls' education, support school reform, and serve as community facilitators. Each village participating in the programme has a Team Balika, who are typically the best educated women or men in the village [PD.10].

Additionally, partners worried about the impacts of school closures on support to children with disabilities. As one partner explained, schools are better-resourced to support the diverse needs of children with disabilities and the community facilitators responsible for supporting learning during the pandemic lacked the experience and training that teachers have in supporting this population [FG1.3]. To address this, partners expanded support, usually in the form of additional follow-up from teachers, for children with disabilities, as well as other children who were struggling: "There is really close follow-up for these children in a situation of disability or vulnerability. They receive more follow-up, which is to say a member of the CGDES [Comités de Gestion Décentralisée des Etablissement Scolaires] could plan a visit every day" [I.5]. However, another partner felt that much more was needed to ensure the learning needs of children with disabilities were adequately met—such as developing adapted materials and having facilitators or specialists trained in inclusive approaches available, emphasising this point as one of their top recommendations for future programming during and outside of emergencies [I.3, FG1.3].

Dissemination and sharing

Partner efforts to disseminate their approaches, sharing them with governments and other organisations, expanded the reach of partner approaches, sometimes substantially, and gave life to some approaches even after school closures ended. As discussed above in ***Government actors,*** government interest in radio programmes meant that programmes aired on public radio stations with government support were, as a result, broadcast to more children. In Pakistan, radio was pitched to the provincial government after piloting and later caught the interest of the federal government as well. As a result, a programme that was initially meant to air in a small subset of participating communities was ultimately aired nationally and re-broadcast several times. This partner explained that sharing was a deliberate strategy intended to maximise reach during the lockdown in the hope of reaching more marginalised children [I.2]. Radio approaches also motivated others, such as religious leaders, in Nigeria to turn to radio as a modality for disseminating information [I.1b] and has inspired Alight projects in other countries to develop their own radio programmes [I.2].

Other approaches have spread too. Home instructional packets for primary-school children have been adapted for use with illiterate and divorced women [I.5]. In Bangladesh, the government incorporated the phone schooling model into a new education framework [I.6]. In Kenya, the Ministry of Education has followed the home schooling approach used there with interest, though the greater human resource intensiveness of programmes that provide individuals support presents a barrier to adoption at present [I.3]. Finally, in Pakistan, the Punjab government approved the home learning workbooks developed by Alight during school closures, and then UNICEF funded their expanded printing in eight districts, and they are now in use in roughly 13,000 literacy centres. Having been designed with EAC funding for use in approximately 50 centres, this expansion translates into dramatically extended reach [I.2, PD.3].

COVID-19 safety

Partners took COVID-19 safety protocols very seriously, often providing personal protective equipment for in-person lessons and incorporating pandemic-safety strategies into instruction [S.3, S.4, S.5, PD.12]. However, partners participating in one focus group discussion shared how difficult it was to ensure that protocols were being followed at all times, especially given the excitement around socialisation [FG2.5, FG2.4]. They explained that "we have to be realistic about how much we can enforce these protocols" [FG2.5], because, in spite of sensitisation efforts, COVID-19 risk remained abstract to some. This was especially the case in rural communities during India's first wave, which was at first largely concentrated only in urban areas, and in rural villages in West Africa, where communities were not seeing cases, either because cases were attributed to common illnesses, like malaria, or the pandemic had not reached those settings [FG2.5, FG2.4, PD.11]. Convening very small groups may help: one partner who had, on average, five children per group reported that it was relatively easy to maintain social distancing [I.2]. Additionally, one partner mentioned the challenge of identifying appropriate venues for in-person

camps, with the benefits of being outdoors or in very well-ventilated spaces for COVID-19 safety at odds with the need to have a safe, covered space during monsoon season [FG2.4].

Project monitoring and learning

Evidence helped guide and refine the implementation of approaches during school closures. Piloting was very important in helping partners improve instruction, affording insights about how long learning sessions should be, how to make sessions more engaging for children, and how to improve the delivery of tricky topics, like math, through the new modalities necessitated by school closures [I.2, I.6, I.4, I.1a]. Some partners particularly stressed the value of ongoing qualitative feedback sessions after pilot phases were complete to allow them to iteratively improve approaches [I.4, I.1a]. While always a good practice, this feedback was especially important given that approaches needed to be rolled out with less planning time than is typical. In one instance, collecting qualitative data through the digital platform Open Data Kit with the help of another organisation helped them compile feedback efficiently [I.1b]. Partners emphasised the value of including children and parents—in addition to experts—in feedback sessions, noting examples of critical improvements suggested by these groups [FG1.2, I.1a, I.4]: "So, for us piloting and getting that feedback from volunteers, from our field coordinators and even from parents was really helpful in designing" for scale [FG2.4].

Partners also monitored attendance, teachers' and facilitators' content delivery, and learning outcomes. In some cases, this data was used to refine content, to understand generally what content many children were struggling with [I.1a]. In others, monitoring allowed partners to follow up promptly on absenteeism and to provide more targeted support to struggling students [I.3, I.6]. Nevertheless, COVID-19 restrictions sometimes limited the use of conventional in-person data collection approaches, making collecting adequate data very challenging, and partners pointed to this as an important area for learning and improvement. Additionally, in terms of strategies to help deal with these challenges, partners suggested the use of WhatsApp groups to collect information from communities, phone surveys, and platforms such as UNICEF's U-Report, baseline and end-line assessment using the ASER learning assessment, and having parents give informal assessments to children [I.4, I.6, I.1a, PD.10].

In summary, partners named a range of factors that positively or negatively influenced implementation. Concerning resource actors, partners mentioned that established partnerships, relationships with experts in learning content development, and government buy-in were critical enablers. Low initial levels of interest and competing priorities—such as the need for domestic help—on children's time challenged implementation. To address this, partners recognised the need to involve school-based management committees and community "gatekeepers," especially traditional leaders and religious figures. Village women could also be critical advocates for girls' education. In terms of content, aligning lessons with the government curriculum and ensuring lessons were short and flexibly scheduled helped, whereas, with limited access to technology and equipment, the need to rework curricula for new learning modalities and audiences hindered content development. Finally, partners concluded that dissemination and sharing, project monitoring and learning, and strategies to reach marginalised learners were enabling, in spite of corresponding challenges that sometimes undermined achievements in these areas.

RQ4. EAC PARTNERSHIP EXPERIENCES

Next, we turn to **Research Question 4,** which probed on perceptions of the added value of partnership with EAC, especially during the pandemic. We also report any recommendations partners made to EAC. Table 8 summarises the main themes reported on partnership experiences.

Table 8. Summary of partner experiences partnering with EAC

Enablers	Challenges
• Flexibility in programming solutions; opportunities for "thinking outside the box". • Open-mindedness and supportive guidance. • Flexibility with performance metrics and indicators. • Opportunities for learning and sharing within the EAC network of partners.	• Timeliness in guidance on allowability of COVID-19 costs. • Clarity of budget guidance. • Ability to engage and support government efforts on emergency preparedness.

Flexibility

Partners agreed that EAC demonstrated flexibility following pandemic school closures, which gave them the opportunity to "think outside the box" when designing their pandemic responses [S.2a] and ultimately helped them pivot quickly and effectively [S.3, S.5, FG2.5, FG2.4]. In the words of one partner, "EAC was very quick in terms of reaching out to us and supporting us to come up with a contingency plan that would work during that period of lockdown [FG1.3]."

In particular, partners appreciated EAC's open-mindedness and well-considered feedback about proposed approaches, noting that EAC—like so many partners during the pandemic—was "cooperative and open to learning" [FG1.2]. The same partner also explained that an extension granted after the recognition that their original target would not be achievable because of lockdown helped: "So EAC gave us an extension for six months so that we can manage all these [pandemic challenges]. That flexibility helped us to engage the children, the parents, and the staff members so that we can achieve our targets" [FG1.2].

At the same time, another partner suggested that the same level of flexibility afforded to partners during the COVID-19 pandemic would benefit partners at all times, especially in the face of similar challenges during new waves of the pandemic or other emergencies, conflicts, and periods of unrest:

It would help to have "on-hand guidance on how to respond to crisis situations and those situations we are faced with regularly in our context, which is extremely volatile. You have other partners that might have guidance that's already on hand: 'You have a crisis. This is the guidance on how to build a case to be able to receive a response on flexibility'" [FG2.5].

Timeliness

Responses on timeliness were mixed. Some partners reported EAC responded promptly and allowed at least one partner to move forward without waiting for a formal signed agreement, which, in turn, helped facilitate timely implementation [FG1.2, S.3]. One felt that initial guidance would ideally have come sooner and that EAC was comparatively "slow relative to other partners, to provide guidance on the eligibility of potential COVID-19 costs. A clearer approach, tailored to the implementation contexts, would reduce financial and programmatic risks" [S.5]. The timing ultimately meant that their proposal for operating during the pandemic preceded EAC guidance [FG2.5].

Budget and funding considerations

Related to budget and funding, some partners suggested that emergency funding be made available to supplement project funds and enable projects to provide additional services, resources, and humanitarian relief [I.5, S.3, S.4]. Another partner requested clearer budget guidance about reallocating (even relatively small) portions of funding [FG2.5] and more detailed information on allowable costs:

In general, the lack of clear and detailed guidance from EAC often leaves room for multiple interpretations and uncertainty about

acceptable practices and can often hinder the grant management process. Clear and periodically updated guidance on the eligibility of costs in different scenarios related to COVID-19 (or education in emergencies more broadly) would allow grantee organisations to consider the impact of different strategies more proactively [S.5].

Performance metrics

Partners appreciated that EAC recognised that targets often could not be met under pandemic conditions and, as a result, was very flexible on performance metrics. For one partner, the opportunity to adjust period targets, keeping the life of project targets unchanged "relieved pressure on them" and "helped them focus on the quality of the activities and reaching students" [FG1.2]. Other partners made similar comments [FG1.3, FG2.4].

In the wake of an 18-month lockdown, one partner valued EAC's flexibility to adjust period targets and requested the opportunity to redefine performance metrics, adopting new measures such as 'readiness to enrol [FG2.5]. Another partner agreed that the EAC's flexibility in terms of setting realistic performance targets could be helpful in normal circumstances: their focus on meeting targets for out of school children sometimes means that there might be "missed opportunities" to support other at-risk children [FG2.5].

Content considerations for EAC's agenda

Several partners also suggested topical considerations for EAC's agenda, areas that future EAC projects should seek to address. For example, one partner drew attention to the need for projects to support government emergency preparedness measures, since the pandemic "caught governments and societies unaware and not prepared to respond to emergency situations. The MOE was equally not alert to providing technical coordination to manage the crises" [S.1]. Others urged focuses on helping children—and helping governments to help children—catch up on learning lost during school closures [S.1, S.2a, FG1.2]. Finally, one partner stressed that EAC should encourage a focus on teacher capacity, which is critical but sometimes underfunded[3]:

> *Without investing in capacity building for teachers, we cannot make a major achievement in the long run…in my existing programme, zero funding was allocated for teachers training programme….My feeling is that EAC needs to focus on that when they are reviewing any education programme [FG1.2].*

Opportunities for learning and sharing

Finally, partners value opportunities for learning and sharing within the EAC network. One partner was grateful that EAC "managed to bring partners together to share best practices and challenges in supporting learning in the context of a pandemic" [S.3]. Others requested more knowledge sharing among EAC and external partners [I.1b] or even a partner community of practice: "Then we can share the different innovations and interventions they've implemented during COVID-19 from country to country" [FG1.2]. Having a remote forum for sharing would be particularly useful now given that in-person conference opportunities have been missed during the COVID-19 pandemic [FG1.2].

In summary, partners all expressed gratitude for the opportunity to partner with EAC and pointed to several areas that helped them effectively provide education opportunities during pandemic school closures. For example, partners appreciated the flexibility to adapt their interventions and especially the opportunities for "thinking outside the box." They also praised EAC's open-mindedness, supportive guidance, and flexibility with performance metrics. Partners valued—and seek more opportunities—for sharing with other partners. In terms of potential areas for improvements, some partners suggested more timely guidance and clearer budget guidance would help. Finally, they recommended that future projects focus on supporting emergency preparedness, especially for Ministries of Education and Education Departments.

[3] Note: EAC does not prescribe to partner projects any specific interventions, rather EAC supports/funds the interventions proposed by the partners to address the barriers to OOSC education which may include building teacher capacity.

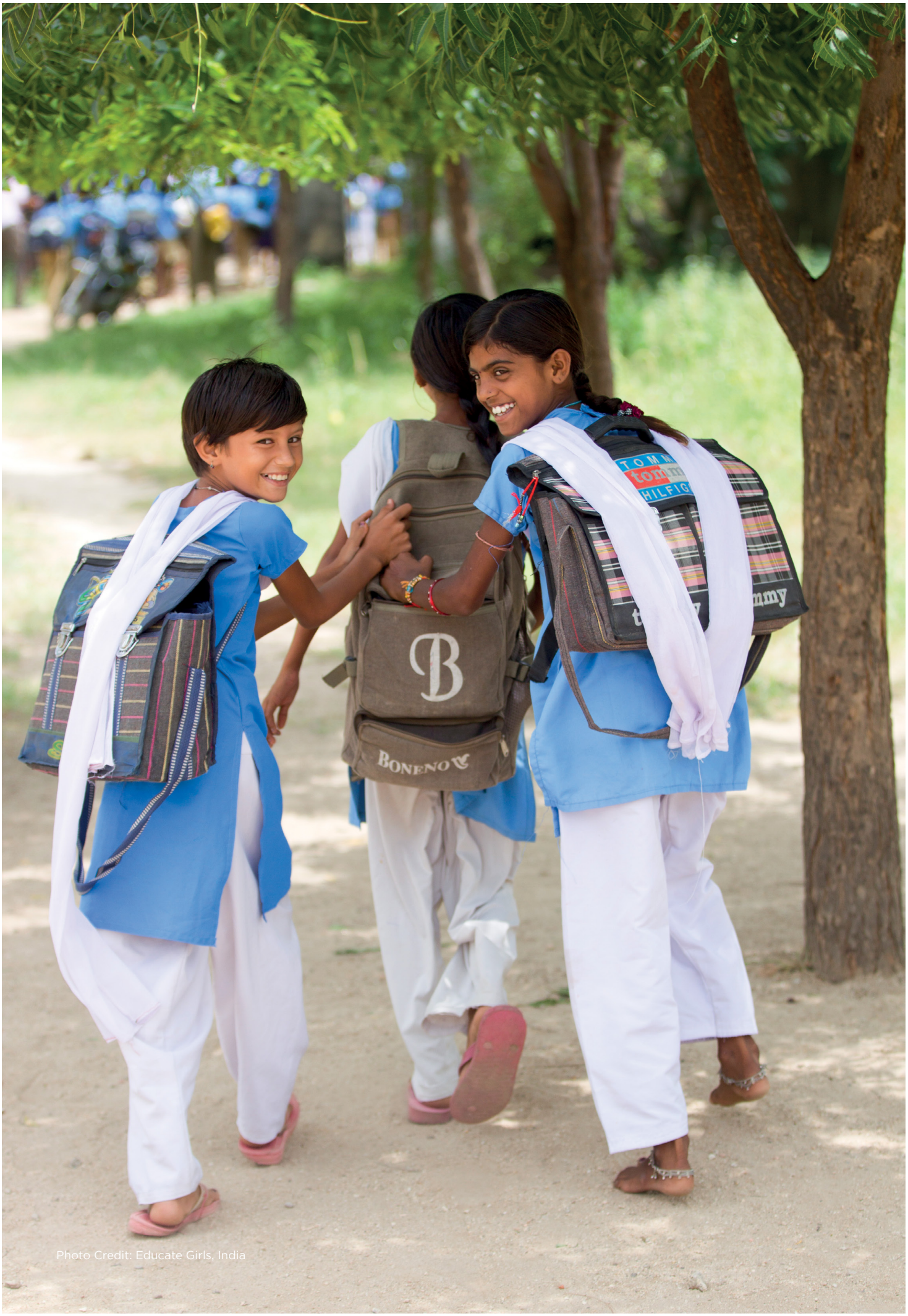

Photo Credit: Educate Girls, India

CONCLUSION

To conclude, we review the key insights that partners shared about their implementation approaches during school closures, discuss how these findings resonate with literature and highlight effective practices important in going forward. We lay out these summary points by research question.

Research Question 1 examined the approaches that partners took to provide learning opportunities to vulnerable children without the internet during school closures. Ultimately, partners employed a variety of different low- and no-tech options, including radio, mobile phones, teacher follow-up visits, paper, and locally-made or available learning materials. Partner strategies usually employed a range of both self-learning and teacher-guided approaches. One approach was even limited to using no technology at all—sometimes not even paper—due to COVID-19 restrictions on sharing. Under some approaches, children listened to lessons or completed learning materials at home, whereas others convened in person in small groups under the guidance of a teacher or facilitator. Partners recognised the importance of being able to leverage existing project structures in order to launch these approaches quickly. Consequently, governments may want to work closely with and through civil society—building on their community networks—to mobilise quick responses in emergencies.

Partners also explained that:

- Radio is an effective, low-cost approach (in the long run) with wide reach and strong potential for institutionalisation and could be important to building the capacity of teachers. Damani and Mitchell (2020) echo these insights, citing radio as an affordable means of offering learning opportunities to disadvantaged households without reliable electricity or digital literacy. Moreover, an evidence review concludes that radio can effectively raise learning outcomes in foundational subjects, such as literacy and math, with vulnerable children or to supplement in-school learning and that it is especially effective with younger children and in households with low levels of parental literacy (UNICEF, 2021). At the same time, Damani and Mitchell (2020) caution that the initial costs of radio can be prohibitive and that its cost-effectiveness decreases with smaller target audiences. Radio's utility also depends on their availability. Unsurprisingly, a survey found that students in Tanzania were more likely to participate in radio lessons if they had a radio in their household (Cilliers & Oza, 2021) and in some contexts feature phones are far more common than radio and other broadcast technologies (Chávez, Valenza, Rigole, & Dreesen, 2021).
- At the same time, all partners agreed that there's no replacement for direct, individualised instructional support, especially to maintain engagement and improve learning for the most marginalised. Chávez et al. (2021) note the importance of tailored instructional support for vulnerable populations during the pandemic, citing examples of feature-phone based support, take-home packages, and small learning groups with facilitators, in line with partner approaches. Furthermore, radio alone—without the sorts of additional support many partners employed—is unlikely to be effective (Cilliers & Oza, 2021; Damani & Mitchell, 2020).
- Partner comments point to the need for contextually appropriate solutions. There are no one-size-fits-all solutions to learning during school closures. What makes sense depends on the type of support different children and their families need, what technologies are available, and on the interest and capacity of the government, the partner, and other actors. In keeping with these comments, (Agrawal, Labroo, Singh, & Zacharia, 2020). (Chávez et al., 2021) urge the use of approaches that suit the technologies that are already widely used in a context. Furthermore, many argue that COVID-19 and other emergency learning responses must offer multiple modalities to suit different learner situations and needs, as most partners did (Barron Rodriguez, Cobo, Munoz-Najar, & Sanchez Ciarrusta, 2021; Dreesen et al., 2020; IRC & USAID, 2020; McAleavy, Joynes, Gibbs, & Sims, 2020; Munoz Najar Luque & Oviawe, 2020; Reimers & Opertti, 2021; Santamaria & Reimers, 2020; UNICEF, 2021; Zacharia, 2020a).
- All partners believed their approaches have the potential for use during future COVID-19 waves or other emergencies. Additionally, partners proposed that radio programming could

provide opportunities to reach out of school, reinforce instruction for in-school children, and bolster teacher training. Other approaches, like home-based learning packages, could also play an important role in remediation, for in-school instructional support, as learning opportunities for out of school children, or during emergencies in the future. Indeed, these approaches answer an important call to prepare education systems for future emergencies and to urgently help children catch up on lost learning from pandemic school closures (Chávez et al., 2021; World Bank, 2020).

Research Question 2 considered the perceived impacts of approaches on participating children, parents, and teachers. Partners discussed a range of positive effects:

- Partners observed that children missed out on less learning than initially they feared—and they noted some impressive results on national examinations in spite of the challenging circumstances. However, they concluded that these measures nevertheless remain less than ideal for learning relative to normal educational settings. Partners did note important educational impacts that go beyond learning, especially helping children maintain momentum with and enthusiasm for schooling, in mitigating child protection concerns, and in providing important PPS support during a critical period. Indeed, partner approaches served the important goal of limiting learning loss during school closures, leaving rapid learning recovery as the subsequent goal for school reopening (World Bank, 2020). Learning loss during school closures is to be expected, and, in many places, including across Latin America and the Caribbean, steep losses have been reported, especially for disadvantaged children (World Bank, 2021). At the same time, (Chávez et al., 2021) report that the approaches many partners adopted—e.g., home learning packages and small-group lessons—may provide more tailored support to children than is possible in normal large classrooms settings.

- Partners indicated significant achievements improving parental engagement with children's learning, beyond what they felt would have been possible under normal school circumstances. These results were "the magic that comes out of these challenges" according to one partner [FG2.4]. It would be valuable to harness what worked from this period to involve parents more greatly in the future. Reimers and Opertti (2021) also recognise the central importance of family engagement to the success of remote learning. Similarly, in a randomised control trial of an SMS- and phone-based learning approach in Botswana, Angrist, Bergman, and Matsheng (2021) found improved parental engagement and parental self-efficacy among those participating in the intervention. The authors explained that improvements may have stemmed from the fact that parents often misjudge their children's learning and that the intervention provided the opportunity and information to self-correct their perceptions. Reporting on an earlier round of results, Angrist, Bergman, Brewster, and Matsheng (2020, p. 26) suggest how projects might take action on this finding in the future:

  > *Many schemes exist to facilitate parent and teacher interaction in school systems worldwide already, such as report cards and parent-teacher associations (PTAs). Our results suggest these built-in interaction points in low- or middle-income country contexts - which often focus on providing information on the child's performance - might be substantially enhanced with simple, easy-to-engage learning content that parents can directly engage their child in at home.*

- Partners also recognised capacity-building benefits to teachers from radio programming, a benefit future projects may want to leverage. Damani and Mitchell (2020) share this insight, which they draw from a review of pre COVID-19 evidence on radio education. More generally, many note that teachers—as well as parents—must receive training in order to support children during school closures (Agrawal et al., 2020; Batra, Nangia, & Reimers, 2020; Chávez et al., 2021; Dreesen et al., 2020; Joynes, Gibbs, & Sims, 2020; Kimenyi, Otieno, & Kaye, 2020; Lamba & Reimers, 2020; McAleavy et al., 2020; Miao, Huang, Liu, & Zhuang, 2020; Munoz Najar

Luque & Oviawe, 2020; World Bank, 2020; Zacharia, 2020a). Such training needs are an important consideration for planning future approaches.

Research Question 3 yielded a wide range of enabling factors and challenges that influenced implementation. Concerning human resources, partners mentioned that established partnerships, relationships with experts in learning content development, and government buy-in were critical enablers. In contrast, low initial levels of interest and competing priorities—such as the need for domestic help—on children's time-challenged implementation. Partners also shared themes related to the development of learning content and key implementation processes, which also arose in the literature we reviewed. Specifically, partners explained that:

- Providing short, engaging, fun, and locally relevant lessons aligned with government curriculum facilitated student, community, and government engagement. At the same time, the content adjustments required to adapt curricula for multi-grade audiences, and to convey topics like math, which are more difficult to adapt for new modalities, is a challenge. Several reports reiterate partners' emphasis on making lessons engaging in order to sustain children's interest in education, including—as partners did—by involving children in content development to achieve this (Lamba & Reimers, 2020; Munoz Najar Luque & Oviawe, 2020; Saenz, Medina, & Holguin, 2020). UNICEF (2020a) adds that, like in-school content, alternatives during school closures should emphasise foundational skills though, as partners found, language-related topics are more likely to be taught effectively than math, especially through radio (Damani & Mitchell, 2020; UNICEF, 2021). Reimers and Opertti (2021) also call, as several partners did, for an emphasis on socio-emotional learning. Finally, Barron Rodriguez et al. (2021) reiterate the importance of ensuring that interventions are tailored to the local context, that content is developed to suit diverse needs through Universal Design for Learning principles, and that the curriculum should not only address academic skills but also skills critical in the context of the pandemic, such as socio-emotional skills, self-directed learning, and self-care.
- Partners offered advice on structuring lessons, noting that short lessons are most appropriate for young attention spans. Additionally, flexibly scheduled lessons help families balance competing demands for children's time during school closures. Another structural consideration is the need to launch content as soon as possible after school closures in order to maintain momentum with education, adopting a phased approach to content development if needed (Lamba & Reimers, 2020; Zacharia, 2020b). Otherwise, more children—especially more vulnerable children—may drop out. Although partners did not explicitly note this factor, they did work to deploy approaches quickly. As a final structural factor, single-sex groups might be more culturally appropriate in some contexts and help girls participate (UNICEF, 2021).
- Partners expressed the importance of piloting and ongoing feedback loops in helping them improve content and provide support for attendance and learning challenges. At the same time, piloting and traditional in-person data collection approaches were more difficult, and sometimes impossible, due to lockdown restrictions. Improvements and investments in data collection strategies suitable in emergencies would advance implementation. These points strongly resonate with calls for more and better data to monitor pandemic approaches, especially around learning and equity (Barron Rodriguez et al., 2021; Batra et al., 2020; Chávez et al., 2021; Dreesen et al., 2020; Joynes et al., 2020; Lamba & Reimers, 2020; McAleavy et al., 2020; Reimers & Opertti, 2021). UNICEF (2020a) and Lennox et al. (2021). Some authors, like some EAC partners, also advocate for innovative data collection methods, like telephone-based assessments, to improve monitoring and learning.
- Partners also explained that deliberate efforts by partners to share their approaches facilitated institutionalisation and expanded reach, sometimes substantially, suggesting

that seeking opportunities to disseminate and advocate for an approach make a difference. Lamba and Reimers (2020) agree that sharing with local community leaders, government officials, and others is important to improving reach.

- Partners shared that reaching very marginalised children, especially out of school children and children with disabilities, was critical but very difficult during the pandemic, because it was harder to provide the in-person support that is so vital to reaching these populations. Partners also noted a need to help address cultural norms that might depress participation for girls (e.g., related to housework) and boys (e.g., related to farm work). Many echo the need to support these and other vulnerable groups (McAleavy et al., 2020), with Kaiser Schuster, Ringe, and Reimers (2020) drawing attention to the needs of linguistic minorities, for whom radio broadcasts or other resources may not be developed, as well. To begin to address the needs of some of these learners, Chávez et al. (2021, p. 1) state that "specific pedagogical training is urgently needed to equip teachers and families with the tools to effectively support remote learning for children with disabilities," and UNICEF (2021) outlines strategies for implementing education that is sensitive to girls needs during the COVID-19 emergency. Helping to equalise opportunities for vulnerable groups continues to be an area of great need, one exacerbated during the pandemic, as partners duly noted.

Finally, **Research Question 4** documented partner reports on the added value of collaborating with EAC and recommendations to improve future partnerships. Partners all expressed gratitude for the opportunity to partner with EAC and pointed to several areas that helped them effectively provide education opportunities during pandemic school closures. For example, partners appreciated the flexibility to adapt their interventions and especially the opportunities for "thinking outside the box." They also praised EAC's open-mindedness, supportive guidance, and flexibility with performance metrics. Partners valued—and seek more opportunities—for sharing with other partners. In terms of potential areas for improvements, some partners suggested more timely guidance and clearer budget guidance would help. Lastly, they recommended that future projects focus on supporting emergency preparedness, especially for Ministries of Education and Education Departments.

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APPENDIX

APPENDIX A: LITERATURE SEARCH

Table 9. Websites reviewed for the literature search

Organisation name
3iE
Centre for the Study of African Economies
COVID-19 Global Education Recovery Tracker
EdTech Hub
International Journal of Educational Development
Journal on Education in Emergencies
J-PAL
Results for Development
RISE
UNESCO
UNHCR
UNICEF
UNICEF Office of Research-Innocenti
USAID
World Bank Group

Table 10. Inclusion criteria for publications identified during the literature search

Geographic focus
Low and lower-middle-income countries
Types of publications
Gray literature/reports, journal articles, research/policy briefs
Population
Children of any age attending primary school or equivalent programmes
Timeframe
Approaches tested during the current pandemic
Approaches
Ones used with disadvantaged children, especially those used with (or potentially usable by) children without internet access

APPENDIX B: DETAILED OVERVIEW OF PARTNER APPROACHES

Alight (Pakistan)

The Muallim Radio Programme

Main technology	Main modalities	Reach
Radio	*Low tech, self-learning*	*5,000,000*

Background

During COVID-19 school closures, the Government of Pakistan prioritised televised education broadcasts as a means of meeting children's learning needs. Because many households do not have televisions or sufficiently reliable electricity to power them during broadcast periods, Alight recognised a need for an alternative approach to reach vulnerable learners [PD.4, PD.2]. They deemed radios a promising technology because radios are relatively affordable and already widespread in Pakistan, and because cell phones can also broadcast radio programmes in Pakistan without the need for internet connections [I.2, FG1.2].

Description of approach

In April 2020, one month after lockdown, Alight launched the Muallim Radio Programme, benefitting from additional financial support from the Central Asia Institute to do so. The radio lessons shared government curriculum content in a variety of subjects, including Math, Urdu, Islamic/religious values, COVID-19 safety, and ethics, among other topics [PD.4, PD.2, PD.3]. Each episode ran 45 minutes, with a maximum of 7-8 minutes per subject in each lesson, and presented content through games and activities. Alight developed 30 episodes for Grades 1-3 and 40 for Grades 4 and 5 [S.2b].

They broadcast to the Gilgit-Baltistan region after an initial pilot phase. The lessons garnered the attention of BBC, which produced and aired a documentary about the radio lessons across Pakistan and parts of India, with this publicity helping to build momentum behind the approach. Ultimately the national government picked up the radio lessons and rebroadcast them across Pakistan multiple times [I.2, PD.4].

Key implementation insights

First, through the process of piloting, Alight learned that shorter lessons and more engaging, game-based content better engaged their target audience. Additionally, Alight ultimately determined that to deliver content to children of different ages and grades, lessons should progress from easier to more difficult content concept-by-concept, e.g., starting with the basics of addition, which was new to some listeners and review for others, and progressing to more advanced addition concepts to ensure diverse learning needs were met [I.2, PD.4, FG1.2]. Second, Alight emphasised the importance of developing agreements with multiple radio stations, especially government stations, to boost the reach of radio [I.2]. Third, emergency situations require creative technological solutions in order to launch programmes as quickly as possible. Initially unable to convene in groups or access traditional recording equipment, Alight recorded radio lessons over mobile phones at first [FG1.2, PD.4].

Finally, Alight highlighted that government involvement—and efforts to actively cultivate that involvement—was critical to their success. Not only was the government involved with content development and broadcasting, but the government made listening to radio lessons mandatory for both teachers and children. To build government ownership, Alight involved government education officers in monitoring activities. The officers collected weekly response forms from teachers. These response forms served two purposes: they provided a check that teachers were listening to radio lessons and collected feedback that could be used to improve lessons. Ultimately, active and continuous government collaboration helped to build government interest in and capacity with radio education [I.2, FG1.2].

Small-group learning sessions

	Main technology *Paper/printed materials*	**Main modalities** *Low tech, teacher-guided*	**Reach** *81,736*

Background

Recognising that radio lessons alone were insufficient to engage children over Pakistan's repeated lockdowns, Alight also developed workbooks to help beneficiaries continue to study at home. These workbooks were used in conjunction with small-group learning sessions with teachers [S.2a].

Description of the approach

Under this approach, groups of approximately five students attended school for an hour of instruction with their teacher. At home, children practised content with workbooks designed specifically to accompany this revised, abbreviated pandemic curriculum. The workbooks were approved by the government, and the content was aligned with the national curriculum and designed to equip children with the knowledge they needed for promotion to the next grade [I.2, PD.2].

These sessions, while still abbreviated relative to normal lessons, allowed for deeper content coverage and more teacher-guided interactions than radio lessons. While the radio lessons provided low-cost learning opportunities to many and, in doing so, filled a vital gap, Alight believes that the greater teacher-child engagement from the small-group approach made it more effective, if more challenging to scale [FG1.2, I.2].

Key implementation insights

First, Alight observed that bringing very small groups of children together helped teachers manage social distancing [I.2]. Second, as with the radio approach, dissemination and sharing helped this approach reach more children: The workbooks were ultimately adopted by several other organisations, including UNICEF, and the government. Through these indirect channels, over 80,000 children have used the workbooks during the pandemic, exceeding the 2,500 children directly targeted by Alight [I.2]. Third, as with radio content, the direct link between the pandemic lesson content and government standards and assessments incentivises government interest and children's participation, as parents want their children to keep up with the government curriculum [I.2, FG1.2, PD.2].

BRAC (BANGLADESH)

	Main technology *Feature phones*	**Main modalities** *Low tech, teacher-guided*	**Reach** *69,371*

Background

During school closures, the Government of Bangladesh broadcast lessons over television. Given the limited reach of this televised instructional content—just over half of the country has television access, with access rates even lower in rural areas—BRAC devised an education solution relying on feature phones, which a survey indicated were nearly universally available to families. This approach allowed BRAC to better reach their project beneficiaries, who are disproportionately from disadvantaged backgrounds, though cellular network coverage during monsoon season was sometimes a challenge [I.6].

Description of the approach

Under the approach, which was named 'Home School,' teachers led groups of 3 to 4 children in twice-weekly lessons lasting 20 minutes each. The lessons took place via conference call on a parent's (or neighbour's) phone and focused on psycho-social well-being, COVID-19 awareness and safety, language, and math. At times when lockdowns were sufficiently relaxed, teachers also made brief home visits to children each week to help children with challenges and coach parents on supporting their children's learning, adhering to safety protocols during visits. To gauge learning progress, parents conducted assessments designed by BRAC with their children [PD.6, PD.7, I.6].

To implement the approach, the BRAC team (a) developed the lesson content, adapting and supplementing the national curriculum to do so; (b) trained teachers in phone-based delivery; (c) and educated parents on accessing the calls and content and engaging their children in the educational content delivered. The project also paid for the air time associated with calls and facilitated the conference call connections [I.6].

The pandemic has caused people to pay more attention to urgent environmental issues like climate change and global warming. Even before the pandemic, BRAC highlighted the need to make the next generation ready for combating the consequences of climate change and transforming toward a sustainable future through including Climate Change and Environmental Education into the curriculum.

In 2020, BRAC conducted an evaluation to understand the importance of environmental and climate related education among the students of BRAC schools and, based on the results, BRAC incorporated climate change and environmental awareness education into Home School's contents in order to raise environmental awareness, increase ecological knowledge, and develop the attitudes and values necessary so that students can take the actions required to improve the environment. To increase 'climate literacy' among the communities, BRAC also took initiative to disseminate climate change awareness information among the parents using mobile phones. Teachers conducted a parent-teacher meeting on climate change issues over the phone with 27,000 parents of grade 4 (750 schools) and grade 5 (400 schools) students.

Key implementation insights

First BRAC, like other partners, emphasised that piloting and adaption processes were especially important given how new these approaches were and how quickly they needed to be launched. For BRAC, a month-long pilot in 50 schools led them to increase instructional time and adjust lesson content, especially around math delivery. BRAC also indicated the importance of more closely involving parents and of introducing home visits by teachers, which were possible when lockdowns relaxed [I.6, PD.7]. In short, children, especially vulnerable children, and their families benefit from in-person support, even short visits. Finally, assessments allowed parents, teachers, and BRAC to better understand and support individual learning needs: This addition of assessments during implementation facilitated implementation and is an area that BRAC would like to explore additional strategies for [I.6]

EDUCATE GIRLS (INDIA)

	Main technology *None (even sharing paper/printed materials with children sometimes not allowed under COVID-19 restrictions)*	**Main modalities** *No-tech, teacher-guided*	**Reach** *200,000*

Background

In India, extended school closures lasting 18 months severely constrained learning opportunities for vulnerable youth. Considering the very limited access their beneficiaries have to smartphones and the reported effectiveness (and cost-effectiveness) of community-based learning approaches, Educate Girls decided to implement learning camps during school closures [PD.15, PD.14].

Description of the approach

For use in community-based camp settings, Educate Girls transformed its normal school-based curriculum, abridging content for shortened instructional time, eliminating the use of paper and printed materials (which could not be shared under COVID-19 restrictions), and introducing more activities to boost interest and engagement. Although learning and instruction was an important focus in these camps, the primary goal was to provide youth with safe, positive spaces to stay connected with their studies, and a study the project conducted found that parents consistently believed that the camps helped youth do so [PD.14, PD.15, PD.13]. Additional support, including distributing COVID-19 relief packages, was given to particularly marginalised families [I.4].

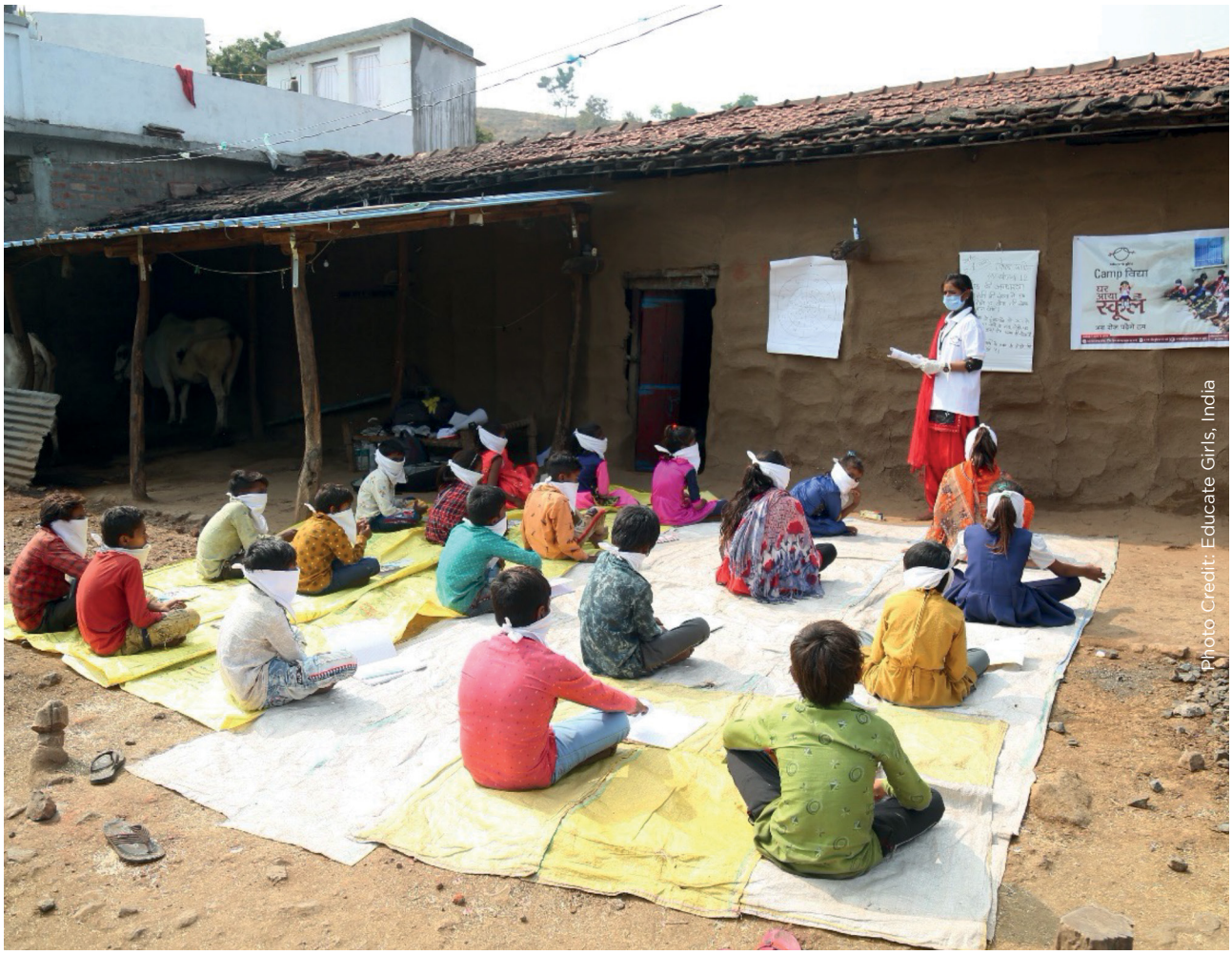

Photo Credit: Educate Girls, India

Educate Girls secured government permission to host camps and then launched this approach, called Camp Vidya (Camp of Knowledge), in September 2020 [PD.15, PD.11]. Educate Girls also trained camp facilitators, conducting online training over smartphones during periods when in-person training and coaching were not possible. The camps convened girls and boys aged 8-10 in groups typically ranging from 12 to 15 in size, following COVID-19 safety protocols during meetings. Each camp lasted four weeks, with four two-hour sessions per week. Instruction focused on Hindi literacy, math, and other topics. Learning was assessed using the Annual Status of Education Report (ASER) assessment [I.4].

Key implementation insights

First, piloting and ongoing learning and adaptation led to continuous improvements in the design of the camps, with changes made to improve the accessibility of instructional content, for example. Without being able to rely on traditional classroom materials, refinements were especially needed for math delivery [FG2.4, I.4].

Photo Credit: Educate Girls, India

Second, Educate Girls found it valuable to continually build in more activities to engage participants, with this a particularly important addition given the absence of materials but also as a strategy to sustain interest in and commitment for schooling [I.4]. Indeed, for Educate Girls and other

partners, the ultimate goal was to improve the odds of youth returning to schools once schools reopened. Finally, sensitisation campaigns were critical. The project needed to sensitise families about the existence of the camps and their value to children to improve enrolment. In-person outreach, which was not initially possible during lockdown, was important, especially to reach families with out of school children [FG2.4].

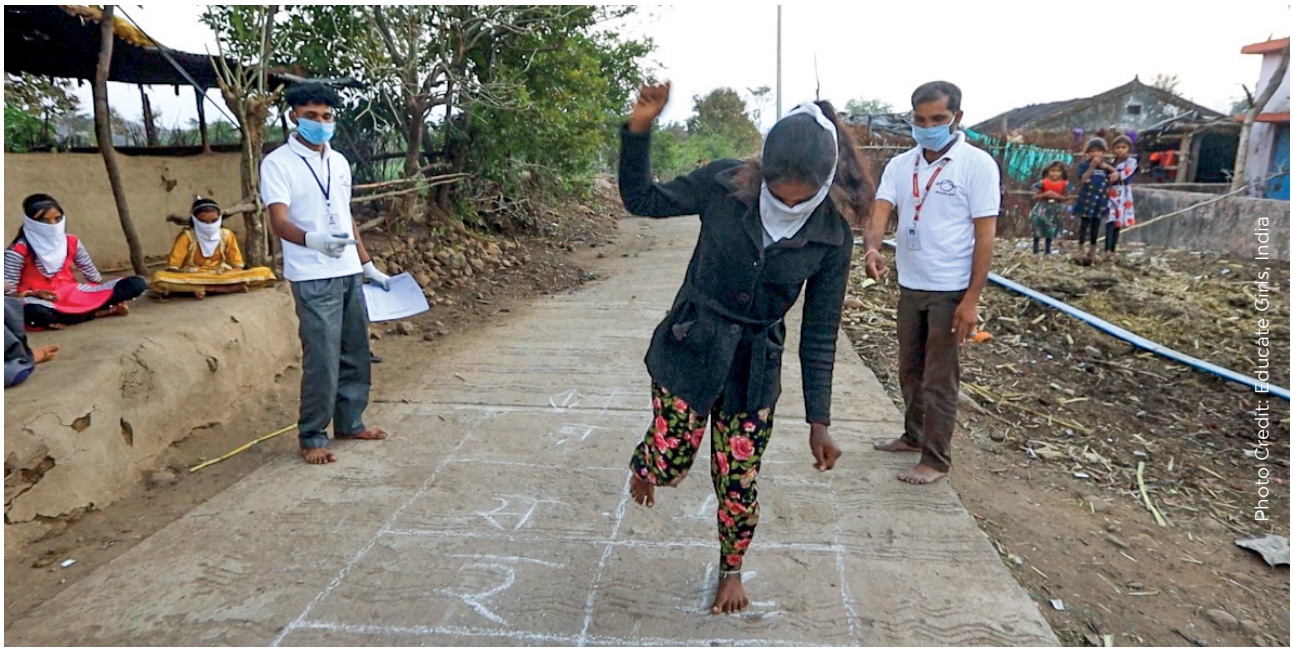

Photo Credit: Educate Girls, India

GIRL CHILD NETWORK (KENYA)

	Main technology *Radio (with facilitator in small student clusters)*	**Main modalities** *Low-tech, teacher-guided*	**Reach** *15,337*

Background

The Government of Kenya supported remote learning over the internet, television, and radio during prolonged school closures lasting until January 2021. Yet even radio programming was inaccessible to some of the vulnerable children that Girl Child Network (GCN) targets, leading GCN to adopt a community-based learning approach to better support their beneficiaries from April through December 2020 [I.3, S.3].

Description of approach

The GCN 'Home School' approach brought small, multi-grade groups of primary-school-aged children together to learn. To implement this approach, the project leveraged community structures—i.e., pre-existing clusters of approximately 10-15 neighbouring households under Kenya's Nyumba Kumi system—and project structures—i.e., community facilitators, who led instruction for home school clusters, and village tracking committees, who supported community sensitisation campaigns, parent engagement, and attendance tracking [I.3., PD.16, PD.18]. The approach utilised government radio broadcasts, ensuring that a radio was available from the community or provided by the project for this purpose and supplementing these government lessons with project-developed content and locally improvised learning materials [S.3]. Home School clusters were held in a variety of community spaces, including religious buildings, community halls, and shaded outdoor spaces, and the project sought

to uphold COVID-19 protocols in order to bring children together as safely as possible during the pandemic [S.3, PD.18].

Under the GCN approach, parents and older siblings reinforced learning from daytime group sessions with additional educational support on evenings and weekends. Community facilitators and village tracking committees provided ongoing training and coaching support to families to help them engage their children in learning. GCN also provided solar-powered lamps to facilitate evening study sessions. Even now that schools have reopened, the project continues to help families support their children's learning at home during evenings and weekends, through a scaled-down version of the home school approach [I.3, FG1.3].

Key implementation insights

GCN pointed to several critical lessons from their experiences implementing this approach. First, parental engagement in children's learning is critical. They observed that the home school approach was an opportune moment to more closely involve parents and families because parents understood that, with schools closed, learning would not happen without their involvement. GCN harnessed this potential through coaching, and parents increasingly recognised a role for themselves in their children's education, such as by tutoring their children, following up on their attendance and achievement, or supplying classrooms with improvised learning materials. This heightened engagement has outlasted school closures. Second, the improvised materials used by the project—often real objects collected from the community or objects observed in nature—were useful not only as a stopgap substitute for traditional learning materials in schools, but they helped both children and their families see the learning potential of their environments. As a result, the project has continued to support the use of improvised materials. Finally, the existing grassroots structures comprised of community facilitators and village tracking committees helped GCN launch the homeschooling efficiently. While these structures—and GCN's pandemic home school approach more generally—have garnered government attention, institutionalising these grassroots structures would require a greater investment of government resources [I.3, FG1.3].

PLAN INTERNATIONAL AND STRØMME FOUNDATION (MALI, NIGER)

	**Main technology** *Paper/printed materials*	**Main modalities** *Low tech, self-learning (with facilitator support)*	**Reach** *9,660*

Background

Schools closed in Mali and Niger in March 2020, opening approximately two months later in June. To support learners enrolled in non-formal accelerated education centres called Speed Schools the Primary School Access through Speed Schools (PASS+) project implemented by Plan International and the Strømme Foundation prepared educational booklets that were shared with students [S.5]. The project recognised that such an approach could be launched quickly and might be better suited to the learning needs of the students than traditional remote learning approaches, such as radio [FG2.5].

Description of approach

The PASS+ booklets were developed by education specialists and reviewed by country Speed School structures within the Ministry of Education. With school closures occurring at the end of the academic year and the ultimate goal of helping children maintain continuity with their education, the project decided to focus on reinforcing students' prior knowledge rather than introducing new content so as not to overwhelm learners and their families [PD.20]. The booklets were designed to be accessible and intuitive, providing approximately two hours of homework to participating children daily in French, math, and civic education. The booklets also incorporated activities designed to provide psychosocial support [S.5, I.5, FG2.5, PD.20].

Through NGOs and community structures, PASS+ distributed the booklets to learners and provided an orientation to families on their use, preparing even illiterate parents with strategies they could use to support their children's learning processes. Critically, follow-up visits by SSA/P teachers helped ensure that children received the support they needed, with children who needed extra support, such as some children with disabilities, receiving more frequent visits [FG2.5, I.5, S.5].

Key implementation insights

PASS+ offered several insights into implementation. First, the project emphasised the importance of developing booklet content with a gender lens in order to be inclusive. Relatedly, they stressed that sensitisation efforts with households should account for gender-specific challenges, such as pressure for girls to support with childcare or household chore, or for boys to work in the field, which leaves them less time for learning at home [PD.20, FG2.5]. Second, PASS+ emphasised the strategic value of hard copy materials over technological solutions for the context they work in [I.5], explaining that:

> *The development of hard copy resources may be the fastest educational response for contexts where most students do not have access to the Internet, telephone, or other technologies. It can be achieved relatively quickly while being tailored to the knowledge and needs of specific groups of children (democratic and equitable) [PD.20, p. 36].*

Third, the project pointed to the importance of using flexible learning approaches to ensure there is a fair balance between children's learning time and the support needed by their families at home with housework or income-generating activities. Fourth, the booklet content was simple and easy to follow and use, prioritising building on prior knowledge rather than new knowledge [PD.20, FG2.5]. Finally, timing matters and the project observed that this approach suited a short lockdown at the end of the year, but may not be appropriate or sustainable for longer lockdowns.

UNICEF (NIGERIA)

Main technology	Main modalities	Reach
Radio	*Low tech, self-learning*	*1,027,181*

Background

Because much of the Nigerian population UNICEF serves lacks the internet, devices, and electricity needed to connect to e-learning or government television lessons, UNICEF turned to radio to broadcast education programmes during COVID-19 school closures [PD.24]. UNICEF felt this approach fit the context well given widespread use of solar-powered radios and government enthusiasm for the approach [I.1b, I.1a].

Description of approach

The UNICEF programme adapted the government Primary Grades 1-3 curriculum, delivering lessons in numeracy, literacy, and basic science. The full programme provided four months of daily broadcasts, with the government donating air time in one state and offering reduced rates in others. In designing its programming, UNICEF sought not only to capture the attention of children but to engage parents in their children's learning process [PD.25, I.1b, I.1a].

As a self-directed learning format, radio required UNICEF to follow up with children through other means to monitor their learning. In particular, the UNICEF platform U-Report was leveraged to survey children's content knowledge weekly via SMS. UNICEF also encouraged teachers to follow up directly with children and provide additional support for any children struggling [I.1b, I.1a].

Key implementation insights

First, UNICEF observed the importance of strategies to improve the reach of radio lessons. They sought to improve access to radio content in several ways where radio access was a challenge. For example, households without radios were given copies of the radio lessons on Secure Digital (SD) cards that could be used with cell phones, allowing children to listen through alternative means. In other cases, households own radios but they were being taken for parents to listen to during agricultural activities, meaning children could not access them for lessons. UNICEF also ran sensitisation campaigns encouraging children from multiple households to listen together (while abiding by COVID-19 safety advice) or for households to leave radios at home during the day [I.1b, I.1a]. Second, close collaboration with the government facilitates institutionalisation, and UNICEF worked from the outset to help the government pursue an approach with local resonance [I.1b, I.1a]. Finally, as other partners did, UNICEF refined its content over time, drawing on insights from weekly feedback sessions with children, parents, and experts. For example, UNICEF reported that having a few children involved in the recording session to simulate a classroom setting—was a crucial improvement. U-Report, an innovative feedback mechanism, also allowed UNICEF to understand where additional content support was needed among learners. In short, not only is learning and adaptation important, but a layered monitoring approach helps facilitate these processes [S.1, I.1b, I.1a].

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