Education in Emergencies

The Effect of COVID-19 on the Educational Systems of South Africa, Cambodia, Turkey, Albania, India, Pakistan, Nigeria, Brazil, Indonesia, China, and Egypt

Abigail Bautista, Anwesha Sarma, Naomi Bonilla, Jennifer Tao, Seek Ling Tan, Sophie Zinn, Sophia Mohammed

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Youth Researchers Program, UNICEF Evaluation Office
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Abstract
Because of the COVID-19 pandemic, countries are experiencing the highest recorded level of school disruption in history. UNESCO (2020) estimates that 290.5 million students are out of school at this time because of school shutdowns and quarantine. As a result, most have turned to distance learning as a solution for continuing education. During acute emergencies, educational interventions should promote access, quality, and wellbeing (Burd et al., 2015, 9). That is why exploring and analyzing how countries’ distance learning strategies affect those factors is so vital. The following exploratory analysis investigates how a set of countries, with some of the greatest number of students in their regions, are managing their responses to education in emergencies in the context of COVID-19.

Introduction
This report summarises the alternative practices to deliver education and to identify the best practices in distance learning in the following developing countries across the world: South Africa, Cambodia, Turkey, Albania, India, Pakistan, Nigeria, Brazil, Indonesia, China, and Egypt. These countries were selected for this report as they are ranked amongst the most populous countries in the world, specifically with a focus on the highest student populations in different regions within the Global South (Desa, U. N., 2019). Some of the countries were specifically chosen due to unique demographic trends among their student population (ie. Cambodia) and special circumstances regarding a large portion of the population (ie. Albania). The purpose of this report is to provide students, educators, researchers, and policymakers insight on the best practices and challenges of each of the following countries’ educational responses to COVID-19 that are relevant to improving future education policy decisions during emergency situations.

Overall Trends
Due to a lack of efficient technology infrastructure, there is prevalent use of traditional media such as Radio and TV in delivering lessons and other educational resources amongst the developing countries.

Limitations of technology infrastructure create obstacles in mobilizing an education response that reaches a majority of students. The following groups of students face the most disruption in the transition to distance education:

- Students from disadvantaged socioeconomic backgrounds
- Students from rural communities
- Students that belong to ethnic minorities
- Students that have documented physical or learning disabilities

In financing these educational responses, governments have also partnered with the private sector and foreign NGOs in order to expand financial limitations of the state. Partners such as UNICEF have been crucial in providing educational materials and spaces for students who come from low socioeconomic backgrounds and/or rural communities.
South Africa
Introduction
Though South Africa constitutes one of Africa's largest economies, its status as a middle income, emerging market must be interpreted in the context of its political stability and economic viability in the wake of apartheid. South Africa’s high unemployment rates and wealth disparities have produced “a dual economy with one of the highest inequality rates in the world” (Macha, Kadakia, 2018). The educational system is still recovering from the 1953 Bantu education law which served to enforce the systems of racial oppression that have existed in the country throughout its history. South Africa now invests a significant amount in primary and secondary education, more than most OECD partners, but is still ranked lowest by the OECD for tertiary attainment (degrees completed in schooling after the completion of secondary education - ISCED 2, 3, and 4) (South Africa: Overview of the education system, EAG, 2019). Though more adults are attaining upper secondary education in South Africa, these adults are over twice as likely to be unemployed and not in education or training than adults with tertiary education. The above average funds spent by regional governments on non-tertiary education are in effect not solving the issue of unemployment in South Africa (South Africa: Overview of the education system, EAG, 2019). In a country, where even though 93.9% of the youth between 15-34 years old is literate, only 55.1% have completed their upper secondary education (SOURCE). Furthermore, Education statistics from South Africa show a large disparity in attainment of education based on racial classification (Africa, S. S., 2020).

<table>
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<th>No Schooling</th>
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<td>.1</td>
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</tr>
</tbody>
</table>

Education and Challenges
A rural/urban split in attainment is acute in South Africa with higher percentages of illiteracy in rural areas (Macha, Kadakia, 2018). Educational resources and infrastructure are included in this urban/rural split in that there is much less access to electricity, running water, and books in rural locations. Language varies by region in South Africa, and with the country’s 11 official languages, it is impossible to standardize education across the country in just one language. Elementary school enrollment rates have increased significantly in recent years but South Africa’s educational system is consistently ranked
low in terms of academic achievement and high dropout rates (Macha, Kadakia, 2018). Race and poverty are still closely linked in South Africa which deeply impacts academic achievement rates due to the high population of students of color and their lack of access to education and educational resources.

South Africa’s unique wealth disparities, weak health system, intergenerational living situations, and populations disproportionately affected by HIV, TB, and other infectious diseases have made it a vulnerable target for Covid-19 (Nordling, 2020). In addition, overcrowding in cities and slums has been found to make social distancing difficult and about 19 percent of the rural population lacks access to a reliable water supply and 33 percent do not have basic sanitation services, making hygiene practices shown to slow the spread of covid-19, such as frequent hand washing, inaccessible in some areas (Water Access in South Africa, 2020; UNESCO World Water Assessment Programme, 2006). These factors make returns to an in person educational experience much more complex.

COVID-19 Education Response
South Africa took many aggressive steps on March 16th to control the spread of the virus including shutting borders, banning public gatherings, and closing schools (Powell, Cassim, 2020). The South African government announced its plan for school closing and reopening as follows; schools were to be closed from March 18th onwards with office based staff returning to work in person May 4th, school management teams returning to work May 11th, teachers returning to work May 18th, and students returning to school on varying dates by grade on June 1st and afterward. As of June 1st, the timeline for student return to in person schooling was adjusted as follows (Education - Coronavirus Covid-19, 2020):

Grade 7, Grade 12, and School of Skills Year 4 learners will return to school June 8th.

Early Childhood Development, Grades 1, 2, 3, 6, 10, and 11, School of Skills Years 2 and 3, Schools for Learners with Severe Intellectual Disabilities Grades R, 1, 2, 3, and 6, and Special Care Centers for Learners with Severe and Profound Intellectual Disabilities Years 1-3 will return to school July 6th.

Grades 4, 5, 8, and 9, School of Skills Year 1, and Schools for Learners with Severe Intellectual Disabilities Grades 4 and 5 will return to school August 3rd.

In the interim, the Department of Basic Education (DBE), in conjunction with the provincial government, gathers resources to be made available to students from home online and through broadcast with “a focus on Grade 12 learners and the promotion of reading for all the grades.” The DBE has made available online sources with relevant content through links and partnership with online educational organizations as well as launching TV and radio curriculum support programmes. The program was scheduled to begin on April 9th and broadcast across three SABC TV channels and 13 radio stations with online support. The TV schedule included 4 and a half hours of programming every weekday and one hour every weekend day. In order to reach a wider audience, the FREE STEM Lockdown Digital School expanded into community television starting April 21st with two DSTV channels, 1 KZN and Soweto TV to increase accessibility. Radio slots vary by station for each of the 13 stations participating. The DBE postponed two major
May/June exams, the Amended Senior Certificate and the National Senior Certificate Examination. The Western Cape Education Department updated its ePortal for home learning and provided resources for parents and students to assist learning from home including exam papers for various grades (Education - Coronavirus Covid-19, 2020). South Africa’s tiered approach for returns to schooling and thorough lockdowns indicate that schooling may continue as normal later in the summer of 2020, and though resource inequalities will impact students, the extensive online, radio, and tv educational tools seem to be helping bridge that gap immensely.

**Identified Best Practices**

Some of the best practices that can be identified on the education in emergencies response in South Africa are:

a) *Multilingual educational tools* - South Africa’s wide array of national languages have made multilingual educational materials including radio programs, television programs, and online course modules. The multilingual approach provides accessible tools to students from geographically and culturally different areas. This practice is crucial in decreasing the disparity between rural and urban populations across language barriers. For any country with a multilingual population, multilingual educational tools will be relevant in the period before in person education is once again safe and normalized.

b) *Tiered returns to in-person education* - South Africa’s tiered approach to returning to in person education, prioritizing medical schools students and natural sciences students in need of laboratory space, and smaller groups of students diminishing the number of people in buildings at at time can be applied to schools around the world as in person education resumes. The tiered plan allows for higher level students to complete their education and join the workforce, increasing the number of doctors and health professionals available to address the COVID-19 crisis and the number of available earners per family as the economy has taken a hit due to decrease in employment.

c) *Television and radio modules* - Having educational materials that do not require internet access, computers, or mobile devices has greatly expanded the learning population that can be reached in South Africa. Many countries with low wifi penetration or large disparities in internet access between urban and rural populations will benefit from educational plans that include radio and television programs, which have far greater penetration.
Cambodia

School Closures and COVID-19
On March 14, 2020, the national government ordered a shutdown of all schools, affecting approximately 3,407,529 students enrolled in public or private primary and secondary education. There were 24 confirmed cases of COVID-19 at the time of the schools’ closure. Of those 3,407,529, approximately 2,163,143 students are enrolled in primary education with 122,886 students enrolled in private schools and 2,040,257 students enrolled in public schools. Although Cambodia is not nearly as populous as countries within the East Asia and Pacific region with a population of 15,288,489 people, it was chosen as a case study for this region because a large portion of its student population (over 60%) is enrolled in primary education.

As of June 5, 2020, Cambodia is one of the only two countries in Southeast Asia that has reported zero deaths from COVID-19. Although critics attribute this to the lack of testing capacity and hiding or preventing reported cases, it appears that the country has been successful in controlling the virus’ spread. There are four factors in their success in controlling the virus’ spread: 1) the country was able to conduct 16,000 tests and implement contact tracing swiftly 2) the country received substantial support from international partners. The World Health Organization and world powers such as China, Vietnam, and Russia have contributed medical supplies and provided technical assistance while entities such as the World Bank and EU contributed $81 million in credits and grants to Cambodia. 3) there is concentrated effort from members of the Cambodian government and business elite in donating their salaries to addressing the COVID-19 response and 4) almost 80% of Cambodia’s population live in rural areas with less population density, making it less likely for the virus to spread rapidly (Heng 2020).

As of June 5, 2020, Minister of Education, Chuon Naron, expressed that Cambodian schools will not be open in the foreseeable future due to political, economic, and institutional restraints. The government is looking to reopen before the start of the school year in November 2020 (Dara 2020).

COVID-19 Education Response
The Ministry of Education, Youth, and Sport (MoEYS) has spearheaded Cambodia’s educational response to COVID-19. Through the collaboration with private companies, the ministry was able to launch an e-learning initiative consisting of lessons for students in grades 1-12 offered through the MoEYS’ Facebook page, YouTube channel, and e-learning website. Some of the responses identified in the country include: providing television education programming, providing multilingual radio programming specifically for indigenous communities, and utilizing online and messaging platforms such as Facebook and WhatsApp to mobilize distance learning responses in rural communities.
Television
The National Television of Kampuchea from the Ministry of Information has collaborated with MoEYS to provide access to distance and e-learning programs for grades 1-12 on TVK and more than 50 other channels throughout the country. Course offerings consist of pre-recorded lectures in Mathematics and the Khmer Language for grades 1-12 with additional specialized subjects like Biology, Chemistry, Physics, and History for grades 7-12 (National Television of Kampuchea 2020). According to Chuon Naron, the Minister of Education, these educational videos are live streamed from 8am to 12am while repeat broadcasts run from 12am to 8am. (Sotheary 2020 E-Learning TV) The following image below describes the TVK channel’s programming schedule each week, offering alternating hourly blocked schedules for each grade and subject.

Radio
The MoEYS has also launched multilingual live radio e-learning programs from April to June for indigenous children in kindergarten through grade 3, and hopes to expand radio programming to all students in Cambodia. With the help of a $70,000 grant from the Global Partnership of Education, Cambodia produced 15 titles of radio episodes for preschoolers and an additional 35 multilingual radio programs covering storytelling, math, and language development. (Global Partnership of Education) Running from April to June, these radio programs were designed to provide e-learning opportunities to the Tumpoun and Kreung indigenous people in Ratana-kiri province and Bunong ethnic people in Mondulkiri province after nearly 40 multilingual schools in these provinces were suspended by COVID-19. This is further supplemented by parental teaching and support from education officials in informing parents, guardians, and students on creating suitable
study spaces. Cheav Kimsreng, a resident from the Ratana-kiri province, remarked positively about the use of radio programming in the Khmer Times, “The establishment of education programmes for small children over the radio is the best alternative, because there is less access to internet service and also fewer television sets in rural areas.” (Sotheary 2020 E-Learning Radio)

**Online/Internet Platforms**

Facebook is integral in providing troubleshooting options to parents and a community and space for students to continue interacting with one another. Despite lack of household access to computers or proficiency with IT skills, Facebook is commonly used even within rural households that have access to a smartphone. A Digital 2020 Report on Cambodia reports 9.2 million users that could be reached through advertisements with 99.6% of users that access Facebook using any kind of mobile phone; approximately 93% of Facebook users are also cited to only have access to Facebook through mobile phones (Kemp 2020). For families who don’t have the financial or technological means to access online content, teachers have worked with schools and the students’ communities in providing low-cost, low-technology ways for students to continue learning. Parents who don’t have access to Facebook receive weekly phone calls from teachers. (RTI International). The private sector has also been vital in providing educational access to low-income students. Metfone, one of Cambodia’s major providers, is providing free data to all students accessing MoEYS’ e-learning portals and offering Internet access at a discounted rate.

The Cambodian government has received a lot of support from domestic and foreign NGOs in transitioning pre-existing literacy programs online. A joint effort between MoEYS, The Asia Foundation’s Reading Project, telecom provider Smart Axiata, and 11 other NGOs contributed to providing parents, educators, and caregivers access to tips for reading aloud to students through a series of 10 videos, reaching more than 220,000 children throughout Cambodia. Cambodia’s All Children Read Project, supported by the United States Agency for International Development (US AID), also provides Cambodian Sign Language and audio accommodations for parents and caregivers that are not confident readers or have difficulties reading from a screen (RTI International). The Let’s Read digital library also offers students, parents, and educators free access to books that are relevant to the Cambodian experience (Akseer 2020). Considering that much of Cambodia’s education system is centered around reviving Khmer culture after the devastation of the Khmer Rouge, providing access to culturally relevant literature and promoting literacy development is crucial in continuing education during the pandemic.

**Challenges**

**Digital Divide**

Although much of MoEYS’ learning initiatives relies on online access, internet accessibility remains an issue for many Cambodians. According to the Digital 2020 report, Cambodia has 9.7 million internet users in January 2020 with an internet penetration rate of 58% (Kemp 2020). Additionally according to a UNESCO report on Data to Inform the COVID-19 Response, only 11% of households have access to a personal computer and 7%
of households with internet access; it is worth noting that this is 2016 data and that the amount of Internet subscribers have had a positive trend since then. In a 2017 Cambodia Socio-Economic Survey, 91% of households have at least one cell phone with a majority of households in rural areas (89%) having at least one cell phone. This is particularly significant in that the mobilization of the private sector in providing free Internet access and the availability of e-learning materials through popular social media channels will be very effective in ensuring at least one modality of educational access to the majority of Cambodia’s population. However, in regards to accessing other media channels, only 71% of households have televisions (68% in rural households) and a much lower 30% of households have radios (30% in rural households) (National Institute of Statistics, Ministry of Planning 2018). This raises questions on the effectiveness of the MoEYS’ support in providing multilingual distance learning materials to indigenous children in terms of the scope of access, especially since non-Khmer materials are only offered through radio programs. It is likely that many provinces and schools that mainly serve an indigenous population will address distance learning with little government support and turn to community strategies in continuing education while combating the risks of COVID-19.

**ICT and Teaching Infrastructure**

Another important challenge to raise is the lack of technological literacy among students and teachers. Ms. Sothunthear, a Grade 11 teacher, spoke to Khmer Times about the lack of technology integration in Cambodian schools: “In the provinces, students and teachers are not yet properly familiar with the digital platforms. “Our normal learning method involves the use of chalkboards and whiteboards.” (Kanika 2020). In the 2017 Socio-Economic Survey, only about 2% of people from ages 6-24 in a non-formal school participated in a computer literacy class in 2017, with 95% of students opting to take foreign language courses instead. (National Institute of Statistics, Ministry of Planning 2018) In improving the Cambodian education sector’s capabilities in ensuring educational access, it is imperative for MoEYS to also invest in creating teacher training programs on effective communication skills and technological literacy in order to maximize the capabilities of their e-learning platforms. However, in expanding the educational sector’s digital capabilities, the government must also address the existing disparities between access to digital media channels and ensure that these reforms do not exacerbate inequalities across gender, socio-economic, and geographical lines.

**Economic Impact of COVID-19**

As Cambodia works to “industrialize” their education sector, policymakers must also pay attention to the impacts of COVID-19 in Cambodia’s economic landscape. Due to the lack of foreign tourists, Cambodia’s tourism and garment manufacturing industries have taken a substantial hit. Local reports from early May indicated that approximately 180 garment factories have suspended operations while 60 are close to suspending operations, affecting 150,000 workers. According to the State Secretariat of Aviation, air passenger numbers have fallen over 90% in April while ticket sales at the Angkor Wat, Cambodia’s most popular tourist attraction, have fallen by 99.5%. This is especially important to note because this highlights Cambodia’s economic challenges in supporting the education sector effectively during and after the pandemic.
Identified Best Practices
Some of the best practices that can be identified on the education in emergencies response in Cambodia are:

1) Utilizing Most Commonly Used Online Platforms As Hubs for Remote Learning - Due to Cambodia’s lack of technological infrastructure and the relative lack of technological literacy among students and teachers, using platforms that people are familiar with such as Facebook and WhatsApp is crucial in easing the transition to remote learning. This would minimize the amount of time it would take for parents, students, and educators to reconfigure functions of in-person instruction and maximize the multi-purpose settings of social media in creating troubleshooting centers, online community spaces, and lesson hubs without the need for learning more complex software. It would be relevant for other countries’ plans to address most commonly used pre-existing platforms because the response centers on the needs of the most disadvantaged populations (ie. low-income families in rural communities) as a crucial component of maximizing educational access during emergency situations. That being said, in using online platforms, the government must strive to provide the necessary resources (ie. internet access, media channels) to ensure nationwide access to this educational platform. Similar to Cambodia’s Economic Survey, consulting a media needs assessment or survey would assist in determining which platforms are commonly used across geographical and socioeconomic lines.

2) Ensuring Access to Culturally Relevant Literature and Resources - Drawn from the history of Cambodia’s education system and the importance of preserving Khmer culture, continued access to culturally relevant literature through initiatives such as the All Children Read project is crucial in maintaining the integrity of Cambodian education during emergency situations. Although this practice is tailored to Cambodia’s own education system, it would still be relevant for other countries to address access to culturally relevant material because this practice acknowledges the nuances of education for students from a variety of backgrounds. This would be best supplemented by supplemental resources that encourage development of metacognitive skills and scaffold engagement of these resources.

3) Provision of Multilingual Materials - Although the extent of this practice’s reach is not as extensive as MoEYS’ e-learning initiative, provision of multilingual materials ensured educational access to Cambodia’s ethnic minorities. It would be relevant for other countries to address educational access for multilingual populations because this practice would alleviate the resource disparity between the majority and minority populations. In creating these materials, consultation from local officials in mobilizing this provision is key to adapting remote learning strategies to the needs of the community.
Turkey

Confirmed Cases: 166,422 (4,609 deaths)

School Closures and COVID-19
On March 16, 2020, the national government ordered a shutdown of all schools, affecting approximately 19,000,000 students in primary and secondary education, including 680,000 students from refugee populations (UNICEF Turkey 2020). There were 6 confirmed cases of COVID-19 at the time of the school’s closure. Of these 19,000, 000 students, approximately 5,267,368 students are enrolled in primary education. Turkey was chosen as a case study as it had one of the largest populations of school-aged children in the region. All schools transitioned to distance learning platforms with support from the state, international partners, and the private sector.

As of May 18, 2020, the Ministry of Education announced that it would continue remote learning programs until the end of the school year on June 19 with no make-up classes in the summer. The Minister of Education, Ziya Selçuk, earlier stated that students automatically advance to the next grade in line with their grades from the previous semester, regardless of their current average. It is likely that schools will open in September 2020 at the earliest (Hurriyet Daily News 2020).

COVID-19 Education Response
The Ministry of Education has spearheaded Turkey’s educational response to COVID-19. Second only to China, Turkey is one of the two countries in the world that is providing nationwide distance education during the pandemic. Central to their distance learning strategies is the increased capacity of the Educational Informatics Network (EBA), an online education platform, and the three TV channels newly established by the state-run Turkish Radio and Television Corporation (TRT) designed to supplement the platform. Although a combined online platform-TV approach is foundational to Turkey’s educational response, other distance learning strategies such as daily phone calls, WhatsApp messaging, education kits in order to facilitate distribution of education materials and continue instruction during the pandemic.

Online/Internet Platforms and TV
The Education Informatics Network offers over 1600 classes for students in grades 1-12 and over 20,000 interactive texts. The television programming is divided into primary, secondary, senior high school students and broadcasts 20-25 minute lessons until the evening. Students are recommended to attend lessons through the EBA TV channels and use EBA to reinforce their learning, ask questions, and complete problems or worksheets. Due to issues of system overload, students are also informed what hours are most optimal for logging onto the platform. In addition to lesson materials, art, sport, and science activities are also integrated into television broadcasting and EBA programming with over 40 experimental videos to follow under parent supervision. Although this is mainly piloted
with secondary and senior high school students, the Ministry is currently piloting a program for teachers and students to hold live class sections, which will be expanded to all of Turkey following the completion of the pilot program. (Bakanlığı April 2020). Additional supplemental support for students, parents, and other educators include the EBA Assistant (for troubleshooting questions about the EBA), the EBA Academic Support System (a program that uses artificial intelligence to help students tailor their individual study goals), and the e-guidance program (an app and program that gives students and parents access to counseling and psychological support services). (Republic of Turkey Ministry of Education 2020, NEARLY 1 MILLION; WITH EBA ASSISTANT)

Starting from June 29, the TRT EBA channel will host a series of broadcasts consisting of design skills workshops, a limited number of academic courses, and English classes. Although face to face remedial, adaptation, and orientation training for officials and educational institutions will start on August 31, the TRT EBA channel and EBA platform will be used in addition to face to face instruction. (Republic of Turkey Ministry of Education 2020, TURKEY MADE)

Ensuring access to distance learning platforms has also been key in Turkey’s COVID-19 educational response. Turkey’s three major GMS providers are providing 8GB of free internet access for students who want to use EBA to access class material. (Bakanlığı April 2020)

Low-Technology Media Channels
A UNICEF monthly report has also attributed the contribution of domestic and international organizations to increasing educational access to students from vulnerable families and refugee populations. In collaboration with the Turkish Red Crescent, UNICEF distributed 5,000 PSS kits (including activity books, toys, and art supplies) to 2,500 vulnerable families in Southeastern Turkey. UNICEF has also secured learning and COVID-19 hygiene kits for 15,000 vulnerable Turkish and refugee households from 26 provinces, benefitting an estimated 48,000 children who would not normally have access to education and health resources. Daily phone calls and WhatsApp messaging from a network of over 200 teachers in Southeastern Turkey also gave educational advice for parents in teaching their children, an initiative benefitting over 5,200 children. Multilingual resources (mostly in Turkish and Arabic) are also available. (UNICEF Turkey)

Distance Education Statistics: March 23 - June 19, 2020
Between March 23 and April 30, 2020, the Director General of Innovations and Education Technologies, Anıl Yılmaz, reported EBA to have been accessed 1.2 billion times - 66% of them from mobile devices, 29% of them from PCs and 5% from tablets. Approximately 6,090,383 domestic students and 800,000 foreign students have accessed EBA (Bakanlığı May 2020; Republic of Turkey Ministry of Education 2020, EBA UPDATES). Between March 23 and May 7, 2020, school guidance, psychological consulting services, and research centers affiliated with the Ministry of Education provided services to 7 million students (Republic of Turkey Ministry of Education 2020, GUIDANCE SERVICES). As of June 19, 2020, EBA has been accessed approximately 3.1 billion times with 7,383,213 student users. The updates to EBA over the past three months allowed 18 million students to use the program for 24 hours over seven days. EBA’s live classroom application, which aimed to incorporate interactive teaching through live lessons, accommodated 5,954,174 classes by the end of the school year. (Republic of Turkey Ministry of Education 2020, TURKEY MADE)

**Challenges**

*Digital Divide*

Assessing the Ministry of Innovations and Education Technologies survey indicates a limitations to the extent of educational access to distance learning materials across Turkey’s 19 million student population. Although the EBA has been crucial to Turkey’s education response to COVID-19, roughly only 32% of Turkey’s student population accessed the online platform. 36% of the student population received access to school, research, and psychological assistance affiliated with the Ministry of Education (Republic of Turkey Ministry of Education 2020, EBA UPDATES, GUIDANCE SERVICES). According to the 2020 Digital Report on Turkey, the country has an internet penetration
rate of 74%, which is still not ideal considering that the average rate of internet penetration in Europe is 88% (Kemp 2020). Connectivity issues are mitigated by the availability of learning kits and delivery of education materials to underserved communities and refugee populations; however, it is worth noting that these interventions were carried out by private or foreign entities like UNICEF.

Teaching/Education Infrastructure
Even though Turkey’s expenditures on education amount to 5.4% of GDP (higher than the average of 5% across OECD countries), spending per student still remains low and the education system is heavily reliant on private funds (OECD 2019). The Turkish Statistical Agency reported on spending 8,761 Turkish Lira (equivalent of $1,798 in US Dollars) per primary school student in 2018 - a number that has been the product of a downward trend of spending since 2014. Additionally, approximately 25% of total spending on primary education in 2018 is still attributed to private sources with pre-primary and primary education being the least funded sectors of the Turkish education system (Table: Education Expenditure). These findings highlight the limitations of the Ministry of Education in being able to financially provide for their student population and the reliance of private partners like UNICEF to aid populations outside of their scope. Improvements in their educational response will include reattribution of educational expenditures to spend more on each individual student and coordinate a joint effort with the private sector to increase the accessibility of the revamped EBA or an equivalent, low-technology based alternative to underserved populations. Since the core media channels of their response relies on either internet or TV access, it would be worthwhile to conduct a media channel availability needs assessment for each province and tailor delivery of educational materials based on the most available medium (ie. perhaps exploring radio programs as a potential option).

Identified Best Practices
Some of the best practices that can be identified on the education in emergencies response in Turkey are:

1) Nationwide Approach to Distance Education - Investing in nationwide educational infrastructure ensures a commitment to providing equal access to educational opportunities while minimizing the impact of socio-economic obstacles in the most vulnerable populations. It would be relevant for other countries to adopt a more centralized approach to distance education because the use of a nationwide platform allows for a more coordinated response in maximizing access to resources and addressing troubleshooting issues to a large portion of the population. Contingent to this will be the provision of low-cost or free accessibility to relevant media channels used to make the most of the amenities available in this platform. That being said, a nationwide approach will need to be cognizant of the needs of each province or state in ensuring that the platform can be easily adapted to pre-existing educational practices and resources within the community.

2) Provision of Individualized Academic and Psychological Support Systems - Additional applications such as the EBA Academic Support System and the e-guidance program provide students, parents, and educators crucial support in
addressing the psychological impact of the absence of in-person interactions and instruction during the pandemic. This practice is especially relevant in addressing the long-term impacts of distance education on mental health and maintaining the quality of academic continuity - especially if the pandemic or other future emergency situations warrant a prolonged need for social distancing and distance education measures.

3) **Provision of Learning Kits to Students who do not have Reliable Access to Digital Media Channels** - Because there is heavy reliance on technological solutions in addressing distance learning, educational responses in emergency situations can exacerbate inequities between communities that have access to digital media channels and those who don’t. As such, it is crucial to also provide low-cost and low-tech educational materials for communities that lack the technological infrastructure to reliably access online platforms. This practice is especially relevant for countries to adopt in their current responses in order to continue providing educational opportunities to communities that are most impacted by the transition to distance learning. These learning kits would be best supplemented with the provision of additional support to local educators and officials in providing alternative support services for students to continue their education in the long-term.
Albania

Confirmed Cases: 1,197 (33 deaths)

School Closures and COVID-19
On March 9, 2020, the national government ordered a shutdown of all schools, affecting approximately 611,062 students in primary and secondary education. There were 2 confirmed cases of COVID-19 in Albania at the time of the schools’ closure. Of those 611,062 students, approximately 162,170 learners are enrolled in primary education (Albania Institute of Statistics, Table: Pupils 2020). Many of these schools have transitioned to distance learning platforms through mobilization of national, digital, and community resources. Although Albania is not as populous as the other countries in this study, it was chosen due to a significant portion of the student population being affected by a recent emergency where an educational response was warranted prior to COVID-19.

Nonetheless, after suspending classes due to COVID-19, in May 18, 2020, the Municipality of Tirana permitted suburban high schools to reopen for high school seniors with strict social distancing guidelines (Beqiraj May 2020). On June 1, 2020, Albania reopened kindergartens and nurseries, allowing 77,858 students back into educational facilities. (Beqiraj June 2020) Due to the decrease in COVID-19 cases and the capabilities of Albanian hospitals to treat incoming cases, Albania is in the process of reopening parts of the economy and its land borders with neighboring countries while abiding by strict safety protocols.

Impact of the November 2019 Earthquake in Albania’s COVID-19 Education Response
Although Albania is not a strong hotspot of the COVID-19 outbreak, it is to be noted that Albania was hit by a strong 6.1 magnitude earthquake in November 2019, which took a substantial toll on the physical infrastructure and economic activity prior to the shutdown due to COVID-19. The earthquake and decrease of energy production diminished Albania’s gains in GDP growth from 4.1% to 2.2% growth in 2019, leaving the country with a limited budget prior to 2020 (Gurria 2020). According to the damage assessments from the Construction Institute of Albania, the greatest amount of damage in Albania’s educational institutions happened in Western Albania, including the most populated provinces, Tirana and Durrës, where over half of the total population resides. On April 15, 2020, the European Union (EU) approved a €15 million fund to accelerate the reconstruction of educational facilities damaged by the earthquake. The beneficiaries of this fund include schools in five municipalities - Kavaja, Kruja, Kamza, Durres and Kurbin - based on the Post Disaster Needs assessment with a plan to reconstruct five kindergartens, eleven elementary schools, two high schools, three joint schools and one professional high school. The total number of students and teachers that will benefit will amount to approximately 7,500 across the five municipalities.

As a result of the severe damage to educational institutions, some students and teachers have been unable to go to school consistently since November (Halili 2020). However,
The findings of a survey conducted by Celaj and Bushati (2020) show that 96% of the surveyed students participate in online lessons. Among the surveyed students, 59.1% lived in urban areas and 36.6% lived in rural areas. In regards to collaboration between UNICEF, MASR, and local authorities provided a coordinated structure for an educational response to emergencies prior to COVID-19. UNICEF Situation Reports detail UNICEF’s cooperation with the Ministry of Education, Sports, and Youth (MASR) in allowing students to proceed with their regular school routine in the earthquake’s aftermath through the installation of Temporary Learning Spaces (TLS) and provision of basic school supplies. A rapid assessment of the affected areas enabled UNICEF and MASR to establish 4 TLSs (two pre-schools and and two schools for grades 1-5), which served 200 children, and provide school bags and materials to an additional 200 students (De Bernadi, R., & Aslam, J. 2019). A February 2020 Post-Disaster Needs Assessment from the World Bank reported the relocation of more than 21,000 students from affected areas to neighboring schools and temporary learning centers, many of which were set up in hotels where families also took shelter (The World Bank 2020). Additionally, the establishment of Child Friendly Spaces (CFS) provided support to 315 children by promoting activities that encouraged building resilience, overcoming psychological distress, and improving social skills (Miria 2019). Although the reports do not detail continuation of these programs beyond February, the structures of TLS and CFS were likely adapted to incorporate remote learning strategies due to COVID-19.

**COVID-19 Education Response**

MASR has spearheaded Albania’s educational response to COVID-19 with the Independent Trade Union of Education of Albania (ITUEA), a teacher trade union that has long advocated for the rights to quality education, providing recommendations to ensure educational access. Due to the lack of internet access in remote areas and the costs of procuring broadband and other digital devices, MASR made all lessons available on national TV channels and urged some internet providers to cut their fees in half. In order to help students access online platforms, the Vodafone Albania Foundation also launched its #RedForKids initiative, donating 5,000 smart devices and SIM cards with unlimited online learning data access to children in low-income households. (Vodafone Albania Foundation 2020)

In collaboration with UNICEF, MASR expanded a budding virtual learning platform, akademi.al, in making more than 2,000 lessons free to all students ages 3-18. These lessons are also available in national television broadcasts. Akademi.al also uploaded 1,100 new lessons to support students who are taking national exams, and provided necessary learning support by providing video explanations to exam questions. In addition to the website, UNICEF and MASR are also ensuring that video lessons have voice-only, text-only, and video-only options for students with disabilities, which will be available in their new software release. As of June 29, 2020, more than 250,000 students have benefited from online learning, and the new software release is projected to support more than 500,000 users. (Celaj and Bushati 2020).

On April 14, 2020, MASR published the results of a survey from 220,000 pupils, teachers, and parents on online learning progress during COVID-19. An analysis of the main findings show that 96% of the surveyed students participate in online lessons. Among the surveyed students, 59.1% lived in urban areas and 36.6% lived in rural areas. In regards to
device usage, smartphones are the most widely used application to access online lessons (95.7% for students) with 2.2% use tablets, 1.2% use laptops, and 0.9% use computers. RTSH Shkolla, a TV program broadcasting lesson material, are watched by 78.9% of surveyed students. Those who have not been able to follow the broadcasts watch the videos on MASI’s YouTube Channel (used by 51.1% of surveyed students) and akademi.al online learning platform (used by 61.3% of surveyed students) (Skaka 2020).

**Challenges**

**Digital Divide/ICT Infrastructure**

Considering that much of Albania’s education response during COVID-19 relies on access to the internet, accessibility still remains an issue. According to a 2020 Digital Report on Albania, the internet penetration rate is 72%, which is notably lower than the European average of 88%. Despite making significant strides on the spread of the internet through Albania, household possession of internet access and access to a personal computer is remarkably low with 27% and 23% from 2016 data in a UNESCO report. However, the access to a desktop computer may prove to be inconsequential. In a UNICEF’s report on children’s internet use in Albania, 87.2% of the surveyed children (1,000 participants total) use smartphones to access the internet weekly more than any other device. This finding remains consistent with the Digital Report’s findings on mobile connections in 2020, which is 4.12 million mobile connections in January 2020 (Dunja 2020; Kemp 2020). About 50% and 63% respectively have never used a desktop computer or a tablet respectively to access the internet. This is indicative of the relative accessibility and affordability of smartphones and should be taken into account in providing mobile-based solutions in Albania’s distance learning response. The surveyed children on the UNICEF report highlight affordability of data and internet (19.5%) as a barrier to internet access; however, the majority of children surveyed (57.1%) reported parental opposition as a main reason why their access to internet is limited by a considerable margin. Although parental attitudes towards the internet might have changed as a result of the online transition to distance learning, this finding suggests that policies on changing parental attitudes might be more impactful to increase internet accessibility than policies that seek to minimize the costs of access or improve connectivity. (Dunja 2020)

**Teaching/Education Infrastructure**

Children’s limited access to the internet - either due to parental or financial constraints - provides fewer opportunities for students to develop skills in digital literacy. It also appears that parents themselves likely won’t be able to help teach their children due to their own limited interactions with the internet. 28.1% of surveyed parents report to never have consistent, frequent access to the internet while 24.2% of surveyed parents report to sometimes having consistent, frequent access to the internet. Although the table below indicates that children are more confident in a variety of digital skills than parents, overall children and parents are less confident in their creative skills (ie. “I know how to design a website” or “I know how to post online video), which is consequential in determining how
well students and educators are able to maximize digital distance learning strategies to their creative potential. However, this finding is also helpful in gaining insight on what will be effective in Albania’s education response since many of the surveyed children are confident with basic digital skills (ie. how to install apps, how to find a website that they have visited before). If Albania’s education system were to incorporate more participatory and project-based activities in distance learning, there will be a need to incentivize students and parents to engage in more creative online activities and develop more creatively demanding digital skills.

Table 1. Children and parents who report being fairly or very confident in a digital skill (%)

<table>
<thead>
<tr>
<th>Skill</th>
<th>Parents</th>
<th>Children</th>
<th>Age group (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know how to install apps on a mobile device</td>
<td>54.6</td>
<td>80.1</td>
<td>66 79 91</td>
</tr>
<tr>
<td>I know how to remove people from my contact list</td>
<td>70.2</td>
<td>71.8</td>
<td>44 78 89</td>
</tr>
<tr>
<td>I know how to save a photo that I find online</td>
<td>55.7</td>
<td>66.7</td>
<td>43 69 84</td>
</tr>
<tr>
<td>I know what I should and shouldn’t share information online</td>
<td>68.7</td>
<td>64.6</td>
<td>33 71 66</td>
</tr>
<tr>
<td>I know how to open a new tab in browser</td>
<td>54.5</td>
<td>63.0</td>
<td>48 60 77</td>
</tr>
<tr>
<td>I find it easy to find a website I have visited before</td>
<td>53.6</td>
<td>61.1</td>
<td>43 63 74</td>
</tr>
<tr>
<td>I understand which information I should and shouldn’t share</td>
<td>62.6</td>
<td>59.6</td>
<td>31 63 80</td>
</tr>
<tr>
<td>I know how to open downloaded files</td>
<td>44.3</td>
<td>54.4</td>
<td>28 55 74</td>
</tr>
<tr>
<td>I know how to change my privacy settings</td>
<td>47.3</td>
<td>53.7</td>
<td>19 54 82</td>
</tr>
<tr>
<td>I find it easy to choose the best keywords for online searches</td>
<td>48.6</td>
<td>48.6</td>
<td>30 48 65</td>
</tr>
<tr>
<td>I know how to post online video or music that I have created</td>
<td>37.3</td>
<td>46.1</td>
<td>25 46 63</td>
</tr>
<tr>
<td>I know how to edit online content that others have created</td>
<td>24.2</td>
<td>45.4</td>
<td>25 40 66</td>
</tr>
<tr>
<td>I find it easy to check if the information I find online is true</td>
<td>32.9</td>
<td>36.2</td>
<td>17 35 52</td>
</tr>
<tr>
<td>I how to block pop-ups that I don’t want</td>
<td>26.5</td>
<td>34.5</td>
<td>18 31 51</td>
</tr>
<tr>
<td>I find it easy to decide if a website can be trusted</td>
<td>29.9</td>
<td>34.2</td>
<td>16 32 50</td>
</tr>
<tr>
<td>I know how to use a programming language</td>
<td>18.0</td>
<td>24.3</td>
<td>8 23 37</td>
</tr>
<tr>
<td>I know how to design a website</td>
<td>11.5</td>
<td>20.2</td>
<td>10 16 32</td>
</tr>
</tbody>
</table>

Q: Thinking about how you use the Internet, how true are these things true for you? Base: Child (N=1,000) and parent (N=680) Internet users. Percentage of fairly true + very true answers


Identified Best Practices

Some of the best practices that can be identified on the education in emergencies response in Albania are:

1) Utilizing Pre-Existing Education in Emergencies Response - Although the November 2019 earthquake presented a unique situation for Albania prior to COVID-19, the concurrent needs assessments in their educational infrastructure provided a framework for how educational needs were going to be met for students whose in-person instruction was disrupted due to an emergency situation. These assessments provided MASR the most recent information on the state of the
country’s infrastructure prior to COVID-19. Assessing educational responses to previous emergencies would be a relevant practice for other countries’ own responses in order to accurately assess what media channels would maximize accessibility to educational opportunities at the local, provincial, and national level. These assessments would allow for a more coordinated and equitable response in meeting the needs of their population.

2) Provision of Accommodations for Online/Video Lessons - Due to the heavy reliance of technological solutions in distance learning, it is crucial to develop different modalities of engaging with virtual lessons to students with conditions that would not enable them to engage with the platform. While this practice is crucial for meeting the needs of students with disabilities, this is also a relevant practice for countries to adapt in regards to improvements on how online platforms and media channels can be used to cater to different types of learning styles. Although these accommodations were mostly provided in Albania’s akademi.al platform, this practice also invites critical discussion on how to use available media channels in making distance education more habitable for different learning and teaching approaches.

3) Mobilizing the Private Sector in Lowering Accessibility Barriers - A coordinated educational response to distance learning needs the cooperation of media providers and access to sufficient finances in order to address accessibility issues among low-income and/or rural communities. Thanks to the efforts of organizations, Albania was able to procure necessary equipment, devices, and internet access to a wider reach of the population. Considering that the private sector can present limitations of a government response, this would be a relevant practice for many countries to adopt in order to extend the state’s efforts in providing educational opportunities to vulnerable communities and address the government’s financial limitations in being able to do so. Assistance from the private sector and foreign NGOs become especially crucial for countries whose economies are not prepared to spearhead an equitable educational response. In mobilizing the private sector however, the interests of private companies should be worth considering in order to ensure an equitable education response during emergencies.
India

India is the second-most populous country in the world, the seventh-largest country by area, and the most populous democracy in the world. The first case of COVID-19 was reported in India on January 30, 2020. As of June 22, 2020, the Ministry of Health and Family Welfare has confirmed a total of 410,461 cases, 227,756 recoveries and 13,254 deaths in the country. India currently has the largest number of confirmed cases in Asia, and has the fourth highest number of confirmed cases in the world with the number of total confined cases. Six densely populated urban cities account for around half of all reported cases in the country. These cities are Mumbai, Delhi, Ahmedabad, Chennai, Pune and Kolkata.

On March 24, 2020, Prime Minister Narendra Modi ordered a nationwide lockdown for 21 days. This was followed with subsequent extensions of the initial lockdown. On March 16, 2020 the Union government declared a countrywide lockdown of schools and colleges. The school closures affected roughly 320m children across the country. Educational institutions might stay closed for the rest of the year to curb the spread of the infection. The state governments will decide in July 2020 to discuss reopening strategies of schools and colleges.

Education in India

Education in India is provided by public schools and private schools. Majority of students from rural communities study in the government schools where students study for free until the age of 14. A 2017 Education Ministry data reports that 65.2%, approximately 113 million of all school students in 20 states go to government schools.

COVID-19 Educational Response

The Union Ministry of Human Resource Development has made several arrangements, including online portals and educational channels through Direct to Home TV and radio programming, for students to continue learning.

State-specific appropriate strategies have been developed to support learning that allow students, teachers and parents to utilize flexible remote and home-based learning. This includes reading materials, radio and television content, internet-based learning and e-learning applications. According to the Broadcast Audience Research Council India, in
2017, television reaches approximately 475 million people every day across the country and radio reaches 110 million. Since the television and radio penetration is higher among the rural population of the country, who make up a majority of the population, remote learning initiatives dispelled via these channels will reach students from all socioeconomic backgrounds.

The Ministry of Education is encouraging students to download e-learning apps. Additionally, the ministry has also developed an integrated teacher training program via mobile app to facilitate and encourage teachers in their online teaching. Amid this new challenge, states and schools, both government and private, are using multiple platforms like WhatsApp, Zoom, text, radio and TV to reach students.

**Distance Learning Strategies**

**Radio and Television**

To overcome the lack of accessibility to technology in most parts of the country, states provide targeted programming for school children via radio and television. For example, in the state of Madhya Pradesh, under Radio School, all the centers of All India Radio will be broadcasting programs from Monday to Saturday from 11am to 12pm. In the state of Maharashtra, the State Council for Education Research and Training air content on radio and television for students who don’t have internet access. In the state of Punjab, Doaba Radio (online radio) has started giving one hour program 'Suno Sunawa Paath Prawa' for the students from 3 PM to 4 PM where recorded lectures of government school teachers are played and students can listen to them. In the state of Bihar, among India's poorest, the government is working on a radio programme for junior classes till Grade 6. It has also started television classes on Doordarshan Bihar for higher classes.

The Ministry of Human Resource Development conceived a group of 32 Direct to Home (DTH) channels devoted to broadcasting free educational programs through television. The initiative is called Swayam Prabha and is accessible across the country, round the clock. The channels air courses for school education, higher education and vocational education as well as for teacher training, including teaching videos, weekly assignments, exams and credit transfers. Subjects include science, humanities, technology, engineering, medicine, agriculture, performing arts and the social sciences. The initiative was launched in 2017 to facilitate access to education for students located in rural and remote parts of the country. In 2019, the platform had almost 15 million views.

To overcome the disruptions caused by COVID-19 to school curriculum, the government is preparing to launch 12 new channels to circumvent the digital divide. The content will be
available in regional languages to reach a wider network of students across the country. Most states already running educational content on the government owned Doordarshan television

**E-learning platforms**

The Union Human Resources Development Minister shared various free digital e-learning platforms by the Ministry for students during the COVID-19 based school closures. The DIKSHA portal contains video lessons, worksheets, textbooks and assessments. The content has been created by the Central Board of Secondary Education and the National Council of Educational Research and Training. The educational content is available in multiple local languages and can be accessed by students, teachers and parents. Another online application is e-Pathshala by the National Council of Educational Research and Training that houses books, videos and audios for students in grades 1 to 12 in multiple languages.

The National Repository of Open Educational Resources (NROER) portal provides a host of resources for students and teachers in multiple languages including books, interactive modules and videos including a host of STEM-based games. Content is mapped to the curriculum for classes 1 – 12, including aligned resources for teachers.

**EdTech platforms**

Online learning, in the form of MOOCs (massive open online courses) are booming during the lockdown period. EdTech platform Byju’s, which offered its content for free to students, during the lockdown period, saw an immediate 3x increase in the number of users. As many as six million new users joined the platform in March 2020. The Byju’s app and website witnessed a 150% increase in traffic in March 2020. Other popular education apps include Unacademy, Vedantu, and Toppr. Google and KPMG estimated in a 2017 report that India’s online education market will be worth $2b in 2021. School closures and distance learning is facilitating the growth of the online education market in India even further.

**Distance Learning Partnerships**

Microsoft has partnered with schools in New Delhi to enable teachers and students to continue virtual learning on the Microsoft Teams platform. Microsoft representatives held training workshops for teachers of The British School, New Delhi, on Teams and created step-by-step guides for both teachers and students.
NGOs and social enterprises are aiding the facilitation of remote learning for students without access to technology, either independently or by partnering with state governments.

Avanti, a social-educational enterprise set up in 2010, has launched a free learning app in Hindi for Government school students from grades 9 to 12. The app has recorded video content, solved examples and quizzes in the National Council of Educational Research and Training topics of Mathematics and Science. Avanti also conducts free live classes for students on YouTube, TikTok, Facebook and other social media platforms. The organization has partnered with the State Governments of Haryana, Rajasthan, Jharkhand and Madhya Pradesh to make its free content accessible to over one million students.

ThinkZone, a startup from the state of Odisha, is using voice messages, text messages and radio to help households with no Internet access. It has partnered with a local radio channel to broadcast activity-based learning modules for students aged three to ten. The activities are available in Odia, Hindi and English. In April, through SMS and IVR, the platform reached over 5,000 families.

The school education department of the state government of Maharashtra in partnership with UNICEF India has launched an online career portal for students of classes 9 to 12. The portal will allow students to seek information on career pathways, details on education, entrance exams and earning based on their interests.

UNICEF partnered with the Department of Women and Child Development, State Government of Chhattisgarh to reach out to children through their vast network of anganwadis (learning centres for children aged between 3 – 6 years) workers. More than one million children in Chhattisgarh will benefit from the campaign with the added support of the government, networks of media, youth, school administrations, youth wings of the political parties, influencers and others. Campaign Chakmak aims to ensure that children from all walks of life have access to learning irrespective of access to technology. The government of Chhattisgarh also launched the 'Sajag' programme with the technical support from UNICEF to help anganwadis and volunteers support parents and caregivers with their children’s education while at home. The Media Collective for Child Rights, a collective of more than 700 reporters and journalists for children, is leading the campaign at district and village level. The reporters and journalists have provided a list of activities and tasks that both parents and children can engage in together.

Additional Measures
For students without access to the internet, laptops and smartphones, but with a feature phone, teachers use voice messages, text messages and phone calls. For students without access to the internet and laptops but with a smartphone, teachers send longer videos and use WhatsApp groups for discussion. Teachers post notes and assignments on the class group on Whatsapp, and students call teachers to clarify doubts. To reach girls, most of whom had no access to phones due to societal bias, teachers even called fathers to ask how they were doing and to enlist their support for their daughters’ education.

To all those receiving benefits from the National Social Assistance Program - home delivery of school feeding meals in the state of Kerala; additional in-kind/food benefits in some areas. The national government has asked state authorities to distribute grains or cooked meals to children’s homes or to provide parents with cash to ensure that students are still getting the basic nutrition they would be receiving from school lunches.

**Challenges**

**Digital and media penetration**

India’s monthly active internet user base is currently estimated at 574 million, the number of monthly active internet users has grown 24% over that of 2019. COVID-19 induced national lockdown will likely grow the monthly active internet user base to almost 639 million by December 2020. *(Kantar ICUBE 2019 report on digital adoption and usage trends in India)* Despite the large number of internet users in the country, the internet penetration levels stood at 41% as of June 2019.

As of 2018, of the total internet users, almost 390 million access the internet via their mobile phones. Radio reaches 65% of the country’s population, almost 110 million. Television still has the deepest penetration with 82% of the population which is approximately 475 million people every day. *(2018 Broadcast Audience Research Council (BARC) India Report)*

**Lack of Infrastructure and Socio-economic Divide**

India’s immense digital divide—with embedded gender and class divides continues to be a major challenge, in spite of the many responses that have taken shape. The 2017-18 National Sample Survey reported only 23.8 percent of Indian households had internet access. In rural households (66 percent of the population), only 14.9 percent had access, and in urban households only 42 percent had access. Furthermore, only 16 percent of women had access to mobile internet, compared to 36 percent of men. Young people’s
access is even less with only 12.5 percent of students owning or having access to smartphones.

With the existing digital divide, learning inequality will widen further and increase dropout rates due to disruption in learning caused by COVID-19 (Centre for Budget and Governance Accountability). Delayed or paused education will create learning gaps for the students and will be harder to mitigate even with remediation efforts. Out-of-school children are at an increased risk of child labour, forced marriage and violence-based conflicts.

**Lack of Support and Increased Reliance on Parents**

A report from UNICEF India found that the helpline CHILDLINE 1098, which has been declared an emergency service by the Minister of Women and Child Development, has indicated that during two weeks of the lockdown in April 2020, the number of calls of children in distress had increased by 50 per cent. Restrictions in movement and closure of preschools and schools due to lockdown has put immediate pressure on parents for their children’s survival, care and learning. This added stress can lead to potential violence against children.

**Lack of Teacher Training**

Teachers across the country have been abruptly pushed into the uncharted territory of online classes. As the lockdown in India began, premium private schools were quick to resume classes using online platforms like Zoom, Google Meet, etc. Teachers were imparted training in using the software. But online teaching has provided challenges for teachers, For example, as reported in Quartz India, students have been logging in with fake names and locking teachers out of video calls. Some teachers do not have a computer at home and have been teaching through their smartphones. Adapting to online education is easier for English medium students and teachers due to ready availability of tools and
content. However, for teachers that teach in regional languages that dominate the Indian school education scene, it is harder to adapt to online teaching because the user guides of e-learning platforms and the interface of video conferencing apps are largely in English, making it difficult for teachers and students to adapt.

Additionally, in the northern state of Jammu and Kashmir, due to government-mandated internet restriction, bandwidth runs on a limited 2G network affecting over 2.7 million students in the state. This bandwidth is below the minimum requirement for video conferencing apps like Zoom, rendering many of these students unable to attend online classes or any online education resource.

**Identified Best Practices**

Some of the best practices that can be identified on the education in emergencies response in India are:

a) **Multilingual and multicultural education response** - Due to the vast multilingual and multicultural landscape in India, state governments are broadcasting educational content programming through radio, television and mobile apps in regional languages to have a wider reach. This would be relevant for other countries as well, since students have different linguistic and cultural backgrounds, as a result of increased globalization and migration, multilingual education can play an important role in engaging diverse learners.

b) **Private partnerships** - Companies like Microsoft and Google have announced initiatives so that teachers and students can access their platforms for free to facilitate online learning. Educational institutions are partnering with video conferencing platforms for seamless integration of e-learning through user guides and student management modules for teachers. The educational section on YouTube is available in multiple regional Indian languages to supplement curriculum learning. Other countries would benefit from partnering with tech companies to make online education more accessible and convenient.

c) **Rise of EdTech** - Given the pandemic and school closures, India’s educational technology landscape has seen growth in users and traffic during the lockdown period. Most of the edtech platforms have been providing free engagement with scheduled programming keeping up with the school syllabus. India’s edtech startup Byju’s has a $5.7 billion evaluation, another edtech platform Toppr has witnessed a 100 percent increase with free user engagement in March 2020. As educational institutions around the world continue to stay closed, education is no longer limited to the classrooms. Edtech startups offer free and open access to knowledge through interactive and engaging learning.
Pakistan

Pakistan recorded its first confirmed case of COVID-19 on February 26, 2020. As of June 22, 2020, Pakistan has 181,100 confirmed cases with 71,500 recoveries and 3,590 deaths. The province of Sindh has recorded the most cases at around 70,000. The province of Punjab has recorded the most deaths due to COVID-19 almost 1500 deaths. The country had a nation-wide lockdown until May 9, 2020, which was initiated on April 1, 2020. The lockdown was ended in phases around the country.

School closures

On March 13, Pakistan announced a nation-wide closure of all educational institutions. In the southeast province of Sindh, the school closures were announced on Feb 27. School closures to be in effect till July 15. Since March, Pakistan's government has imposed varying degrees of lockdown in different provinces. But in recent days, the government has loosened many lockdown restrictions, allowing smaller markets to reopen five days a week during daylight hours.

Prime Minister Imran Khan has maintained that a full lockdown is not economically sustainable for a country that was already in the midst of an economic crisis when its outbreak began in late February.

Digital and media penetration

As of January 2020, there are 76.38 million internet users in Pakistan with an internet penetration rate of 35%. The number of internet users in Pakistan increased by 17% between 2019 ans 2020.

Radio is one of the historical forms of mass media in the country, with state-owned Pakistan Broadcasting Corporation (PBC), reaching 98% of the population and almost 80% of the total area of Pakistan. In rural areas, accessibility and affordability of internet and television is limited, there is considerable reliance on radio.

On May 29, 2020, it was reported that more than 900 children under the age of 10 have so far tested positive for the new coronavirus in Pakistan's southern Sindh province.

COVID-19 Educational Response
Distance Learning Strategy
The Ministry of Federal Education launched programmed content for kindergarten through highschool students to offer alternative methods of distance education, since Pakistan's overall internet penetration is low. The Ministry of Federal Education is also developing educational content through radio programming. Private school students in urban areas with access to the internet were checking in with teachers through video conferencing. In some cases, students have been provided with study plans and extra coursework and in case of questions, can call their teachers.

The Ministry of Federal Education and Professional Training Government of Pakistan, on May 4 2020, released a framework in response to the reopening and resiliency plans of educational institutions in the country. While these plans have yet to be implemented, attached is a table illustrating the distance education method based on the technology available.

The government has tele education programming on national public TV channels to broadcast lessons for kindergarten to high school with one hour of content for each grade. In the province of Sindh, the government launched learning applications for students. Because of the low internet and smartphone penetration in the country, e-learning platforms are heavily underutilised.

Microsoft is supporting the Higher Education Commision (HEC) of Pakistan for the use of Microsoft Teams for remote learning in more than 100 public and private universities across Pakistan. HEC and Microsoft have created the Education Transformation Framework (ETF) – a foundational agreement modeled on the pillars of capacity building, skill certification and outreach campaigns.

In the province of Balochistan, schools are being funded under UNESCO’s Girls Right To Education Program, and are being provided with storybooks, hand sanitizers and soap.
UNESCO. The Balochistan Secondary Education Department has implemented an initiative for home-based learning through collaboration between parents, teachers and the Government.

Startups in Pakistan are using this opportunity to offer independent learning solutions, or partnering with the government and NGOs.

Power99 Foundation, in collaboration with its partner organization The Communicators Limited is using its network of radio stations to launch distance education to reach remote students. This is a 12-week, 45-minute non-formal education program for students in areas with almost no internet access. The content of the program will range from listening and speaking exercises to stories and games to address specific learning objectives.

Another example is of Edkasa which is using virtual classes to offer interactive learning opportunities for students while providing access to free learning material through YouTube. Knowledge Platform, another startup, is providing its services to economically disadvantaged students through blended learning solutions, and have a current user base of approximately 650,000 learners. Knowledge platform uses an adaptive assessment system that customizes learning per the student’s experience and assessment.

Challenges

More than 40% of Pakistan’s school-age children don’t attend school, the second highest-rate in the world. Education experts fear that the months-long closure of schools with minimal distance learning will exacerbate the problem. About 36% of Pakistani households have broadband internet access, according to government figures, but only 15.5% of the population used the internet in 2017, according to the World Bank. Because of the low rates of Internet access in the country, setting up online lessons with videoconferencing and interactive lectures would have been impossible, so most Pakistani children — those who attend government schools — were sent home with no further guidance.

Imtiaz Ahmed, a headmaster at a school in Pakistan’s northern Khyber Pakhtunkhwa province, said hardly any of his students have been able to see the program. Like most government school students in Pakistan, the children at Ahmed’s school are mostly from poor families of farmers or day laborers, and they cannot afford a television set.

A UNICEF report found that many of the 430m children affected by school closures in South Asia are now in danger of dropping out — online education isn’t always a solution since only 33% in the region have access to the internet.
A lack of unified national education strategy will have long term consequences on learning for the children. Since digital and tech-based learning solutions are not accessible to all children, learning losses might leave students behind in the curriculum.

A 2020 working paper found that the impact of the 2005 earthquake in Pakistan left children with learning gaps which accumulated over the years. Children missed three months of school after the earthquake. Four years later, their learning equivalent was 1.5 years behind had there been no earthquake. Similar situations might repeat during COVID-19 induced school closures. Remediation efforts to make up for lost time and lost learning might be able to bridge the learning gap. But teachers have to be trained to recognize the children’s learning levels.

Identified Best Practices

Some of the best practices that can be identified on the education in emergencies response in Pakistan are:

a) *Using television and radio as education response strategies* - To overcome the socio-economic and digital divide, the government adopted a blend of different learning modalities to expand outreach to reach children not enrolled in the education system, and those that do not have access to technology. This is an approach that will work in other countries for continuity of learning, through television and radio learning programs, since television and radio have higher penetration than the internet.

b) *Support for teachers* - The government of Pakistan has suggested frameworks to strengthen and support teachers to conduct distance learning. Providing teachers and schools with necessary guidance and tools for community outreach and increasing teaching workforce through partnerships with Teach For Pakistan, and organizing peer support groups for teachers. This will prove useful in other parts of the world to provide support to teachers as they make the transition to distance learning.

c) *Intervention plans for school reopening* - The government of Pakistan plans to develop and launch various ‘back to school’ campaigns that include clear messaging of safety procedures and safe practice measures for students, teachers and school administrators. The framework will also include procedures to find students that do not return to school and actions to facilitate their return, this is being done to ensure the decrease in school dropouts. The disruption in education due to the pandemic has increased the risk of school dropouts among poor communities around the world, active intervention measures will ensure the participation of students and enable their return to school.
Nigeria

School Closures and COVID-19

Nigeria has one of the most populous populations in the continent of Africa. In a short time, COVID-19 has disrupted the landscape of learning in Nigeria by limiting how students can access learning across the country and has posed unprecedented challenges on the already fragile Nigerian education system. On 27th February 2020 the Federal Ministry of Health announced the confirmation of the first case of COVID-19 in Lagos State, Nigeria. On March 19th, 2020, the Federal Ministry of Education granted approval for the closure of all schools for a period of one month commencing from Monday 23rd March 2020 to prevent the spread of the COVID-19. This will affect close to 46 million students throughout Nigeria and this sudden closure of schools will also add to the list of issues already faced by schools in Northern Nigeria.

COVID-19 Educational Response

In Nigeria, the Federal Ministry of Education and the Universal Basic Education Commission (UBEC) have collaborated with National and State governments to upload context-appropriate strategies and content for continuous learning that allow pupils, teachers, and schools to adopt multiple learning delivery modalities for flexible and remote/home-based learning, which may include homework assignments, reading material and a combination of traditional and digital media such as Radio, TV, online content, and internet-based learning.

This wide variety of mediums to support their remote learning initiatives, caters to the varying learning infrastructure and technology access of children who come from different socioeconomic backgrounds. According to Obiakor and Adeniran (2020), over 80 percent of the adult population in Nigeria have access to radios and mobile phones, this implies the high possibility to reach most children, even those from lower socioeconomic groups via these mediums.

The Federal Ministry of Education has also embarked on various partnerships with private tech companies and international organizations to enhance and support their remote learning initiatives. In late March 2020, the UNICEF office in Nigeria received a grant of US$140,000 from Global Partnership for Education to support the Ministry of Education with preparing a COVID-19 education strategic framework on continuity of learning. The funding supports an online digital platform, helps to strengthen states radio and television education programs, as well as printed take-home materials for students (Nigeria: Global Partnership, 2020).
Radio and Television
To cope with the challenges of internet access, Nigeria’s states provide lessons on older and more traditional media, the radio and television, on subjects ranging from English and maths to economics and chemistry. The timetables for these programs can be found on the Federal Ministry of Education website. In the state of Ogun, the Ogun state government has issued a directive that the students in the state would be provided with tele-tutoring at certain hours of the day (Adebowale, 2020). This initiative is named the OgunDigiClass which is a first of its kind in Nigeria to feature experienced Ogun State educators in primary and secondary schools with 21st-century innovative teaching and learning processes. These videos can be found on the e-learning platform of the OgunDigiClass website too.

Northern Education Initiative Plus (NEI Plus) is collaborating with UNICEF who developed more than 40 radio programs that will be aired throughout Bauchi, a state in Northern Nigeria, reaching 400,000 students and parents (USAID Helps Keep Bauchi Students, 2020) The radio learning programs are in line with the lessons in children’s textbooks, produced by NEI Plus, for grades one through three and will be broadcasted twice a day during May and June. With World Bank funding, another Northern state, the Sokoto state government is also producing radio programs to reach an additional 200,000 learners. The radio lessons are in English and Hausa, most children’s mother-tongue language in those two states. NEI Plus will also produce 40 radio programs to complement the already produced 40 radio programs by UNICEF.

Telegram Messaging
Some unity schools are using online messaging platforms like Telegram for ease of learning.

E-learning platforms
However, the access and quality to remote education varies by state in Nigeria. For the population with internet access, the proportion would be skewed towards high socio-economic households and urban households; an overwhelming majority of whom are private school students who already have a learning advantage over their public school peers. According to the Federal Ministry of Education, 5 out of 36 states are providing e-learning resources on their e-learning platforms. These 5 states are all located in the South, the wealthier parts of Nigeria, none of these are from the North where most are living in poverty and internet access is scarce.

For students with no access to data, the Federal Ministry of Education formed a partnership with 9mobile, a telecommunications company, to support the Federal Government's E-Learning program, especially during the COVID 19 period. Nigerian students will be given free data access to continue learning during the lockdown and they will be able to use the free data to access some E-learning portals such as the Khan Academy, Seesaw, Schoolgate and MobileClassroom.

Challenges

The chances of access and quality to education in Nigeria is correlated to income level. There is a huge disparity in education equality and attainment between the Northern and Southern states of Nigeria (Ukiwo, 2007). Thus, the population served by public schools and private schools are different. Learners who attend private schools are usually from higher socio-economic backgrounds, who are willing and able to pay more to access the better resources offered by private schools. On the other hand, public schools which are usually free, comprise students from lower socio-economic households and low-income areas.

Even though the Nigerian government has taken a wide range of strategies to deliver remote learning, the students from the rural and lower socioeconomic status will remain as the most vulnerable group affected by the school closures. According to the Digital 2020 Global Overview Report (2020), around 169.2 million people - 83 percent of Nigerians have access to mobile phone connections; however, of these, 50 percent - around 84.5 million people, reside in urban areas. For the population with access, a majority comprise of high socio-economic households and urban households, in other words, it will be an overwhelming majority of private school students who already have a learning advantage over their public school peers.

As of January 2020, there were 85.49 million internet users in Nigeria and the internet penetration in Nigeria stood at 42% (Digital 2020 Global Overview Report, 2020). As of 2017, 75.69% of the population use mobile phones as a primary platform for communication and accessing the Internet (Gillwald et al., 2018). Access to radio and television as information and communication tools is very pervasive with the penetration of radio probably reaching 90%, considering Nigeria has a long history of using radio broadcasting to conduct remote learning (Jegede, 2002).

Despite the high penetration rate of radio and TV in Nigeria, it is likely that there will be rural and underserved families that earn less than $1 per day who cannot afford the purchase of radios and TV and they will be left behind the various remote learning plans implemented by the Federal Ministry of Education (Amorighoye, 2020). Due to poor infrastructure such as lack of electricity and poor or no internet connectivity, students from rural and public schools will find it challenging to take up distance learning opportunities (Obiakor & Adeniran, 2020). A significant number of Nigerian households (22.21%) do
not have an electricity connection at all (Gillwald et al., 2018). Chair and De Lannoy (2018) stated that non-users of the internet in the rural areas of Nigeria lack awareness of the Internet, with more than 40 percent of them cited that the main reason they do not use the internet is because they do not know what the Internet is. This might also cause difficulties to implement distance learning through digital media as elementary school students might not be able to use digital media on their own.

Some states in Northern Nigeria have sent children from Almajiri schools back to their homes. Most of the remote learning resources are in English and other non-native Nigerian languages. Arabic is used for most subjects taught at Almajiri schools and these children might face difficulties learning in English.

Identified Best Practices
Some of the best practices that can be identified on the education in emergencies response in Nigeria are:

(a) Partnerships with private organizations
Like many other countries, Nigeria’s education system is not fully developed to meet the demands of distance learning, especially in the area of quality online learning resources that cater to the varying learning needs of students. However, the Federal Ministry of Education has encouraged the use of various international and established education sites to complement their existing learning resources. The government has also recognized the shortcomings of the technology infrastructure in the country and the financial ability of students from low socioeconomic backgrounds to conduct distance learning through high technology options. The partnership with private telecommunication companies ensure that all or most students will be able to have access to the internet and this implies that there will be a greater equity in learning.

(b) Taking a holistic approach in the usage of mediums for distance learning delivery
The government has shown that they placed a high emphasis on reaching out to as many students as possible, taking into consideration the varying socioeconomic status and geographical location of students. Besides using high technology tools such as the internet, radio and television broadcast of lessons, with well planned timetables for different academic levels of students, are still actively used during school closures. These two types of mediums might be considered as outdated in developed countries but in a huge developing country like Nigeria, these mediums are highly effective in achieving a higher geographical coverage, when it comes to education delivery, and this ensures that the learning needs of poor and rural students are also attended to.
Brazil

COVID-19 Educational Response

Because of the COVID-19 pandemic, governments worldwide have closed schools and implemented distance learning strategies to continue education. COVID-19 highly impacted Brazil, which is the country with the second-highest number of positive cases in the world. Brazil also has the largest population of school-aged children affected by shutdowns in Latin America and the Caribbean (UNICEF, 2018). The national government has not announced a shutdown of all schools, but the United Nations Education, Scientific, and Cultural Organization (UNESCO) has recorded localized closures or delays in all states since March 25th, 2020 (UNESCO, 2020). The closures have affected over 52.8 million students (Unesco’s Brasilia Field Office, 2020). Many of those schools have shifted to distance learning using national, state, and community resources.

To understand more about how the pandemic will affect children’s education in Brazil, it is necessary to know more about the epidemic itself and how the government is responding to it. The first known positive COVID-19 cases in Brazil occurred in Sao Paulo, its largest city, on February 26th (Serdan et al., 2020, 1). Today, Sao Paulo is the epicenter of the virus followed closely by Rio de Janeiro (New York Times, 2020). However, COVID-19 is affecting every state in Brazil, with almost 672,846 total COVID-19 cases and 35,930 deaths recorded by the Ministry of Health from June 7th (New York Times, 2020). While the national government has not initiated a lockdown, several states and cities have or are in the process of reopening (Biller and Savarese, 2020). Brazil’s educational response has been state-focused, as state governments decide what types of distance learning and support for low-income families will be given. The Ministry of Education has headed the national level response by offering technology and communications resources to state governments, as well as a proposal to postpone Brazil’s national university entrance exam (Agência Senado, 2020). This case study focuses on the Ministry of Education and state governments’ responses to support children’s education during COVID-19.

Distance Learning Strategy

As stated above, Brazil’s Ministry of Education is managing the national COVID-19 educational response, although state governments are providing independent support and instruction to schools. Brazil’s Council of Secretaries of Education has organized a website with communication and digital learning platforms for states to use, including the pre-existing national online learning platform, Connected Education (CONSED, 2020). Many of these platforms offer support for students and teachers as well as educational materials (e.g. video, games). There is also a post-COVID-19 platform called Banco Internacional de Objetos Educacionais that covers primary to tertiary education. The Ministry of Education is running a temporary educational TV channel focused on
promotion of literacy, and different state governments are providing online resources to teachers and students so that they can continue classes. Table 1 below elaborates on the different types of distance learning strategies and guidance state governments have provided. Table 2 in the Annex details the names of the distance learning platforms and instructions given by the state government. This table shows only state-provided initiatives. Individual schools may be employing distance learning methods are not recorded by the table.

Table 1: State Distance Learning Strategies

<table>
<thead>
<tr>
<th>State</th>
<th>Online</th>
<th>TV</th>
<th>Radio</th>
<th>Print</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acre</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Alagoas</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Amapá</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>textbooks</td>
</tr>
<tr>
<td>Amazonas</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Alagoas</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Bahia</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Youth and Adult Education Centers</td>
</tr>
<tr>
<td>Ceará</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
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<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Goiás</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Educational Centers</td>
</tr>
<tr>
<td>Espírito Santo</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Maranhão</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Mato Grosso</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Mato Grosso do Sul</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Minas Gerais</td>
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<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Pará</td>
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<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Paraíba</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Paraná</td>
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<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Pernambuco</td>
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<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Piauí</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Rio de Janeiro</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Free academic Internet</td>
</tr>
</tbody>
</table>

38
<table>
<thead>
<tr>
<th>State</th>
<th>Offered Psychosocial Support</th>
<th>Offered Talk Radio</th>
<th>Offered Special Education at State Centers</th>
<th>Offered Free Student Mobile Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rio Grande do Norte</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Rio Grande do Sul</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Rondônia</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Roraima</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Santa Catarina</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>São Paulo</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Psychosocial support talk radio, special education at state centers

*Tocantin’s data is blank because it is currently on a vacation period.

As seen in Table 1, many state governments are delivering education through multiple channels. Diversifying educational delivery methods (utilizing Internet, TV, radio, paper, etc.) has been shown to be effective in providing equal access to learning during education in emergencies interventions (Burde et al., 2015, 21). It is clear that Brazil’s states have very disparate strategies for distance learning during COVID-19. This is a positive because those states can individualize delivery channels and content towards their student populations, but children may still have difficulty accessing content in states that are not providing support for certain channels (radio, print). Overall, difficulty in content accessibility remains a challenge for children across Brazil.

Additionally, many state governments appear to be focusing on continuing to provide access to food and health for students from low-income families. Previously, many Brazilian school programs were paired with nutritional initiatives that gave low-income students access to food. One example is the national cash transfer program, Bolsa Família, which provides direct payments to families with school-aged children that send those children to school. Such programs can encourage families that would otherwise send their children to work to keep them to school instead. The national government has announced they will expand their conditional cash transfer program to include more low-income families (Moreno et al., 2020) in the face of COVID-19. Different states are providing food, nutrition, or cash to families in need (Secretarial Council for Education, 2020).

### Challenges

Brazil’s greatest challenge appears to be ensuring that all students receive equitable access to quality education. In Brazil, 71% of people have access to the Internet (Zheng, 2020), and a little less than 60% of students have access to a computer for schoolwork, indicating unequal access to online educational material poses a challenge (Reimers and Schleicher, 2020, 20). 97.03% of households had at least one TV in 2006, indicating that TV is one possible medium of delivery (Trading Economics, 2020). However, the national
government has not announced national standards for accessibility or one national online learning platform/informational source, instead leaving state governments to decide how they will provide specific channels of support. This is worrisome because it is possible for students with Internet accessibility or affordability issues in online learning areas to be forgotten in states that do not provide those resources. However, it may be that allowing states to individualize their distance learning plans is making modes of delivery and content quality more efficient. It is noteworthy that in Table 1, the Distrito Federal, São Paulo, and Rio de Janeiro all have the highest gross domestic product (GDP) per capita* of the states and are offering at least three delivery channels (Internet, TV, and print) or Internet paired with free Internet services for students, teachers, and school administrators. In contrast, Alagoas and Piauí, which have the lowest GDP per capita, are not offering as many options to access education or mitigating costs for students without Internet access. However, Maranhão, the state with the lowest GDP per capita, is offering Internet, TV, and radio delivery channels for students. Such behavior offers evidence for both ideas - that state-led response is helping to individualize distance learning for students with different ICT availability and that states with less resources to increase ICT availability are also having difficulty diversifying those channels to reach students.

*Data for GDP per capita is from the Brazilian Institute of Geography and Statistics, this will be a footnote in the final product - (Brazilian Institute of Geography and Statistics, 2016).
*Zheng references are from the unpublished interactive map dataset and will be changed later.

**Identified Best Practices**

Brazil’s best practices are more difficult to assess, as states have implemented their own unique strategies. However, many states are focusing on ensuring students have access to multiple educational delivery channels through partnerships with infrastructure (Internet, TV, radio) and educational resource companies and guidance to available resources on state or national portals. Diverse educational delivery channels are vital because no single channel is sufficient to reach all children, and the rural poor are most likely to be left out by technology-reliant delivery systems (Dreesen et al., 2020, 4). In Brazil, fourteen states (Table 1) are expanding access to education by not only providing online resources to schools and parents, but also airing classes and/or Q/A sessions on TV. Additionally, states such as Goiás and Roraima are partnering with radio stations and educational centers to reach students by radio and print. São Paulo and Rio de Janeiro are also making learning more equitable by offering free Internet to students, teachers, and administrators (Table 2) in their areas.

Another best practice Brazil has implemented is the formation of a central educational resource for schools, parents, teachers, and students. Brazil’s state education council has created an informational website for schools, parents, teachers, and students at consed.info that combines school closure, nutritional program, and schooling information in one place.
This website is useful not only for communicating strategies and needs, but also because it contains a catalogue of accessible educational resources for distance learning. It is “essential to create curated catalogues of high quality education resources... as a way to facilitate access to relevant learning materials to learners and teachers (Reimers and Schleicher, 2020, 8). The consed.info website greatly assists in communicating priority information to all parties involved in the educational process.
Annex

Table 2: Full Table of Distance Learning Strategies in Brazilian States, (CONSED, 2020)

<table>
<thead>
<tr>
<th>State</th>
<th>Online</th>
<th>TV</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acre</td>
<td>Rede Escola Digital platform for materials</td>
<td>Open TV channel partnership</td>
<td>None</td>
</tr>
<tr>
<td>Amapá</td>
<td>Escola Digital Amapa, Connected Schools, AVAMEC</td>
<td>No</td>
<td>School textbooks</td>
</tr>
<tr>
<td>Amazonas</td>
<td>Facebook and Instagram classrooms, AVA, Saber, and Mano apps for materials</td>
<td>Aula em Casa, daily TV program</td>
<td></td>
</tr>
<tr>
<td>Alagoas</td>
<td>Study guides via government portal, Anisio Texeira platform, Robert Marinho Foundation’s online platform “Classes Abertas”</td>
<td>Study at Home program partnership with TV Educativa</td>
<td></td>
</tr>
<tr>
<td>Bahia</td>
<td>Aluno Online, Professor Online, and Google Classrooms platforms</td>
<td>None</td>
<td>Youth and Adult Education Centers’ technology platforms</td>
</tr>
<tr>
<td>Distrito Federal</td>
<td>SEEDF Youtube channel for recorded lectures, materials through Google Classrooms</td>
<td>TVS Justica and Genesis for students and teacher training</td>
<td>Delivery of printed materials to students without Internet</td>
</tr>
<tr>
<td>State</td>
<td>Platform or Program</td>
<td>Features</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Goiás</td>
<td>Net Escola platform for materials, social networks operated by Educational Centers, often via phone, phone calls and texts for teacher/student interaction</td>
<td>AM/FM radio classes for high school and elementary students</td>
<td></td>
</tr>
<tr>
<td>Espírito Santo</td>
<td>EscoLAR educational platform</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maranhão</td>
<td>Google Classroom, Whatsapp, Google Hangouts TV classes</td>
<td>Radio classes</td>
<td></td>
</tr>
<tr>
<td>Mato Grosso</td>
<td>State educational portal for recorded classes and material</td>
<td>Delivery of printed materials to students without Internet</td>
<td></td>
</tr>
<tr>
<td>Mato Grosso do Sul</td>
<td>Protagonismo Digital platform</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minas Gerais</td>
<td>Plano de Estudo Tutorado/Tutoring Study Plan for all age groups distributed online and in Escola app (free), lectures on Minas Network’s Youtube channel</td>
<td>Plano de Estudo Tutorado/Tutoring Study Plan for all age groups distributed in print</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TV Cultura partnership for recorded lectures available on apps and social networks</td>
<td>Alternative individual study replacement plan if approved by State Education Council</td>
<td></td>
</tr>
<tr>
<td>Pará</td>
<td>Paraiba Educa platform</td>
<td>TV Assembleia’s partnership to show lectures</td>
<td></td>
</tr>
<tr>
<td>Paraíba</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>Services and Partnerships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paraná</td>
<td>Youtube for live classes, Aula Paraná Plan for live chat while TV courses play, Google Classrooms for organization and materials, RIC TV partnership for elementary and high school classes, Open TV partnership for early elementary school classes, Special dispensation to deliver printed materials to students without access to learning and for students to turn in homework.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pernambuco</td>
<td>Educa-PE platform for live and recorded classes (through Youtube), Educa-PE platform on TV Pernambuco, TV Universitaria, TV Nova Nordeste, and TV Alepe for high school students.</td>
<td></td>
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<tr>
<td>Piauí</td>
<td>Youtube and educational channel, TV Antares channel for recorded lectures.</td>
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<tr>
<td>Rio de Janeiro</td>
<td>Google Classrooms, TV Band, TV Alerj, and the Net channels for recorded lectures.</td>
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<tr>
<td>Rio Grande do Norte</td>
<td>Digital School learning portal for live and recorded classes, and materials, partnership with Google for Education for platforms and resources.</td>
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<tr>
<td>Rio Grande do Sul</td>
<td>Google Classroom, Technological Mediation channel on Youtube for recorded lectures, Revisa Enem platform for last-year high school students.</td>
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<tr>
<td>State</td>
<td>Tools/Partnerships</td>
<td>Activities</td>
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<tr>
<td>Roraima</td>
<td>Google Classroom, Whatsapp, Google Hangout</td>
<td>Delivery of printed materials for students without Internet access, Waves of Knowledge radio program on Radio Roraima station for live teacher/student interaction and Dialoguing with the Psychosocial radio program for psychosocial support, Special Education Implementation program materials at educational centers</td>
<td></td>
</tr>
<tr>
<td>Santa Catarina</td>
<td>Google Classroom, Whatsapp, Google Hangout, SED website for free materials</td>
<td>Delivery of printed materials for students without Internet access</td>
<td></td>
</tr>
<tr>
<td>São Paulo</td>
<td>SP Education Media Center for live and recorded classrooms, TV Cultura partnership for recorded classes</td>
<td>Telecommunications partnership for free student</td>
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<tr>
<td>State</td>
<td>Special Early Education Platform</td>
<td>Internet via mobile phone</td>
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<tr>
<td>Sergipe</td>
<td>Estude em Casa/Study at Home portal for student and teacher training</td>
<td></td>
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<tr>
<td>Tocantino*</td>
<td>N/A</td>
<td>N/A</td>
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</table>
Indonesia

COVID-19 Educational Response

Because of the COVID-19 pandemic, governments world-wide have closed schools and implemented distance learning strategies to continue education. Indonesia was chosen as a case study for Southeast Asia as it has one of the highest populations of school-aged children in the region. About 68 million learners were affected by Indonesia’s national school shutdown on March 25th, 2020 (UNESCO, 2020). The virus will significantly disrupt the lives of these learners not only through school closures but also through its effects on their community’s health and wellbeing.

The first positive domestic COVID-19 infections were announced on March 2nd, 2020. Since then, COVID-19 has spread to all 34 provinces and infected nearly 30,000 people (Indonesia Ministry of Health, 2020). As of June 4th, the national COVID-19 informational website’s map shows the outbreak to be concentrated on the island of Java. In particular, the infection is concentrated in Jakarta and Surabaya, the capital and second-largest city respectively (Indonesia Ministry of Health, 2020). Indonesia’s national and local government began the majority of their response on March 11th, after the creation of a Task Force for Rapid Response to COVID-19 (Djalante et al., 2020, 4). While the task force has not initiated national lockdowns, it did urge social distancing measures and prohibited mass gatherings (Djalante et al., 2020, 7). It is noteworthy that while Indonesia’s government did not initiate a national lockdown, it did shut down schools on March 25th. Schools have not yet reopened, and although the new semester would originally have begun on June 13th, the governments’ plans are considering a delayed opening in December or later (Ghaliya, 2020). Additionally, Indonesia’s national exams, which occur for elementary, junior high, and high school students, have all been cancelled (Ghaliya, 2020). It is clear from this information that Indonesia’s COVID-19 educational response must consider how education will be sustained in the short-term and potentially, the long-term.

Distance Learning Strategy

Indonesia’s Ministry of Education and Culture (MoE) is heading the educational response to COVID-19, although the structure of the Indonesian educational system gives regional governments great autonomy over requirements for individual schools (Azzizah, 2015, 218). Thus, distance learning strategies’ financing, content, and delivery methods will likely vary by individual school and region. Indeed, the MoE allows for individual schools to choose their learning plans, as long as they are online learning platforms (Azzahra, 2020, 4). So far, Indonesian schools’ distance learning strategies have utilized the Internet, TV, and mobile networking to distribute educational material and conduct classroom activities.
Although schools can choose their own distance learning platforms, the MoE is supplementing all plans by offering support and infrastructure for communication and material. Its online educational portal, Rumah Belajar, contains educational materials and communications platforms for conducting virtual classes and studying. The Indonesian government has also partnered with education technology companies to offer more free online learning services (among them Ruang Guru) for students, teachers, and parents, including live sessions and assessments (Djalante et al., 2020, 6). Finally, to reach students without Internet access, the MoE and the state television channel TVRI are to broadcast lessons live nationwide in the Belajar Dari Rumah or Study From Home program. The program is run according to a publicly available scheduled timetable. It is targeted towards elementary to high school age learners and contains literacy, numeracy, and cultural content. The Ministry of Education also plans to assess the quality of the program in partnership with other NGOs after a brief period of time (BERITASATU, 2020).

Challenges

Indonesia’s major challenge is accessibility. Only 64% of the population had access to the Internet as of January 2020 (Zheng, 2020). In the additional ICT PISA survey run in 2018, Indonesian students reported that only 50% had access to the Internet for schoolwork and less than 44% of students had access to a computer for schoolwork (Reimers and Schleicher, 2020, 20). These numbers may have changed as schools have shut down and programs to increase ICT access have been put in place. An April survey by the Indonesian Child Protection Commission (KPAI) of 1,700 Indonesian students across different cities highlighted the issue of Internet accessibility and affordability, with 42% of students reporting issues affording the Internet (Fachriansyah, 2020).

These statistics and incoming news reports show that low-income students and students in regions with less Internet availability are blocked from Internet-based distance learning. One way Indonesia has confronted this challenge is through alternate mediums of educational delivery, mainly broadcast. Infrastructure for TV is more common in Indonesia than Internet, as 95% of students said they had accessed a TV in the past week during Indonesia’s national socioeconomic survey in 2018 (although only 65.38% said they owned a TV), and the government’s TV channels may prove to be more accessible. Additionally, 96% of Indonesians own some type of mobile phone (Kemp, 2020). This indicates that mobile phone apps may be another possible educational channel. Azzahra also recommends that Indonesia also start a radio program in mountainous regions where television and mobile coverage is spottier (Azzahra, 2020).

Another ongoing challenge for Indonesia is the quality of education, which is harder to measure in the short-term than access but just as vital to learning. In the April survey, it was revealed that 79% of student correspondents had minimal interaction with teachers during online learning, and that interactions largely consisted of homework assignments. Maintaining support for students during distance learning will be different as teachers adapt to using digital communication channels. Additionally, COVID-19 is likely to accentuate a pre-existing digital and educational divide within Indonesia. First, ICT infrastructure like Internet access is concentrated on the island of Java, where over half the population lives (Azzahra, 2020, 2). Thus, a shift to distance learning could be most
harmful for students living in the rural, mountainous areas less likely to have connectivity. Second, Indonesia’s most qualified teachers, especially those with ICT skills, are concentrated on the island of Java and especially within urban areas (Azzahra, 2020, 2). Indonesia’s existing difficulties with educational access and quality will be further exacerbated by the current crisis. Strong national support for local schools that are having difficulty with training teachers for distance learning, adapting to the new technology, or continuing effective education remains necessary even as the country manages the COVID-19 pandemic.

**Identified Best Practices**

Indonesia is implementing two distance learning practices that have been shown to, in other countries, best promote equity, access, and quality of education during COVID-19. First, it has diversified educational delivery channels by using the Internet and TV. Second, it has partnered with existing online learning companies and TV in singular national platforms with clear access to make access and use easier for participants. Third, Indonesia has created channels to monitor feedback in the system. Diversifying educational delivery channels, partnerships, and monitoring feedback has proven to be ideal for reducing learning loss in the academic journey of children on both sides of the world’s digital divide (Dreesen et al. 2020, 4).

Second, Indonesia has instituted mechanisms for assessing and surveying its educational programs. This practice, gathering feedback and strengthening monitoring of reach and quality of education, is also identified as a best practice by Dreesen et al (6). Gathering feedback through methods can highlight learning quality and potential issues early on. For example, the Indonesian Child Protection Commission’s survey spoken of on page 49 highlighted the lack of teacher-student interaction in some cities’ online lessons. Indonesia’s mechanisms for assessment include the regular surveys led by the Ministry of Education in partnership with UNICEF to assess Belajar dari Rumah, the national TV program (Sikirit, 2020). These surveys also help UNICEF and government bodies collect other information about home learning activities and better tailor future educational responses.
China

Context Information
At the end of December 2019, many Chinese health authorities in the Hubei, Wuhan province were treating numerous cases of pneumonia of unknown etiology that was later discovered by researchers to be a novel virus identified as SARS-CoV2. This identification occurred on the 30th of December when samples of bronchoalveolar lavage were obtained from an ill pneumonia patient residing in Wuhan Jinyintan Hospital. However, at the time, there was not any evidence that showed just how contagious and deadly this new virus was, so Chinese health officials were only monitoring the virus with the purpose to prevent it from developing and growing into something with much more serious consequences. During this period, all educational programs continued to operate. It was not until the mandated city-wide lockdown that the education systems were systemically forced to adapt in order to continue the students’ education.

A few days following this discovery, on the 11th of January 2020, the first death was announced on Chinese state media through television broadcasts, newspapers, and later social media platforms like WeChat of a 61 years of age man who was a regular at a local seafood and poultry market in Wuhan. The following day on the 12th of January, China released to the public the genetic sequence of COVID-19. By that time, with the nationwide celebratory holiday of Chinese New Year right around the corner, a large percentage of the Chinese population were on the move travelling back to home provinces to celebrate the holidays with their loved ones, unknowingly spreading the virus at scale. Due to the nature of the governmental organization of the People’s Republic of China, within a little over a week, on the 23rd of January, Chinese authorities were able to successfully close off the city of Wuhan through the cancellation of the transportation means and conducted a nationwide school closure on the 17th of February. The number of confirmed cases at the time of closing was reported to be approximately 70,548.

Current status of China’s educational system is that it has put procedures in place to allow for school reopening starting on the 26th of April. However, with the second wave of the virus’s outbreak in Beijing, new lockdown procedures have been implemented again transitioning the education system to be virtual.

As of June 3rd, 2020, according to reported statistics from Worldometers, there are a total of 83,021 reported covid-19 cases in China. The Worldometers site issues daily statistics of the most recent confirmed cases, deaths, and recovery rates.

Through the linear perspective, it is evident from an elevated view in the first graph that China has reached a steady plateau of total cases. However, although the numbers are not drastically increasing, they also are not declining; the curve is simply just flattening making
the steep mountain of cases a bit more manageable. This gives the health care systems more time to place preventative measures in place to limit the spread of the virus and to be able to effectively treat the vulnerable victims. This sense of stability and control is crucial in how the Chinese government was able to evaluate the feasibility of reopening the country’s education system.
Reporting the outbreak:
According to the World Health Organization, reported cases are based on the Chinese National Reporting System (NRS) between the 6 National and Provincial Health Commissions. “The NRS issues daily reports of newly recorded confirmed cases, deaths, suspected cases, and contacts. A daily report is provided by each province at 0300hr in which they report cases from the previous day. The epidemic curves are generated using China’s National Infectious Disease Information System (IDIS), which requires each COVID-19 case to be reported electronically by the responsible doctor as soon as a case has been diagnosed. It includes cases that are reported as asymptomatic and data are updated in real time. Individual case reporting forms are downloaded after 2400hr daily” (WHO Report).

Transmission breakdown outside of the epicenter of Wuhan:
Given the unfortunate timing of the virus’s outbreak to be during the nationwide celebratory holiday of the Chinese New Year, many infected victims and other individuals were on the move to return to their hometowns to celebrate the new year with family and friends. This population movement in line with the fact that Wuhan is a transportation hub, allowed for the virus to thrive and spread at an unnerving pace throughout the whole country.

Who are most affected:
Based on the data curated and collected by the WHO, in Hubei, Wuhan; Shenzhen and Guangzhou, Guangdong; Chengdu, Sichuan; and Beijing, among the confirmed cases of covid-19 reported in China, the median age - from the range of two days old to one hundred years old – falls at 51 years. The highest percentage of COVID-19 victims lie within the age range of 30 to 69 years and they make up the majority of 77.8% of the total cases reported.
To give further context of the statistics collected, 77.0% of the cases originate from the epicenter Hubei, Wuhan; 51.1% of the total cases in China are male; 21.6% of the total cases are comprised of people whose occupation is within the category of farmers or laborers.
Although these numbers look promising to the youth and present a more positive outlook towards reopening the Chinese education system, the most common means of transmission in China is the household transmission of the covid-19 virus from familial human to human interaction. According to the Joint Mission Report from the WHO, “among 344 clusters involving 1308 cases (out of a total 1836 cases reported) in Guangdong Province and Sichuan Province, most clusters (78%-85%) have occurred in families” (WHO Report). From the ongoing studies in the market right now, it is estimated that for the province of Guangdong, the secondary attack rate of the transmission of the virus within households can range from 3 to 10%.

COVID’s impact on children:
From the data available to the public as of June 2020, children aged eighteen and under make up 2.4% of all reported cases in China. When breaking down the statistics by provinces, only data from Wuhan is available to show that within the very beginning stages of the pandemic, in November and December of 2019 and the beginning half of January 2020, no children were found positive. However, through later studies compiled by the Joint Mission, many children that were tested positive later on were found through contact tracing methods to have contracted the virus from familial human to human interaction. These findings are significant to the overall understanding and structure to the remote education system because this forces the Chinese government to formulate a plan that is not heavily reliant on the child’s guardian to facilitate the child’s learning process.

COVID 19 Educational Response
Initial plans for educational systems and the current plans to cope with COVID-19 taken from the MDPI Report:
In response to the pandemic, the Chinese government initiated a series of emergency management mechanisms including social distancing—for example, the lockdown of cities and shutting down schools (McAleer 2020; Wang et al. 2020; Yue et al. 2020). An emergency policy initiative called “Suspending Classes Without Stopping Learning” was launched by the Ministry of Education to switch teaching activities into large-scale online teaching curriculums that were flexible to change while schools were closed. For instance, the government took action to guarantee the provision of network service resources. The Ministry of Education, together with several telecom operators including the China Education and Scientific Research Computer Network, China Mobile, China Telecom, China Unicom, and China Satellite Communication, committed to the maintenance of public service platforms and school networks at different levels (Ministry of Education of the People’s Republic of China 2020c). This approach enabled the provision of fast and stable networks for online education, and guaranteed teachers’, students’, and parents’ access to digital educational resources and online education (MDPI Report).

Additionally, to help make the remote educational system succeed to the best of its ability, the government worked on making educational resources accessible to the general public. In particular, the Ministry of Education approved 37 qualified institutions and Internet companies to provide online teaching services (Ministry of Education of the People’s Republic of China 2020d). The Department of Teacher Education formulated a resource
package with detailed instructions for teachers, which covered online teaching strategies, information technology applications, school epidemic prevention cases, local teacher training cases and so forth (Xinhua Net 2020).

A more in-depth example would be of the suggestion made out to teachers to make full use of “the National Elite Online Open Courses” as examples, and to teach in an independent way while drawing on online teaching resources such as those on MOOCs (CCTV News 2020a).

All of the resources were made free and publicly available because of the unbalanced regional development in China making substantial differences in information infrastructure between the regions (MDPI Report). To ensure the reach of information and resources to all students including those in remote areas, the government worked on circulating teaching information in multiple ways, using satellite TV in areas without internet coverage (Ministry of Education of the People’s Republic of China 2020e).

**Challenges**

According to the MDPI Report:

“The weakness of the online teaching infrastructure, the inexperience of teachers (including unequal learning outcomes caused by teachers’ varied experience), the information gap, the complex environment at home.”

A major challenge that China had to face with the remote learning programs was that the online teaching was majorly constrained by the country’s infrastructure. Due to the large-scale teaching needs and personnel visits, online teaching platforms such as Cloud Classrooms, Rain Classrooms, and Ding Talk are often overwhelmed, and network crashes had a large probability of occurring. Meanwhile, differences in information technology infrastructure between regions and the network coverage in remote areas is insufficient, which may further lead to educational inequity. According to a survey conducted by CCTV (CCTV News 2020b), “about 2% of students still have no access to online live teaching. Some children in mountainous areas even have to walk for hours to find places with stable network signals” (Sohu News 2020).

The proportion and efficiency of the use of online teaching resources are still rather low. A large proportion of teachers had little use and knowledge of online resources before the outbreak, but had to precipitously copy offline teaching content to the network space, without making appropriate adaptations.

As online teaching was not yet a major form of education in Chinese schools, many teachers had no previous experience in online teaching; urban-rural disparity, different levels of knowledge about information technology acquired by teachers, and teachers’ differing attitudes towards, and ability to learn, information technology, are all having an impact on the general effectiveness of online education across the country (Zhang et al. 2015).
**Identified Best Practices**

China has adopted distance learning with its flexible curriculum via the Internet and through TV and physical newsletters. An example of this practice carried out is when the Guangdong province adopted an emergency measure to equip 9262 poor students with tablets (Southcn News 2020); the Department of Education of Zhejiang Province issued guidance requiring each class to last for about 20 minutes in primary school and 30 minutes in middle school (The People’s Government of Zhejiang Province 2020) a flexible and catering to students’ needs to carry out independent learning. Furthermore, the total time length of teaching per day was suggested to be no longer than one hour for lower grades of primary school, two hours for higher grades of primary school, four hours for middle school, and five hours for high school (The People’s Government of Zhejiang Province 2020). China’s ministry of education has done a lot of research to take into account the progress made in students’ home-based learning for the sake of smooth transition of post COVID education.
Egypt

Confirmed Cases (as of 22 June 2020): 56,809 total; 15,133 recovered; 2,287 deaths

Overview

With a population of over 98 million, the Arab Republic of Egypt has the largest educational system in the Middle East and North Africa (MENA). With a rapidly growing population over the past three decades, Egypt in 2017 had 12.2 million elementary school children, 8.9 million secondary students, and 2.8 million postsecondary students (Mohamed, Skinner, and Trines 2019). Education is overseen by central government bodies such as the Ministry of Education (MOE) and the Ministry of Higher Education. MOE is “responsible for national examinations, curricula, the development and provision of textbooks, teaching materials, and other matters” (Mohamed, Skinner, and Trines 2019). Egyptian students are guaranteed free and compulsory education for those between the ages of 6 and 15, but there are plans to extend this to secondary education for 12 years of schooling. The curriculum for primary education is determined by the government, and examinations are used in grade five and at the end of grade six, which must be passed in order to progress past primary school.

Prior to the pandemic, the country identified areas of reform for the education system, including increased funding and new technical universities to develop a system more closely aligned with the needs of the workforce (Ibid.). Egypt moved forward with a significant educational reform beginning in 2018, which included an increased budget to expand access to digital learning platforms and tablets. In 2018, the Ministry of Education planned to distribute 1.5 million tablets across the state to students and teachers to support the new digitized examination format ("Reform of Egypt’s public educational curriculum begins" 2019). By 15 March 2019, the MOE distributed 708,000 tablets to grade 10 students in over 2,000 schools (Leila 2020). The MOE also created the online Knowledge Bank, accessible to all students, in 2016 to ensure that digital learning would be an expanding enterprise of the state’s education system.

School Closures and Covid-19 Education Response

The Ministry of Education (MOE) announced steps for distance learning and school suspension beginning on 15 March 2020 ("How countries are using edtech (including online learning, radio, television, texting) to support access to remote learning during the COVID-19 pandemic" 2020). Originally planning to close in-person education for two weeks, the country quickly adapted to distance learning initiatives using its online Knowledge Bank and an Edmodo platform and worked to ensure that all students had access to necessary technological means. Because the MOE is already in charge of the curriculum, teaching materials, and online examinations, the move to distance learning focused on dispensing such information and teaching, and less about how to adapt the educational curriculum already in progress. The MOE extended access to the Egyptian
Knowledge Bank (EKB), which provides content by grade level and subject and is available in Arabic and English. Using multimedia outlets (videos, images, documentary films, and textbooks), the EKB is accessible by mobile phone or computer (Ibid.).

On 19 March 2020, four days after the initial school closures and transition to distance learning, Egypt announced a contract with Edmodo, an online learning provider, to deliver remote instruction. The Ministry of Communication and IT and the country’s mobile carriers came to an agreement to provide free SIM cards to students with a device, and to provide free access to the Ministry of Education websites to ensure students could access distance learning materials without the need for payment (Alaa El-Din 2020). To ensure minimal educational disruption and to acclimate to distance learning, grades 3-7 would complete a research project for each subject rather than take exams, and grades 10 and 11 would complete computer-based exams from home using supplied tablets ("How countries are using edtech" 2020). Access to the country’s e-library programs are available online or through specialized TV channels (Leila 2020).

Challenges and Opportunities

Most recent data for Egypt suggests that the majority of the population would be able to access the online distance learning materials by either mobile phones, laptops, or the television. According to 2018 data, approximately 50% of Egypt’s population uses the internet, and 66% of the population uses a mobile phone. 47% of Egypt’s population is identified as mobile internet users, with 57% of internet users using laptops and desktops, 41% on mobile phones, and 2% on tablet devices (Kemp 2018). These data suggest significant growth from 2014, where UNICEF reported 37% of households have internet access ("Data to inform the COVID-19 response" 2020). Furthermore, Egypt’s MOE’s collaboration with mobile phone and internet providers suggests that the country is working diligently to ensure all students have access to distance learning materials.

According to the National Telecom Regulatory Authority, which monitors information and communications technology (ICT) and determines penetration rates, home internet usage in Egypt has increased 99% since the start of quarantine on March 15, 2020, and mobile internet usage has increased by 35% ("The NTRA’s Telecom Service Usage Indicators Report for the Month of Ramadan" 2020). Since the start of distance learning initiatives in March, browsing of the Knowledge Bank and MOE website has increased by 395%. This indicates that although the most recent internet penetration data from 2018 suggests that internet access has been limited in the country, the MOE and NTRA have worked diligently to ensure students have access to the internet for distance learning.
On 8 June 2020, PM Mostafa Madbouly and Minister of Education Tarek Shawky announced that the government is in the process of further developing distance learning technology for the 2020-2021 school year, highlighting that distance learning will most likely continue into the fall ("Egypt to rely on e-learning next academic year amid COVID-19 coexistence" 2020). Although there is a digital divide between the different governorates of Egypt, the government has been working to expand internet access across the country, and the recent need for distance learning practices has “significantly increased citizen acceptance” of these educational reforms (Ibid.). The MOE highlighted that 13.5 million students and 1.3 million teachers are registered for the department’s educational platform. The department has been applauded for its efforts to explain how to use the Edmodo educational platform (Buzz 2020).

Overall, Egypt has, within the last four years, worked on education reform to ensure access across the state. Although slow at first, COVID-19 actually provided opportunities for the MOE to expand its e-learning platforms and student access to the internet. By already looking forward to the 2020-2021 academic year, the government clearly identifies internet access as an essential part of the Egyptian educational system moving forward.

**Identified Best Practices**

With these identified initiatives, Egypt has taken successful steps to increase access to its distance-learning programs. These include providing a centralized hub for educational resources, free/reduced rates to internet/cell phone services for students and MOE websites, and tablets for educational use. The country has worked to expand access to its multimedia outlets and adjusted its curriculum to include a larger research and project-based component instead of examinations. Bearing in mind the possibility of future school closures, Egypt continues to work to ensure internet access for all students.
Conclusion

Across our review, we’ve found that COVID-19 has created difficulty providing equitable access to and quality of education for all segments of case countries’ populations. Socioeconomic disparity and location both impact access to the technical infrastructure needed to employ distance learning methods. For example, rural areas in the review are less likely to have Internet infrastructure, which is in demand as many schools shift to online learning. Because most countries have recently transitioned to distance learning, measuring the quality of education is also a major concern. It is difficult to measure how successful experiments with distance learning have been at this stage in the educational process, before the impact of this transition on educational outcomes is fully clear. However, many countries across our review are employing shared strategies that increase educational access and quality. These strategies are multiple educational delivery channels, multilingual educational services, national or state-level centralized hubs for educational information, mechanisms to communicate strategies and feedback from parents, students, and teachers, and support for psychosocial and special education.

In terms of educational accessibility, all of our case countries emphasize support for multiple channels of educational delivery. A majority focus on online education as a delivery channel, often paired with a national platform or contracted service with online education companies. Often, online educational initiatives have also been accompanied by free or discount Internet services for students. Governments have provided funding, direction to, or instruction to utilize online learning platforms. However, in recognition of differing access to technical infrastructure, case countries’ governments have also often initiated partnerships with TV and radio stations to deliver classes through those methods or via take-home delivery packages.

On another note towards accessibility, many of our target countries (South Africa, Cambodia, Egypt) have provided multilingual and intercultural educational programs through the above mediums. Producing educational materials that can reach a broad audience, whether that audience includes different geographic areas with varying wifi penetration, different communities speaking different languages, or students with varying access to mobile devices, is highly relevant to the current educational crisis facing the world during the pandemic and should be applied to other countries as the world continues to respond to COVID-19.

Clarifying communication between government, schools, and families has also been identified as a best practice among these countries, most often through the formation of a central hub for distance education. Brazil, Turkey, and Egypt all have government websites.
that update regularly with information about school closures, educational materials, classroom applications, lessons, broadcasting schedules, etc.

Altogether, these practices help to promote equitable distance learning, taking into account disparities in access to technology that may change the shape of distance learning for many children in urban and rural areas. The chosen countries reviewed above provide examples of best distance learning practices in action. This may be helpful for countries with similar educational systems or technical infrastructure to adopt as a model for what to do.


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