Maintains

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services to adapt to shocks

Rapid Literature Review: Education

COVID-19 Series

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About Maintains

Maintains aims to save lives and reduce suffering for people in developing countries affected by shocks such as pandemics, floods, droughts and population displacement. This 5-year programme, spanning 2018-2023, will build a strong evidence base on how health, education, nutrition and social protection can respond more quickly, reliably and effectively to changing needs during and after shocks, whilst also maintaining existing services. Maintains will gather evidence from six focal countries — Bangladesh, Ethiopia, Kenya, Pakistan, Sierra Leone, and Uganda — to inform policy and practice globally. It will also provide technical assistance to support practical implementation.

Maintains is funded by UK Aid from the UK government and implemented through a consortium led by Oxford Policy Management (www.opml.co.uk). For more information about the programme, visit Maintains Webpage and for any questions or comments, please get in touch with maintains@opml.co.uk.

Table of contents

1   Introduction

In the wake of the COVID-19 pandemic, education provision has been disrupted at an unprecedented scale. According to the collated figures from 4 April 2020, 1.58 billion learners globally have been affected directly, which amounts to 91.3% of total enrolled learners, as a result of country-wide school closures in 188 countries (UNESCO Institute of Statistics, 2020).

This literature review draws lessons from the global experience on the direct and indirect impacts of a pandemic like COVID-19 on education systems. Outbreaks of Ebola, severe acute respiratory syndrome (SARS), H1N1, and Middle East Respiratory Syndrome are the most likely comparators to COVID-19, with the Ebola crisis in 2014/15 the latest and most deadly epidemic.

Joe Hallgarten has conducted an extensive review of this literature for DFID recently, so this report draws primarily and substantially from that work (Hallgarten, 2020).[1] This review summarises the key findings and draws out the implications for COVID-19.

At the outset, it is important to highlight some key features of the current crisis:

1) **No other disease, including Ebola, has had as much of a devastating effect as COVID-19.** Although less fatal than Ebola, COVID-19 transmission is asymptomatic, more widespread, and rapid. **The impact of COVID-19 is global**, with cases reported in more than 90% of UN member states as at 2 April 2020 (BBC, 2020).
2) **There is limited evidence to guide action.** The vast majority of the relevant literature on low- and middle-income countries relates to the Ebola outbreak of 2014/15 (Hallgarten, 2020). There is very limited evidence on the impact of disease outbreaks on education systems. Several reports provide guidelines and recommendations, but 'these are rarely based on evidence of impact of particular interventions, or on evidence of the impact of different approaches to action, co-ordinations, funding or prioritisation' (ibid.: 2). As a result, drawing out evidence and lessons from past contexts to inform this situation is challenging.
3) **The evidence from Education in Emergencies could be useful in these contexts.** Although this review is limited to the education response during disease outbreaks, literature from education in emergency contexts could nonetheless provide relevant evidence on service provision during times of protracted, widespread crisis.[2]

The structure of the report is as follows. First, we assess the impact of past disease outbreaks on education systems, focusing primarily on the Ebola experience. Second, we review the experiences of governments and education systems in relation to the response, recovery, and reform phases of disease outbreaks. Where appropriate, we link these findings to the current COVID-19 situation. We then highlight the key gaps in the literature

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[1] The focus of the Hallgarten review was identical to this assignment for Maintains, so we have decided to rely on the review findings instead of duplicating efforts. We have discussed and agreed this with the author of the initial review, which was also commissioned by DFID.

[2] The Inter-agency Network for Education in Emergencies (INEE) provides some useful resources to facilitate further thinking in this area. See: https://inee.org/collections/coronavirus-COVID-19.

and draw out implications for the current pandemic. Finally, we conclude with some recommendations for further technical assistance.

2   Impact on education

The Ebola crisis of 2014/15 'killed more than 11,000 people, caused economic and social disruption in a massive scale, and left tens of thousands of children orphaned' (Powers & Azzi-Huck, 2016). Education in Sierra Leone, Liberia, and Guinea was affected tremendously, and schools were closed for six to eight months at the height of the epidemic, leaving 5 million children without access to learning (World Bank, 2015a). The health system was overwhelmed, and the wider economy suffered greatly. The estimated GDP losses for the three countries totalled US$ 2.2 billion (US$ 240 million for Liberia, US$ 535 million for Guinea, and US$ 1.4 billion for Sierra Leone) in the first year alone (World Bank, 2015b).

This wider context is particularly important, as the education response occurs not only in relation to the disease outbreak but also within a socio-political reality that has been completely affected. During a pandemic, the first priority is the health and wellbeing of children, even in an education context.

The immediate education response during an epidemic caused by an infectious disease has been to close schools as a measure to curb the spread of the disease. Movement restrictions and the diversion of resources to other sectors or responses also affect the availability and accessibility of schooling.

According to a recent systematic review (Viner, et al., 2020), **it is unknown at this point whether school closures are an effective measure for transmission control during a coronavirus outbreak, as no studies so far have specifically examined the effectiveness of school closures during a coronavirus outbreak.** There is some evidence to suggest that school closures can be effective during influenza pandemics in some condition, although Minardi *et al.*'s review of 79 papers found no consistent effect of school closures (Minardi, Hares, & Crawfurd, 2020). The review found that incidences frequently decline after school closure and that the effect was sometimes reversed when schools reopened—suggesting a causal role for school closure during influenza pandemics. However, since schools tend to close at a later stage of the outbreak, and closures are implemented concurrent with other interventions, it is not always clear how much school closures themselves contribute to incidence reduction (ibid.). **The relative benefits of closing individual schools compared to more widespread closures at the local or national level has not been widely studied.**

School closures have adverse effects on children in the short and long term. **Approximately 5 million children missed school during the Ebola outbreak** (Fisher, Elliot, & Bertrand, 2018). **Although the literature generally agrees that 'knowledge loss, reversal in literacy, and interruption of the development of children was the main consequences of school closures', the lack of reliable measurement has meant that it has been difficult to document empirically the exact extent of learning losses as a result of the Ebola outbreak** (ACAPS, 2016, p. 29). We are not aware of any work that has been done to establish the impact of Ebola, or the impact of recovery-related interventions, on learning outcomes.

Exacerbating the effects of school closures, it has been found that **fear and stigmatisation had a negative impact on re-enrolment rates** (UNESCO Institute of Statistics, 2020). In

Sierra Leone, around 8,000 'Ebola orphans' faced particular difficulties in returning, and many more faced stigmatisation through parental loss or through surviving the disease themselves (Government of Sierra Leone, 2015). Girls who became pregnant during Ebola were often stigmatised (Minor, 2017). In addition, in-school social distancing-related policies sustained during recovery (where followed) reduced the recommended number of students per class, leading to further dropouts or increased admissions to private schools, as did some increased migration to the cities, which have more limited capacity in public schools (Santos & Novelli, 2017).

Furthermore, across all countries impacted by the Ebola outbreak, schools that had been closed or had been sequestered for disease control purposes faced damage and maintenance issues (ACAPS, 2016). When school rebuilding took place, pressure was applied by funders and government to 'focus on quantity, not quality' (Adams, Lloyd, & Miller, 2015, p. 40).

Aside from the direct effect on learning, the Ebola outbreak had numerous indirect effects. In addition to school closures, restrictions on public gatherings reduced children's opportunities for play and socialisation (Fisher, Elliot, & Bertrand, 2018). **Along with other disease controls, school closures can have a negative impact on children's physical and mental health** (Brooks, et al., 2019; Wang, Zhang, Zhao, Zhang, & Jiang, 2020). Children, especially those quarantined, suffered from social isolation and post-traumatic stress (UNESCO Institute of Statistics, 2020; Wang, Zhang, Zhao, Zhang, & Jiang, 2020). In Sierra Leone, children reported greater levels of corporal punishment from parents, as well as greater personal and family frustration (The Alliance for Child Protection in Humanitarian Action, 2018).

Child protection challenges increase as a result of school closures and the overall crisis. During the Ebola crisis, more than 30,000 children were orphaned in the three most-affected countries (UNDP, 2015b).

School closures and the other impacts of disease outbreaks have a disproportionately negative impact on the learning, safety, and wellbeing of the most vulnerable children in the poorest families. As well as being more likely to die or have a family member die, they are likely to be learning less, eating less, and subject to other safeguarding issues and high-risk behaviour (WHO, 2009; Azzi-Huck & Shmis, 2020).

Female pupils also bear a greater negative cost of outbreaks. During Ebola and other disease outbreaks such as Cholera, increases in sexual exploitation, sexual abuse, teenage pregnancy, and early marriage occurred (Denny, Gordon, & Ibrahim, 2015; Fraser, 2020; UNDP, 2015b).

There is no evidence that public school teacher salaries were affected during the Ebola crisis, although some teachers are reportedly affected by stigmatisation when schools reopen (ACAPS, 2016)**.** Some teachers in private schools, especially Liberia, did lose employment. Many others sought additional employment during school closures to make up for other losses in family or community earnings (Global Business Coalition for Education, 2014).

3   Response

This chapter focuses on the response phase for education following disease outbreaks, which corresponds to the current phase of COVID-19 at the time of writing (April 2020). The first section draws lessons from previous disease outbreaks, focusing on education response in relation to coordination, distance and blended learning, secondary effects of school closures, and support for teachers. The second section then draws out the emerging lessons from COVID-19 in this phase.

3.1   Lessons from previous disease outbreaks

In the face of significant health and economic challenges, education is rarely prioritised in mitigation responses. Investment in the education system may also be diverted to the response (Rohwerder, 2020).

For example, during and after closures, many teachers' roles were diverted towards disease control and social mobilisation activities. During the Ebola outbreak in Sierra Leone, this was estimated at 7,000 teachers. In Liberia, 5,884 teachers – about 18% of the total – were involved in health awareness and social mobilisation workshops (Santos & Novelli, 2017).

Schools and their non-teaching resources are also diverted toward additional or alternative activities. During the Ebola outbreak in Sierra Leone and Liberia, schools were used as focal points and data points to address and understand the infection rates (Azzi-Huck & Shmis, 2020). Schools were given additional responsibilities around disease-related student and teacher learning, provision and distribution of water, sanitation, and hygiene (WASH) and other materials to mitigate transmission in and beyond schools (USAID, 2020).

3.1.1   Education sector response and coordination

Education responses can suffer from a lack of integration with broader responses. In Sierra Leone, the Education in Emergencies Taskforce did not include any formal linkages with other responses and was poorly resourced by donors in comparison with other aspects of the response (Folan, 2015; Hird & Linton, 2016).

A recent blog on managing education systems during COVID-19 suggests that governments and donors should consider how non-fixed costs can be redeployed to 'keep education moving' (Mundy & Hares, 2020). However, in the rapid onset of the Ebola crisis, redeployment of resources appeared only to take place from education to health, rather than within education.

The research synergies and programmatic linkages between education in emergencies and education in disease outbreaks remains weak. The INEE minimum standards, while written with conflict and natural disaster in mind rather than disease outbreaks, provide potentially relevant frameworks for prioritisation and implementation. However, Hallgarten's review found no documentation of whether these standards have been used to inform responses to disease outbreaks. In addition, there remains a lack of

empirical evidence on the educational impact of applying one or more of these standards to emergency situations (INEE, 2014).

3.1.2 Responses to avoid loss of learning: distance learning and blended learning

When schools have been closed during disease outbreaks, a common response has been for governments and education programmes to seek to keep children learning through the distribution of learning materials to children's homes, blended learning, and distance learning approaches. Even if some of these programmes are not successful in improving learning outcomes, they serve an important function for children to maintain a connection with education, especially during a time of crisis.

Minimal evidence exists on approaches to support at-home learning through the distribution of paper materials, or the impact of these approaches. For instance, the only evidence Hallgarten found of schools or districts lending books, textbooks, or writing materials to children and families was framed in negative terms, as children reported that materials allocated to them for home learning were often used by other family members for other activities (ACAPS, 2016).

During the Ebola outbreak, lower-tech solutions, especially radio broadcasts, were used across all affected countries, with some demonstration of impact:

- The Emergency Radio Education Programme, commissioned by the Sierra Leonean Ministry of Education, Science and Technology provided programming in core academic subjects across age groups. Focus group-based evaluation reported that, while there were differences in terms of rural and urban access and participants felt that the programmes did not adequately compensate for the loss of access to schools and teachers, it helped sustain a connection to education (Powers & Azzi-Huck, 2016).
- Also in Sierra Leone, an existing programme was rapidly adapted to incorporate radio-based learning opportunities. In Kailuhun, one of the poorest districts in Sierra Leone, with very high infection rates, an existing project 'Getting Ready for School' was rapidly redesigned to become a radio programme *Pikin to Pikin Tok* (Child to Child Talk). Delivered by a partnership between UK-based Child to Child and local NGO Pikin-To-Pikin, 36 existing 'young facilitators' created content in three languages. Radios were distributed to another 252 facilitators, who created listening groups. Overall, the programmes reached an audience of 137,000. Working with national agencies and local leaders ensured strong buy-in at all levels, and the content was gender-responsive. The final evaluation showed high levels of child engagement and strong agreement from adults that the programming had contributed to children's learning (Institute for Development, 2016). Children could also recall many of the key messages from the programmes. The programming has continued since the conclusion of the project in 2016, with radios allocated to reopened schools (Barnett, van Dijk, Swaray, Amara, & Young, 2018).

This case study has potential broader lessons in that it 'illustrates how investment in smaller organisations, already operating successfully and which have built relationships of trust with their communities and authorities, can produce results during and after a humanitarian crisis' (Barnett, van Dijk, Swaray, Amara, & Young, 2018, p. 128).

There is very limited evidence that online learning, or screen or mobile-phone based technologies, played a role in supporting at-home learning during the Ebola outbreak.
Save the Children's review of education technology in school systems facing protracted situations or crises, including post-conflict, found that the general dearth of high-quality impact evidence, especially in at-home interventions, is amplified in such contexts (Tauson & Stannard, 2018). This evidence gap appears equally true for programmes establishing proof of concept and programmes attempting to go to scale (Dahya, 2016; Carlson, 2013).

3.1.3   Responses to mitigate secondary effects of school closures

There is a stronger evidence base around the impact of more informal learning programmes – often adaptations of existing programmes – that include psychosocial support:

- UNICEF offered psychosocial support for 320,000 Ebola-affected children between 2014 and 2015 (UNICEF, 2017). Although output targets were exceeded, and existing programmes were effectively re-orientated to address Ebola-related issues, overall 'child protection programmes struggled to address Ebola's severe secondary effects on children – such as stigmatisation, increased teenage pregnancy and lack of appropriate care, family livelihoods and access to education' (UNICEF, 2017, p. 5; UNICEF, 2016). Findings suggested that responses to future outbreaks need to prioritise what children can understand, and should implement more effective Standard Operating Procedures.
- In Liberia, an already established peacebuilding education and advocacy programme re-assigned young volunteers to join the fight against Ebola, supporting both disease control and health education. When schools reopened in 2015, 241 of the 300 volunteers were allocated to 83 public schools for a year. The evaluation, while not outcomes-focused, mined the perspective of the volunteers and their beneficiary communities. It found that the volunteers' input was welcomed by communities. Their pre-Ebola training and existing understanding of these communities' contexts were crucial to their successful deployment (Gercama & Bedford, 2016).

We found some evidence of approaches that attempted to mitigate the educational or child protection impacts on female pupils:

- One gender-focused programme in Sierra Leone rapidly adapted during and after the crisis to become a one-hour daily life skills, sexual and reproductive health education and vocational learning class for 4,700 adolescent girls in villages, held in safe spaces. A randomised control trial demonstrated that this programme successfully mitigated some of the secondary risks from the disease outbreak, especially around pregnancy and transactional sex. After the crisis, school enrolment rates fell by 16% in untreated 'control' villages, but in treated villages with the safe space intervention the fall was only half this, at around 8% (Bandiera, Buehren, Goldstein, Rasul, & and Smurra, 2018).

There is no evidence of approaches that attempted to support parents to improve the educational or psychosocial support that they could offer to their children during school closures:

- Beyond supporting their children's learning, there is clear evidence parents and other family members play a key role in identifying and addressing any physical and psychological concerns about children during disease outbreaks (UNICEF/WHO, 2020).

Parents can practice open communication and use the opportunities for more frequent interaction: 'With the right parenting approaches, family bonds can be strengthened, and child psychological needs met' (Wang, Zhang, Zhao, Zhang, & Jiang, 2020, p. 946).

3.1.4 Responses to support or train teachers during disease outbreaks

There is no evidence of approaches that attempted to support teacher training and professional development during school closures or on re-opening, beyond disease-related training:

- The increasing pervasiveness of internet-enabled devices means that technology-enabled professional development is making significant progress in low-income settings (T., Hall-Chen, Horrocks, & Riggall, 2018). While evidence is emerging on the efficacy of some professional learning programmes in protracted conflicts – for instance, the IRC's Connect to Learn (which includes a psychosocial element called *Healing Classrooms)* – the potential of these programmes to transfer to disease-impacted contexts remains speculative and untested (Dahya, 2016).

3.2   Emergent lessons from COVID-19

UNESCO has been tracking the response of governments and education systems during COVID-19. The focus of the response has been to ensure learning continuity, and on teachers, students, caregivers, and parents (Chang & Yano, 2020).

Given the scale of the COVID crisis, governments and partner organisations are piloting a range of low- and high- technology initiatives to resume education services. For instance, in Sierra Leone, radio-based learning programmes were used in Ebola and these are now being rolled out again – with international and local organisational support – to reach children who are all currently out of school.[3] The Center for Global Development has been tracking the response of education systems around the world, and the graph below demonstrates the plans of different countries to provide distance learning (Carvalho & Hares, 2020). Note that these are plans, rather than actioned policies, at this stage.

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[3] See, for instance, (Rising Academies, 2020) for a programme in Sierra Leone, which has scripts that are also being provided for translation and use by other countries.

Type of distance learning planned (%)

*No distance plan we could verify online
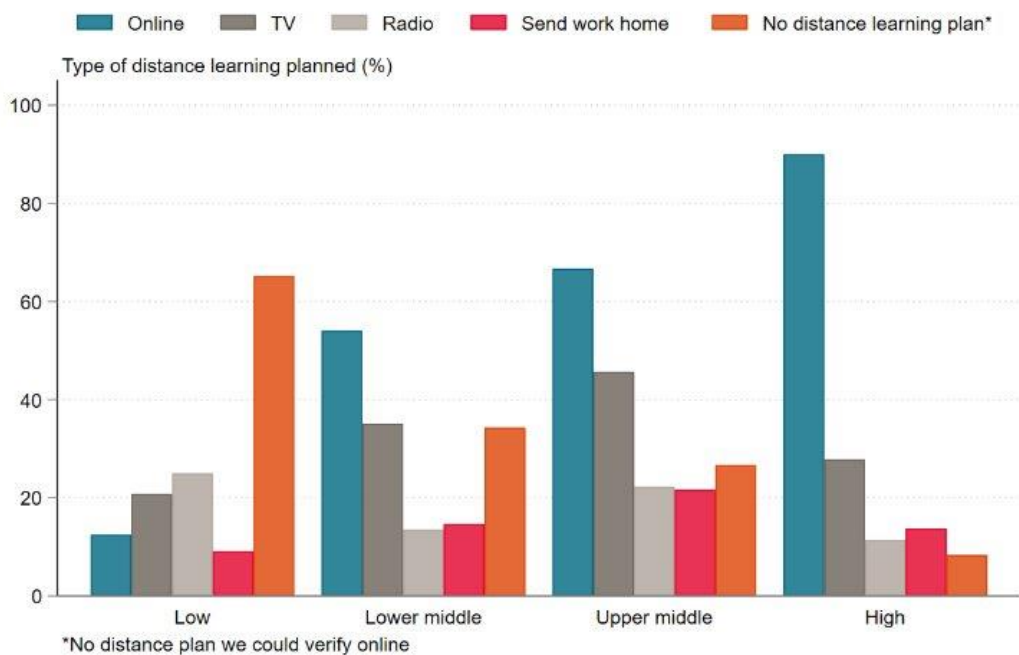
While it is not possible to document all the different approaches, some examples of education technology solutions have been documented by ICTworks (Vota, 2020).

Along with the possibilities, it is important to consider the challenges of implementing these strategies. Access to the digital world is highly unequal, which could contribute to widening the learning gap between advantaged and disadvantaged children (Moore & Marshall, 2020).

4   Recovery

Following a disease outbreak, schools have served as sites for both the delivery of social services and to resume the education of children. For instance, through the World Food Programme alone, more than 11 million students in 49 countries receive lunch at school (Lieberman, 2020).

Although some efforts can be made to facilitate recovery during the crisis phase, the core of the recovery is only possible once schools reopen.

As discussed in the first section, there have been a number of negative consequences resulting from school closures during previous disease outbreaks. During the recovery period, the education sector must focus on mitigating these consequences by focusing its efforts on ensuring that children return to school, attend regularly, and catch up on learning content, as well as considering the health and wellbeing of children while at school.

As part of its recommendations around 'restoring and strengthening capacity with a special focus on community-level systems', UNDP recommended that 'back to school' should be among the first priorities for the recovery of basic social services. This requires significant efforts in 'implementing safety protocols, investments in water supply and sanitary measures for schools, refurbishing of schools, teacher training and parental awareness, and psychosocial care' (UNDP, 2015a, p. 10).

Understandably, much of the education-focused 'back to school' efforts have prioritised mitigations of the primary impacts of any future outbreak, i.e. ensuring that schools are clean and disease-free and are prepared to prevent the disease spreading if future outbreaks occur. They have thus included significant investments in WASH facilities, disease-related training for teachers, and learning for pupils.

With donor support, several countries affected by Ebola attempted some system-wide recovery planning and implementation. However, as yet, there is no clear evaluative evidence on the impact of these strategies:

- In Guinea, a post-crisis decree from the Minister of Education allowed children to start school at age six rather than seven, although there is no evidence on take-up of this offer. The new sector plan for 2020–2029 does not include mention of Ebola-related recovery or preparedness plans (Republique de Guinea, 2019).
- Sierra Leone's ambition to increase enrolment to above pre-Ebola levels was built on three activities: (i) waive school and examination fees; (ii) school feeding for primary students; and (iii) community mobilisation and targeted support to vulnerable groups. The pressure to 'make up for lost time' also focused recovery priorities on a small set of activities to accelerate learning, including improved syllabi and teacher training, classroom upgrades, continuing the radio programmes, and solar kits for rural schools (Government of Sierra Leone, 2015).

Although the UNDP recommended that all countries affected by Ebola prioritised community engagement and awareness campaigns to improve school return rates, there is limited evidence on the different approaches used or the effectiveness of these approaches (UNDP, 2015a)**:**

- In Sierra Leone, a well-communicated focus on improving in-school hygiene practices – including training teachers – appeared effective in encouraging parents to ensure their children returned as soon as schools reopened (Powers & Azzi-Huck, 2016).
- An evaluation of the USAID Ebola cash transfer programme for 120,000 households in Liberia and Sierra Leone found that, as the programme progressed, transfers were increasingly spent on non-food items, including schooling (Guluma, 2018).

Sierra Leone's targeted efforts to prevent dropout among Ebola orphans and survivors appear to have been effective. According to its most recent sector plan, no one has yet claimed to be out of school because of Ebola (Government of Sierra Leone, 2018).

Although it has been suggested that 'a protective response is to allow for automatic promotion (in K-12 education) while ensuring earmarked places and remediation for disadvantaged populations in future admissions processes', it is unclear whether any governments did this following any disease outbreaks (Mundy & Hares, 2020). It would have been useful to understand more on how schools adapt curricula and introduce remediation.

Providing teachers with appropriate training in time could facilitate recovery during a crisis. In North Kivu in the DRC, school principals and teachers were trained in what the WHO has described as 'psychological first aid' (Bedford, Jones, & Streel, 2018; WHO, 2014). Some analyses have recommended that all teachers should be trained to offer post-crisis psychosocial support (Alcayna-Stevens, 2018; Fisher, Elliot, & Bertrand, 2018).

Some efforts were made to reprioritise existing programmes, and they offered opportunities to reinforce and recalibrate learning priorities:

- In Sierra Leone, a new teacher development programme – allocating in-service teachers to support illiterate or poorly trained teachers in rural schools – was positioned as an 'Ebola recovery support unit to schools/teachers' (Government of Sierra Leone, 2015, p. 51).
- Overall, however, the 'paradigm change' that was observed in the health policies of countries affected by Ebola does not appear to have occurred in any of the education systems affected by disease (Delamou, Delvaux, El Ayadi, Beavogui, & Okumura, 2017).

As discussed earlier, when schools are closed for long periods then children's access to other services can also be affected. As a result, children could not only suffer learning losses but also face greater risks in terms of domestic violence, abuse, and child labour. When schools open, those who have been affected by the outbreak (or even perceived to be affected) could face stigma in the community and integration could be challenging. These interdependencies highlight again **the need for psychosocial support for children that goes beyond simply support to increase learning outcomes**. Programmes often focus only on reintegration, but it is important to ensure that children have the support to understand and appreciate the challenges and potential trauma they faced as part of the disease outbreak.

Despite numerous programmes having been implemented in different countries, their effectiveness has not been documented effectively. There is a clear need to set up assessments and evaluations of these programmes to be in a better position to understand and implement potential solutions in the future.

5   Reform

In general, following previous pandemics, **the education sector saw some substantial changes in the recovery phase but that these did not lead to paradigm shifts** comparable to those experienced by health systems in these countries.

Only Sierra Leone appears to have systematically incorporated post-Ebola preparedness into its education planning. A key target in its most recent plan is to 'develop an emergency preparedness and response plan, handbook, and phone directory to be available in 75% of schools, ensuring readiness to act in the case of emergency' (Government of Sierra Leone, 2018, p. V).

The efficacy of a number of guidance documents and recommendations created as a result of Ebola (all of which include education) will be tested through the COVID-19 crisis. This will stress test both the extent to which countries affected by previous outbreaks are better prepared than other countries as a result and the utility of the post-Ebola guidance documents and frameworks (ACAPS, 2016; UNICEF/WHO, 2020)

Some of the data-strengthening activities precipitated by the Ebola Crisis, as well as having a positive impact during recovery, may help to mitigate the educational impacts of COVID 19:

- Crises such as a disease outbreak can provide a moment of opportunity for an enhanced focus on technology-enabled aspects of system strengthening. This can include data collection, communications with teachers and families, and money transfers for teacher salaries (Dahya, 2016). However, the use and effectiveness of these aspects have not been documented and evaluated.
- The Liberian Government used FHI360's K-Mobile programme to support data collection on schools as part of its recovery plan (Dahya, 2016). Evaluative evidence is not available, however.

Distance learning processes have been touted to provide additional options to support the response and recovery phases, although questions remain about their reach and equity. Nonetheless, given the lesson that existing programmes can be adapted more effectively during times of crisis, reform efforts could consider including distance learning as a part of the normal process of education delivery – even if at a small scale – so that there is a platform, as well as local ownership and buy-in for the process, should the need to shift delivery modality at a time of crisis arise.

6 Gaps and limitations of the literature

As this review has shown, there is generally really limited evidence on what has worked and for whom. The gaps mentioned below are thus meant to be illustrative rather than exhaustive in terms of our knowledge of what works well in the context of widespread disease outbreaks.

1) **There appears to be no substantive consideration of children who are already out of school before a disease outbreak.** Out-of-school children are usually poor, live in rural areas, and are mostly girls (UNESCO Institute of Statistics, 2019) – so they already face obstacles to access education systems and other formal institutions.

According to UNESCO, in 2018, 258.4 million children, adolescents, and youth were already out of school, representing one-sixth of the global population of this age group (ibid.).

FIGURE 1

Global number of out-of-school children, adolescents and youth, 2000-2018
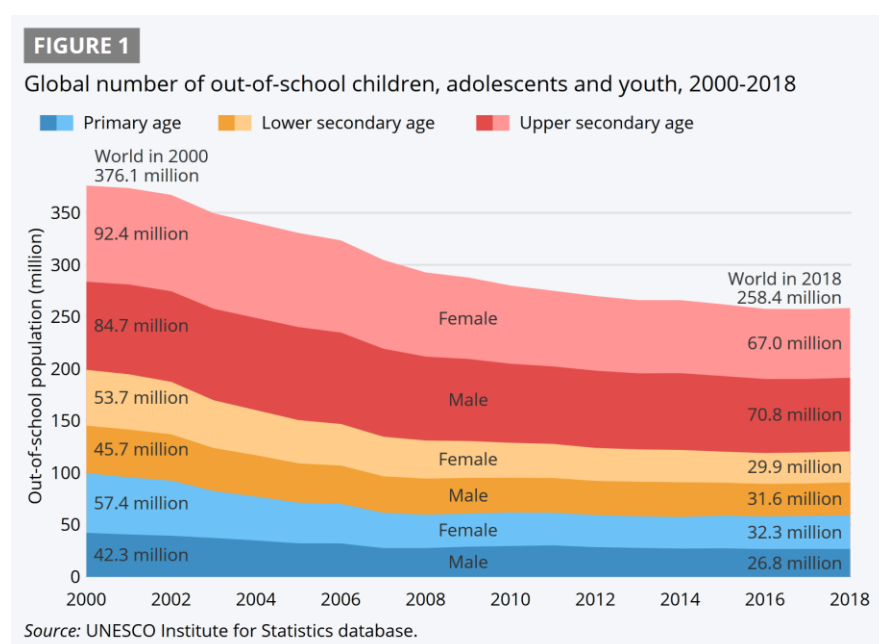
Although the prevalence of out-of-school children is varied in the Maintains focus countries, most countries have high numbers of out-of-school children, as shown below (UNESCO Institute of Statistics, 2019):[4]

Country	Number of out-of-school children	Proportion of out-of-school children (as % of primary school age)	Year
Pakistan	6,005,978	25	2018
Ethiopia	2,306,559	14	2015
Kenya	1,381,464	19	2012

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[4] The figures for out-of-school children in Sierra Leone appear to be unusually low for that context. According to the UNICEF Sierra Leone Annual Report 2017, 22 per cent (235,958 children) of primary school-age children were out of school in 2016 (UNICEF, 2017a) (UNICEF, 2017). We have used the official UIS numbers here for comparability, but the disparity in the Sierra Leone numbers demonstrates the need to be cautious about the actual size of the out-of-school children population, both in Sierra Leone and elsewhere.

Bangladesh	803,773	5	2010
Uganda	328,897	4	2013
Sierra Leone	6,104	1	2016

The primary focus following disease outbreaks is aimed at ensuring that enrolled children return to school. However, school-centric approaches and responses stand to miss out on these children, entrenching inequalities further.

2) **There is a dearth of evidence on what schools and teachers could do while schools are closed to prepare for the recovery phase.** While there is some information on what could be done during 'normal' times to prepare for crisis situations, and programmes and training immediately after epidemics to provide support to children, more research and programming might be necessary to assess whether any preparation might be possible during the response phase (i.e. while a crisis is unfolding) to aid the recovery phase.

3) **There is limited to no discussion in the literature on the resourcing required and used to mount a successful recovery.** What do initiatives actually cost? What resources are required to implement the various recommendations made in reports and papers? How has financing been made available for these, and has it been adequate and used effectively? Education sector plans (with support from the Global Partnership for Education in particular) provide some guidance, and bilateral and multilateral development organisations (such as DFID and the World Bank) have set up and funded specific education recovery programmes, but a systematic review of the costs associated with a comprehensive recovery phase appears to be missing from most assessments concerned with recovery.

7   Implications for the COVID-19 pandemic

Despite the limited evidence on the effectiveness of particular approaches, past responses to disease outbreaks suggest that education systems should immediately and substantially activate a response plan that ensures that children participate in and engage with education in some way so that they retain their connection to education, with particular attention paid to girls and the most vulnerable populations. At the same time, the heterogeneity of the findings presented in this review suggests that the most appropriate responses taken in each country will depend on a number of contextual factors.

Where possible, it appears helpful to rely on the resources offered by existing programmes that are able to pivot through repurposing existing resources or to scale up an approach that is tried and tested at a smaller scale. Local engagement, ownership, and buy-in are critical to ensuring the success of programmes at all stages.

While distance learning offers tremendous potential, and is being pursued actively in the COVID-19 context, there are risks regarding access, quality, and equity of service provision and use. Given the lesson that existing programmes can be adapted more effectively during times of crisis, reform efforts could consider including distance learning as a part of the normal process of education delivery – even if at a small scale – so that there is a platform, as well as local ownership and buy-in for the process, should the need arise to shift delivery modality at a time of crisis.

Putting children at the core of the response means considering the need for secondary interventions, such as ones that provide psychosocial support, and considering how parents and teachers can be both supported and leveraged to support children.

Previous disease outbreaks, including in particular the Ebola outbreak, have demonstrated the need and opportunity for reform following an outbreak in order to be better prepared for future outbreaks. This includes documenting evidence of what works, for whom, and at what cost during and immediately after the pandemic. Governments and organisations took a range of responses to the Ebola epidemic, but few responses were fully documented, assessed, or evaluated. The availability and affordability of monitoring and evaluation resources are also affected by the disease outbreak, and pose challenges to using traditional approaches. However, useful information on the effectiveness of responses can be obtained through: a) carefully documenting response design, challenges encountered, and lessons learnt; b) documenting costs; c) using low-cost monitoring and evaluation approaches where possible; and d) post-hoc evaluations once the pandemic has eased or ended.

8 Conclusions and recommendations for further technical assistance

Countries have tried many different strategies as part of the response, recovery, and reform phases following pandemics like COVID-19. Together, the resulting programmes provide a range of insights into the options available to education systems to respond during times of crisis.

Based on the key findings, we offer the following recommendations:

1. **Conduct a rapid but thorough assessment of the education situation in each country context.** The heterogeneity of these findings suggests the need for a rapid deep-dive approach to assess the specific plans and preparedness of each country, so that approaches are tailored to different contexts.

2. **Activate a response plan immediately in order to engage children.** Regardless of learning outcomes, education systems should immediately and substantially activate a response plan that ensures some participation and engagement with children so they retain their connection to education.

3. **Emphasise intentionally the needs of marginalised and disadvantaged children.** Those children who are most vulnerable could face additional challenges and uncertainties in the new context. Girls, children with disabilities, and out-of-school children, for instance, might require additional support and traditional approaches might not always be appropriate for them.

4. **Assess the feasibility of adapting existing key education programmes during another outbreak.** As this review has shown, leveraging successful programmes to pivot and/or scale appropriately to respond to disease outbreaks has proved effective.

5. **Engage local actors in the design and delivery of any pivoting and scaling up of relevant programmes.** Local engagement, ownership, and buy-in are critical to ensuring the success of programmes at all stages.

6. **Pursue distance learning and e-learning opportunities, but with caution.** While distance learning offers tremendous potential, and is being pursued actively in the COVID-19 context, there are risks regarding access, quality, and equity of service provision and use. These risks need to be identified up front so that mitigation measures can be implemented.

   The coverage and reach of existing education infrastructure – as well as the potential coverage and reach of distance learning and e-learning solutions – will also influence decisions on the short- and long-term strategies to improve learning levels for all children.

7. **Place the needs of children at the core of programming at all phases.** Children should be provided with psychosocial support and training, and similar support should also be made available to their guardians (such as parents and teachers) to

deal with such situations. Education systems would thus be able to provide the support to ensure their wellbeing *and* contribute to improving the learning outcomes of children.

8. **Set up monitoring and evaluation frameworks during the response phase.** The effectiveness of many of these programmes has not been evaluated, so the evidence is equivocal about their suitability, especially in new and different contexts. Future programmes should include robust monitoring and evaluation mechanisms to avoid these issues.

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