Digital technologies for education during the COVID-19 crisis in the Global South

Summary of key takeaways

- **Fast track telecom infrastructure deployment to address coverage and quality of service concerns**
- **Provide students access to affordable digital devices**
- **Facilitate teacher training programmes in digital pedagogies**
- **Use multiple channels to teach, but maintain some uniformity in course content**
- **Conduct remediation programmes to support those with limited access during school closures**

Introduction

The COVID-19 pandemic has resulted in disruptions to education worldwide. School closures affected nearly 1.6 billion learners in 190 countries by August 2020, including up to 99% of the world's student population in low and lower-middle income countries (United Nations, 2020). Remote learning has helped provide continuity of education while minimizing students' exposure to the virus. This has, however, also created inequalities in access to education. Many countries have moved between opening and closing schools as the case counts fluctuate. Long-term implications of this pandemic on education are yet unknown. This policy brief identifies some pain points in the Global South and provides considerations for remedial action.

Findings

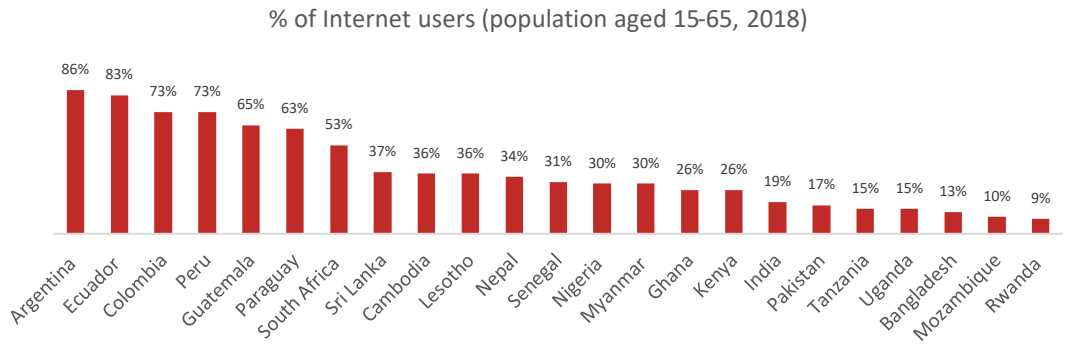
Online learning deemed the most effective channel except in low-income countries

Online learning was deemed more effective than other remote learning alternatives such as television and radio in all but low-income countries

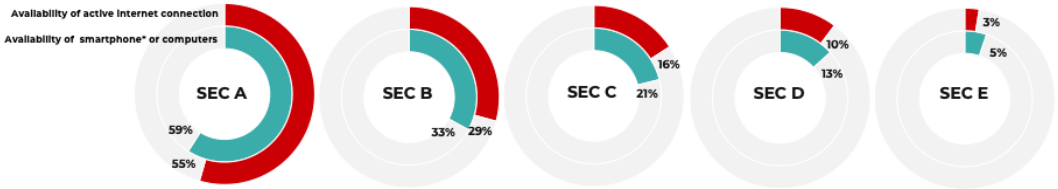
Countries across the world are using various modalities to facilitate remote learning following school closures – this includes online learning, television, radio and take-home packages. A World Bank study from 2020 indicates that online has been deemed the most effective amongst all countries, except low-income countries where television is regarded the most effective channel.

Internet use was low in Global South, with low income households being the least connected

Internet use was low in many of Global South countries in Asia and Africa.



The connections were often concentrated in the hands of richer households within these countries with low levels of internet access and use. Internet use levels, in India, for example, were at 19%. While 55% of the richest households with children had an active internet connection, this was only true for 3% of the poorest households. Significant urban-rural divides were also seen, with households with children in urban areas being twice as likely to have an active internet connection than their rural counterparts.



Lack of access to education during the pandemic increased risk of long term dropouts

The dearth of ownership of digital devices such as computers and smartphones has been a barrier to internet use, thus access to education. Economic hardships arising from job losses have made purchasing new devices a challenge for those in lower income brackets, with reports arising of children needing to effectively drop out of school. UNESCO, in mid 2020, estimated that 24 million students were at risk of not returning to school due to the COVID-19 crisis. The largest share of learners at risk of not returning to school were from South and West Asia (5.9 million) and sub-Saharan Africa (5.3 million). Those living in poverty, and those affected by conflict and migration were among the groups most impacted.

"Once I had an emergency meeting at the same time as my son's study sessions. I made an excuse saying I have signal problems and stayed away [from my meeting]" – Working parent, male, SEC A, Gampaha, Sri Lanka

Even households with devices did not have sufficient numbers for all family members

Our research also shows that although some households had devices, they did not have sufficient resources to cater to the needs of multiple family members who needed to be online at the same time – this was especially relevant to households with multiple children in school, and parents who had to work remotely.

Many device users reported poor network coverage and quality of service

The switch to online learning has also highlighted more fundamental issues around poor network

coverage and quality service, particularly in remote areas. Reports have arisen of children having to stay out on the roadside, and climb onto heights such as trees and water tanks to participate in online classes

Sources: The Inquirer, New York Times

Some teachers were not equipped to teach under lockdown conditions

Transitioning to remote teaching has been a challenge for many educators given a lack of experience and training in the field. Learning to use platforms to create and deliver content has was a new experience for many. Several parents in Sri Lanka complained that some assignments were not designed taking the lockdown conditions into consideration.

There is a WhatsApp group where they send daily assignments.

They need us to take printouts for certain assignments. It's difficult to do the assignments by hand. The font is small, so we have to take printouts. So, we have to line up in queues [outside the communication shops], so those issues are there"
- Nonworking female, SECB, Gampaha, Sri Lanka

Few students used online real time learning due to resource and skill constraints

Online real time lessons via platforms such as Zoom and MS Teams allow for more engagement with and feedback for children, simulating the standard classroom experience, at least to an extent. However, only few students could participate in such classes. Gamage & Zaber (2021), based on a non-representative survey with teachers in Sri Lanka, report that while only 4% of students could be reached using online real time classes via Zoom/Teams, 41% could be taught via messaging platforms such as WhatsApp/Viber to send notes and assignment as pictures or PDF files. While this allowed some communication between teachers and students, this made it difficult for teachers to explain concepts clearly, and students to troubleshoot as needed.

Key takeaways

Fast track deployment of telecom infrastructure to address coverage and quality of service concerns

Telecommunication regulators should lead efforts to identify bottlenecks to widespread coverage and high quality of service experience. Deployment of telecommunications infrastructure such as telecom towers could be the first response to increase coverage. Countries

with underutilized Universal Service Funds may use accumulated money to fund infrastructure rollout. This may have to be complemented with investments in international connectivity (undersea and terrestrial cables), and national fibre backbones to maintain and uplift the quality of service. Adequate spectrum needs to be made available -- the United States and South Africa have released/reallocated spectrum bands to increase bandwidth availability (ITU, 2020).

Provide students access to affordable digital devices

A variety of mechanisms could be used to allow students to gain access to digital devices, ranging from direct provision to providing interest free/low interest loan schemes to students in need. Device loan schemes have been a popular workaround. The state government of Haryana, India for example, provided free tablets to government school students in grades 8 to 12 (Hindustan Times, 2020). The devices, which are pre-loaded with content, remain the property of the government, and are to be returned upon the student completing their secondary education.

Provide teacher training in digital pedagogies

Teachers should be trained to teach using digital tools to enhance the effectiveness of their lessons. The programmes should cater to teachers with different levels of digital literacy. The pedagogy should be aligned with international standards such as the International Society for Technology in Education Standards for Educators and the EU DigiComp Framework. The curriculum could cover areas such as content delivery and ways to keep students engaged in the lessons. Teachers catering to students with limited resources should be encouraged to design assignments as per the resources available to them/children. This would be useful in the medium to long term once schools reopen, as traditional settings move towards adopting blended learning approaches.

Use multiple channels to teach, but maintain some uniformity in course content

Poorer households may lack access to adequate digital devices and connectivity. Classes may have to be conducted through other channels ranging from TVs to radios to loudspeakers. It is important, however, that centralized decisions are made on the content taught through these different channels, with a constant feedback loop to ensure that the changing circumstances are accounted for. Educators may wish to experiment with the use of multiple channels for education service delivery (e.g.: asking all students to watch select videos via the Internet/ TV, and then having an hour of interaction with teacher via a call for troubleshooting/assessments). Making more commonly available technologies (such as television) more central to education delivery could reduce inequalities created in the longer term.

Conduct remediation programmes to support those with limited access to education during school closures

While efforts can be made to equalize educational opportunities, it is inevitable that students will return to traditional classrooms with varied levels of knowledge and proficiency due to gaps in access to educational resources. Some may not return at all, having had no access to education for sustained periods of time. The system would have to be redesigned to avoid exacerbating these inequalities, which could lead to some students being left behind. McKinsey & Co (2020) identifies 3 levers remediation programmes could capitalize on. Thet are 1. more time 2. dedicated attention and 3. compressed content. The Balsakhi Program, a remedial

education programme in the late 1990s in India, introduced a two-week training model at the beginning of the year with ongoing reinforcements for several hours a week while school was in session. Regardless of the type of programme, special attention should be paid to students' learning capacity and mental health. In Singapore, the Ministry of Education introduced a peer support programme in all schools, which equips students with skills to identify distress among their friends and provide them with support.

Key References

This policy brief is informed largely by two sets of primary research, as well as secondary research including newspaper articles and reports by organizations such as the World Bank and UNESCO. The primary research studies are detailed below.

- After Access Household Surveys: AfterAccess is an award-winning series of surveys conducted to understand ICT access and use among different target groups (individuals, SMEs, persons with disabilities) in the Global South. The surveys are nationally representative, and use methodologies that are comparable across 23 countries in the Global South-- seven in Asia, ten in Africa and six in Latin America. The surveys were conducted by pro-poor sister networks DIRSI, LIRNEasia and Research ICT Africa.
- Sri Lanka COVID+ qualitative research: Smartphone enabled ethnographic research, termed e-diary research, was conducted by LIRNEasia to understand individuals' access to food, education, health and money during COVID-19 lockdowns. The research was conducted over 14 days between October and November 2020 in the Gampaha district in Sri Lanka. This was supplemented with in depth interviews with individuals at the bottom of the pyramid, and key-informant interviews with last mile delivery service providers in the area.

Other resources used referenced include

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World Bank (2020) *How countries are using edtech (including online learning, radio, television, texting) to support access to remote learning during the COVID-19 pandemic?*

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