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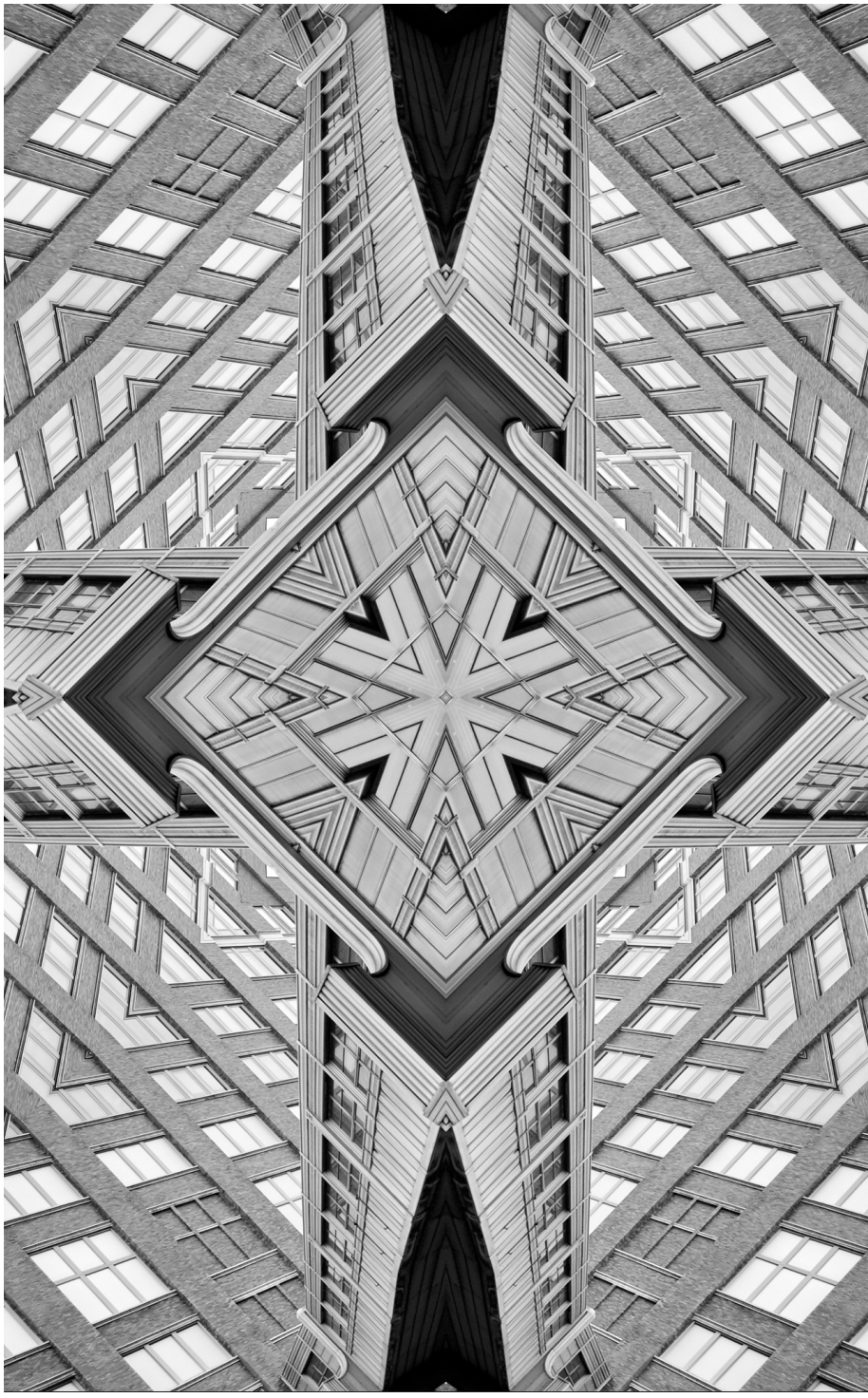

Regression in Learning: The High Cost of COVID-19 for India's Children

Mehr Kalra and Shivakumar Jolad

Abstract

This brief examines the education crisis that has affected close to 250 million children in India due to school closures implemented as a response to the COVID-19 pandemic. It underlines that the switch to remote learning has created a "regression in learning" that, while cutting across the entire socio-economic spectrum, has disproportionately affected the poor, and among them, the girls. This pandemic-induced education divide and learning loss will have a cascading effect on an entire generation of students. The brief recommends reopening schools at the earliest, starting with the primary grades; reshaping curriculum and pedagogy to emphasise foundational learning and skills; grouping children by learning and competency; and altering assessments from common grade-level exams to measurements of proficiency and skills.

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Introduction

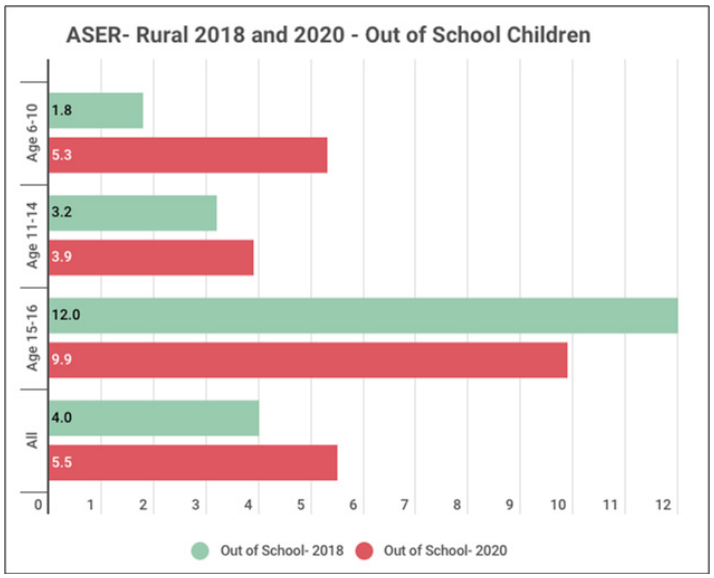
It would not be an overreach to say that in India as in many parts of the world, it is the children who were the first victims of the COVID-19 pandemic. As the cases began to increase in the second week of March 2020, schools were the first to close down.[1,2] One-and-a-half years later, in India, students continue to be confined to online schooling;[a] many have dropped out altogether. This, as offices and commercial establishments are opening up. Indeed, the duration of school closures in India has been among the longest in the world, according to the UN Educational, Scientific and Cultural Organization (UNESCO).[3]

As students were left with no choice but to accustom themselves to the "new normal" of online schooling, pre-existing learning inequalities were magnified. These gaps, brought about by socio-economic differences, manifested themselves in educational access, participation rates, and learning outcomes. With online and remote learning being far less effective than the teacher-driven, physical classroom mode, students have suffered what a report by Azim Premji University called "regression in learning". According to the report, the experience is shared across India's vast socio-economic spectrum.[4]

The severe effects of pandemic-induced education divide and learning loss will impact an entire generation of students. There is a need to recognise it early and make swift, serious course corrections. According to the United Nations Children's Fund (UNICEF), some 250 million children enrolled in elementary and secondary schools across India, and another 28 million aged 3-6 years in early-childhood education, have been affected by school closures.[5] In rural India, the ASER (Rural) 2020 Wave I survey found, the proportion of "out of school children" has increased from 1.8 percent to 5.3 percent in the 6-10 age group between 2018-2020. (See Figure 1)[6] Given that about 90 million children in the rural districts were enrolled during the year prior to the pandemic, out-of-school rural children are likely to have increased to three million.

a At the time of writing, states like Punjab, Uttarakhand, Bihar, and Odisha have reopened schools partially for different grades in July or are scheduled to reopen in August 2021. See: https://www.indiatoday.in/diu/story/back-to-class-tenuously-as-states-begin-reopening-schools-1831410-2021-07-22; https://www.hindustantimes.com/india-news/bihar-schools-and-colleges-to-partially-reopen-from-today-after-dip-in-covid-cases-101626050456315.html

Figure 1: Out-of-School Children (in %, 2018 and 2020)



Source: ASER (Rural) 2020 Wave 1

In the capital, Delhi, the government has reported that close to 15 percent of students in government schools have not been "traceable" since the initial lockdown in March 2020.[7] Part of this number may be those who have reverse-migrated with their families. A sizeable portion of these children whose families had no option but to leave the city during the initial lockdown, could fail to re-join school if they are not provided with additional support.[8] Girls are at greater risk of dropping out, especially in the secondary grades of 9 and 10: analysis by the Right to Education Forum estimates that some 10 million secondary-school girls are at risk of dropping out due to the pandemic.[9] This can set back India's efforts at promoting the welfare of girls, as there is enough evidence that keeping them in school protects girls from various threats like early marriage.

Education in Crisis: Before and After COVID-19

Prior to the pandemic, education stakeholders were primarily concerned with what they called "crisis of learning" in India, which they described as "endemic".[b,10] While the country had largely achieved Universal Access, Enrolment, and Retention in elementary education, its children were lagging even in basic grade-appropriate reading and arithmetic skills, as noted by the annual ASER surveys (Rural)[11] from 2005 to 2018. The National Education Policy (NEP) 2020, approved in July 2020, responded to this concern by stressing that "attaining foundational literacy and numeracy for all children must become an immediate national mission."[12]

By then, a nationwide lockdown had been implemented as a response to the spread of COVID-19. Schools were closed, and consequently there was a rapid increase in the use of remote-education resources—both old media (radio and television), and new (online classrooms, YouTube videos, and messaging service WhatsApp). In September 2020, a UNICEF Rapid Assessment of Learning during School Closures found that only 60 percent of children had utilised distance-learning resources in the preceding six months.[13]

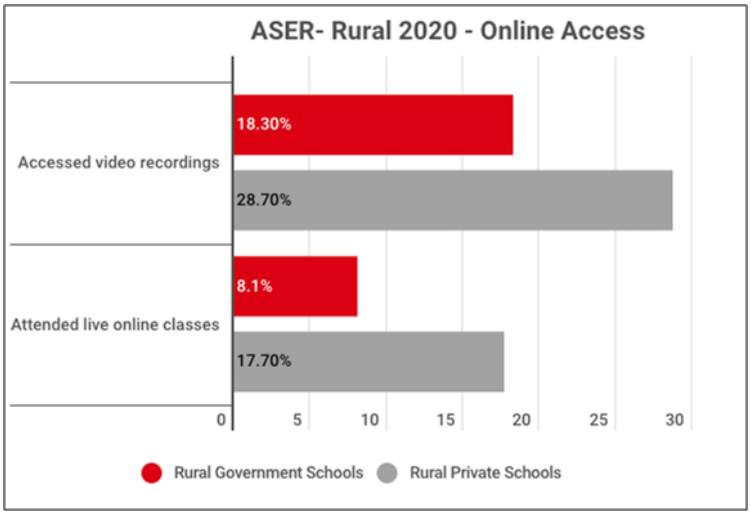
The Wave-1 of the ASER (2020) survey also reported that a mere 18.3 percent of children in rural areas enrolled in government schools have accessed video recordings, and 8.1 percent have attended live online classes.[c,14] The proportion slightly rises to 28.7 percent and 17.7 percent for rural children enrolled in private schools (See Figure 2).

Even with the best resources, remote learning with digital aids have been less effective than classroom learning.[15] Teachers are convinced that remote learning cannot mirror school-based learning, and want schools to be reopened as soon as possible.[16,17] There is also no dearth of anecdotal evidence that parents, and children themselves, have repeatedly expressed their desire to have schools reopened.

b Educationists disagreed on the exact phrasing— 'Learning Crisis', 'Teaching Crisis', or more broadly, 'Educational Crisis'—pointing to different factors being attributed to the crisis.

c From the start of the lockdown in end-March 2020, to the time the survey was conducted in late September 2020.

Figure 2:
Access and Use of Online Resources in Government and Private Schools in Rural India



Source: ASER (Rural) 2020 Wave 1

In the final version of NEP approved in July 2020, another section was added to the draft NEP 2019—'Online and Digital Education: Ensuring Equitable Use of Technology'.[18,19] It recognised the equity challenges, stating, "the benefits of online/digital education cannot be leveraged unless the digital divide is eliminated through concerted efforts." The policy also emphasised the need for public digital infrastructure, online teaching platforms and tools, content creation, a digital repository, and dissemination of e-content, and incentives for teachers to teach online and blended learning.

Even with such a policy in place, however, distance-learning is causing many children to be left behind, and this is why more urgent calls are being made about the restarting of physical schools. Proponents note that according to current data from the first two waves of the pandemic, children have the lowest chance of hospitalisation and death due to COVID-19. Globally, the

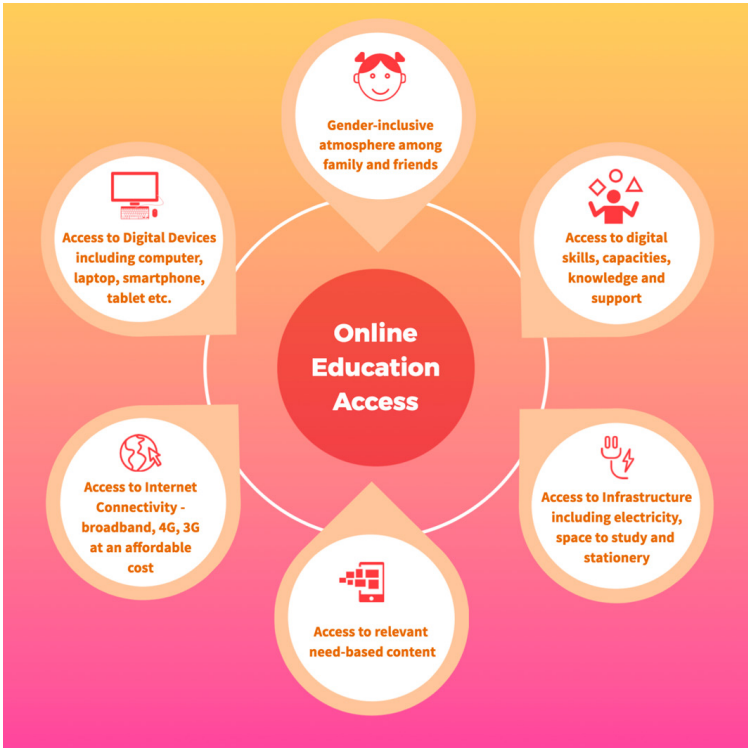
hospitalisation rate for children is 0.1-1.9 percent, and the mortality is at 0.1 percent; children comprised 0.05 percent of the total annual COVID-19 deaths as of May 2021.[20]

Yet, even during the waning phase in both the first and second waves, schools have remained shut in India, while shops, restaurants, bars, and malls are open, albeit at supposedly less capacity. To be sure, the decision to keep children home serves a certain purpose: to conciliate anxious parents, lessen the risk of virus transmission, or give schools more time to fill the gaps in their infrastructural arrangements. However, the cost to children is steep. Surveys by the Azim Premji Foundation have found that a massive 92 percent of children between grades 2-6 have lost at least one language ability while 82 percent have lost at least one math ability from the previous year.[21] If this loss in learning is not compensated for, it will have a domino effect on the future learning of children as they are promoted to higher grades. Truly India is facing an education crisis, the symptoms of which predated COVID-19.

> “The decision to keep children home conciliates anxious parents and lessens the risk of virus transmission; but the cost to children is steep.”

At the core of the currently deepening education crisis lies the great divide in remote learning induced by gaps in access to online education related to the following elements: (i) Physical infrastructure (unreliable electricity supply, study space, and overall home environment); (ii) Electronic devices (access to smartphones, computers, TV, among others); and (iii) the Internet (3G, 4G, or Broadband). Also required are: relevant need-based content in the language the children understand, digital knowledge and skills, support in using devices, and a gender-inclusive attitude towards digital use among the family and community (See Figure 3). Compounding the divide are rural-urban disparities, as well as inequalities across class, caste, and gender.

Figure 3: Determinants of Access to Online Education

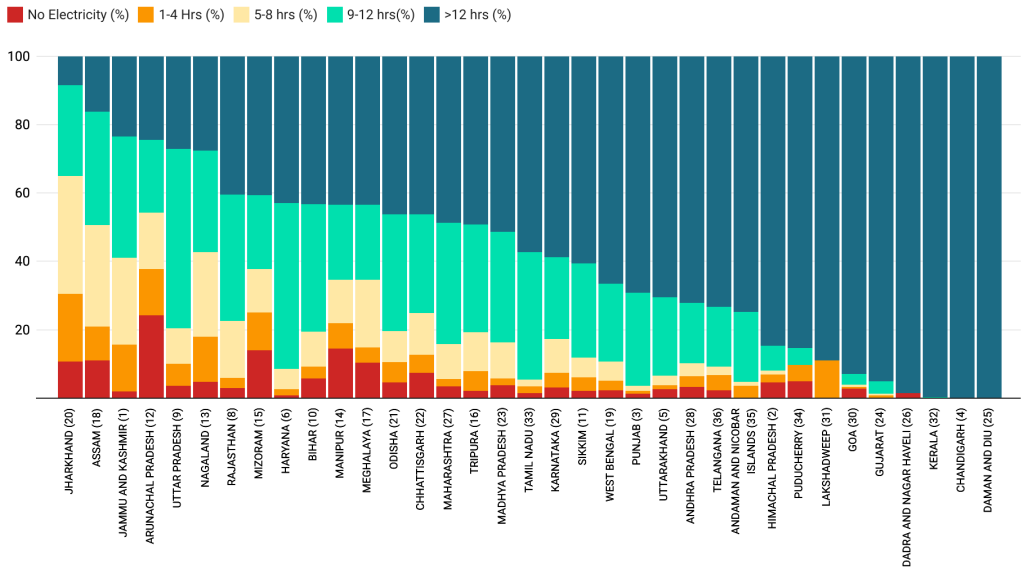


Source: Authors' own

Spatial Divide

India's digital divide is exacerbated by disparities in access to electricity and the internet; many Indian children belong to families without these two, and it is impossible for them to meaningfully engage in online classes. While India, officially, has achieved 100%-electrification in its rural districts, only 47 percent of the households received electricity for more than 12 hours a day in 2017-18.[22] Figure 4 shows that electrification can vary widely across states: less than 25 percent of villages in Jharkhand, Assam, and the erstwhile Jammu & Kashmir received more than 12 hours of domestic electricity. In better-off states like Goa, Gujarat and Kerala, this percentage is more than 90 percent.

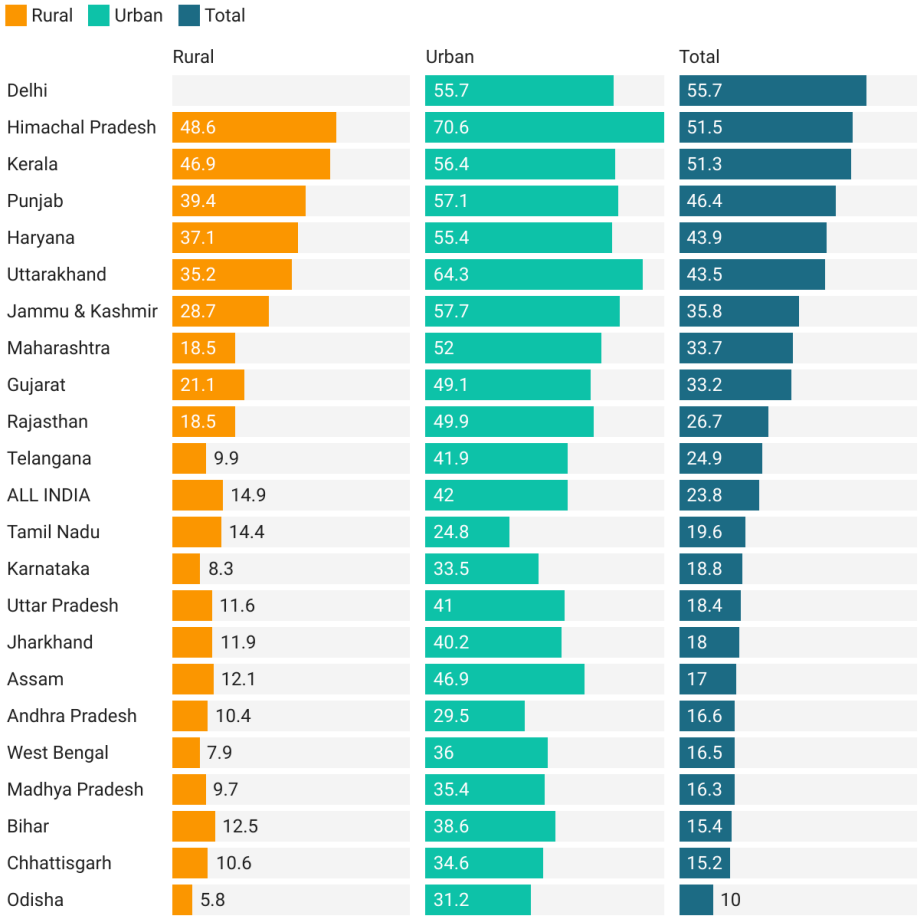
Figure 4: Availability of Electricity in Villages across States



Source: Mission Antyodaya, Ministry of Rural Development (2017-18)

Similar patterns are found in the National Sample Survey 2017-18: only 24 percent of the households have access to the Internet, and the figure drops to a far lower 15 percent for the rural regions.[23] Figure 5 shows the inter-state and rural-urban variance.

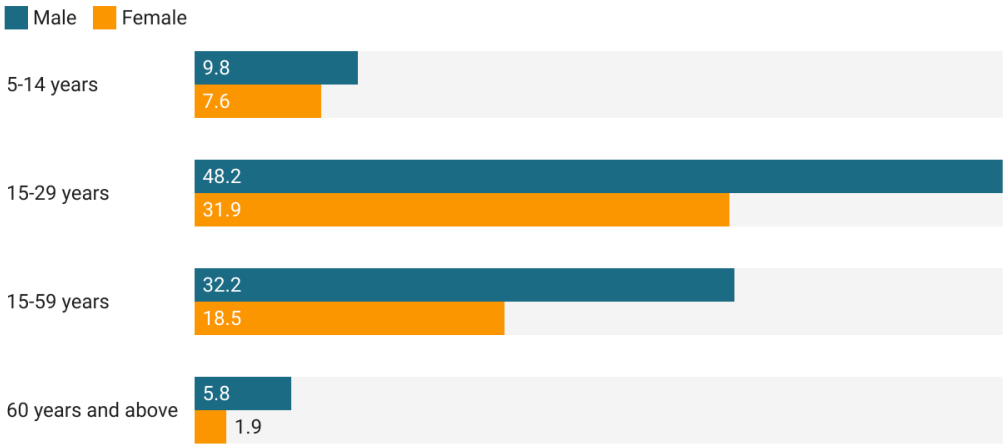
Figure 5: Percentage of Households with Internet Facility across States



Source: National Sample Survey 75th Round (2017-18)

The ability to use the internet[d] also varies by age and gender, with males having an upper hand across age groups. Among children between 5-14 years, for example, the ability to use the internet stands at 9.8 percent for male children and 7.6 percent for females (See Figure 6).

Figure 6: Percentage of Population with the Ability to use the Internet



Source: Key Indicators of Household Social Consumption on Education in India, NSS 75th round, 2017-18, Ministry of Statistics & Programme Implementation (MOSPI)

Social Divide

The digital divide is not an isolated phenomenon, but rather is layered upon the existing inequalities within Indian society, in general, and the education system in particular.[24] Professor Vimala Ramachandran, in her book "Gender and Social Equity in Primary Education", highlights the intermeshing of poverty, inequality, social identity, and gender relations and the manner in

d 'Ability to use the internet' implies that the household member was able to use the internet browser for website navigation, use email and social networking application etc. to find, evaluate and communication information.

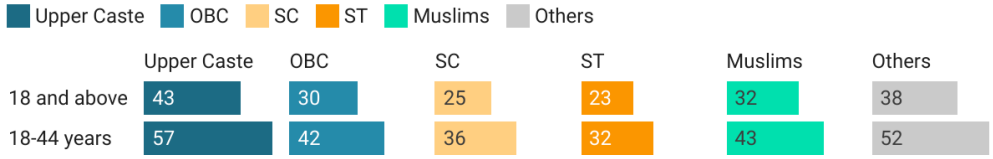
which they reinforce and offset each other within the education system.[25] These disparities translate to substantial differences in children's access to digital resources, adult supervision, and proper learning environment.

To begin with, digital literacy builds on basic literacy, which varies according to the social group, gender, and state. According to Census 2011, the urban male (88.76 percent) and female (79.11 percent) literacy rates are higher than the national average (72.98 percent). The literacy level is much lower and the gender gap is higher in the rural areas and among the most disadvantaged groups. For example, the rural Scheduled Caste (SC) males and females both have lower literacy rates of 72.58 percent and 52.56 percent, respectively. The disparity is higher in poorer states among the Scheduled Tribes (ST). In Rajasthan, only 36.1 percent of ST women were literate in 2011.[26] For the same group, Kerala ST women have literacy rates of 69 percent and 88 percent in rural and urban areas, respectively.

In smartphone access, in particular, ASER Rural 2020 Wave 1 revealed a drastic increase in ownership in rural areas from 36.5 percent in 2018 to 61.8 percent in 2020. [27] The pandemic forced families to purchase smartphones for their children's education—amidst job losses and diminished incomes resulting from COVID-19's economic fallout. However, ownership does not always translate to utilisation, which is hindered by poor digital literacy and intra-household inequality of access.

The National Election Study 2019 by Lokniti also included questions on Smartphone ownership.[28] About one-third of the respondents aged 18 and above and roughly 50 percent in the young working-age between 18-44 years owned a smartphone.[29] More than half (53 percent) of the upper-caste respondents owned a smartphone, compared to 23 percent of STs (See Figure 7). This low ownership among adults belonging to the marginalised communities translates to reduced access to smartphones among their children as well and, in turn, has ramifications in their attempt to engage in remote learning.

Figure 7:
Smartphone Ownership in India



Source: Lokniti-CSDS National Election Pre Poll Survey 2019 , analysed by the Indian Express Group

A study published by Leadership for Equity (LFE) in February 2021 on School Closures and Education showed that in six districts of Maharashtra, parents in tribal areas were at a far greater disadvantage than their rural and urban counterparts.[30] Less than 50 percent of them own any digital device such as a smartphone, TV or computer. The survey further noted that the *availability* of resources does not translate to *access* to those resources. Among parents who have a smartphone, almost 85 percent face problems with competing use.

Gender

A survey on issues faced by adolescents during the lockdown conducted in July-August 2020 in Jharkhand, Chhattisgarh, Bihar, and Odisha shows that girls carry the disproportionate burden of household chores.[31] This hinders their participation in remote learning, even when they have access to a digital device.

Another study, this time covering 10 states, found a large gender gap in access to digital devices even in higher-income states.[32] In Maharashtra, for example, 93.1 percent of boys have access to a digital device, against a minuscule 6.9 percent of girls in the 10-19 age group. In the country's poorest state, Bihar, the gender gap is similarly wide: 82.2 percent for boys, and 17.8 percent for girls. The southern states fare better: in Telangana, for example, access to digital devices is at 56 percent for boys and 44 percent for girls; and in Tamil Nadu, 59.6 percent of boys have access to digital devices, and 40.4 percent of girls.

The primary reason for girls not having access to digital devices is an intersection of economic hardship and gender bias: as family's resources are scarce, it is the education of the male child that is prioritised as the girl is expected to focus more on her domestic duties.[33] The family also has concerns about her safety and security, and they do not trust that she will use the device properly.

Content and Language

There has been an exponential growth in learning content for school education online through text, audio and visual media in recent years, both from government and the private sector. Through the Digital Infrastructure for Knowledge Sharing (DIKSHA) platform,[34] for example, the Ministry of Education (MoE) has made all school textbooks and video lectures from different school boards available online. Under the MoE, the following efforts have been initiated to reinforce online learning:

- National Repository of Open Education Resources (NROER) has a vast repository of educational resources;
- National Council of Educational Research and Training (NCERT's) e-Pathshala provides audio, video, and e-books for school children;
- SWAYAM-Prabha provides 34 dedicated free DTH channels for e-education for school children in various languages;
- The National Institute of Open Schooling (NIOS) has been providing open schooling alternative to millions of children.

The DIKSHA portal is being used across 30 states and UTs in the country. However, there are reports that it is difficult to navigate for rural students with limited knowledge of technology.[35] Furthermore, the platform offers limited ability for customisation at the state level, and therefore disregards the socio-cultural differences among children belonging to different parts of the country.

A majority of the quality educational material such as interactive tools are available in English. Children inept at English often struggle to take advantage of remote learning resources. While private players like Khan Academy and Pratham's PraDigi are working to make digital content available in Hindi

and other Indian languages, there is immense scope to scale-up educational content in these languages.[36,37]

Amidst the obstacles discussed in the prior sections of this brief, the most widely used tool of all digital media has been the messaging app, WhatsApp. Owing to its ease of use in sharing audio-visual media, the multilingual support, and widespread adoption even among the elderly, WhatsApp has been relied upon as the easiest medium of communication between teachers and students across the country. Teachers feel, too, that television and radio—which are more accessible to low-income households—have been underutilised for learning.[38] Meanwhile, a study by the LFE in Maharashtra observed that there were too many programmes, with too little impact on learning. State initiatives such as *Abhyasmala, Swadhyay and Tilli Mili*[e] had varying levels of participation across districts, which is at best, only "average". Programmes were either difficult, or lengthy, and others were not in conjunction with the syllabus. Therefore, even as government authorities and non-government organisations are undertaking efforts to expand remote learning content, the problem amidst plenty is in choosing the right content and aligning it to suit the diverse contexts in which students learn in India.

> "While there has been a growth in quality learning content online, they are mostly in English; this magnifies socioeconomic disparities."

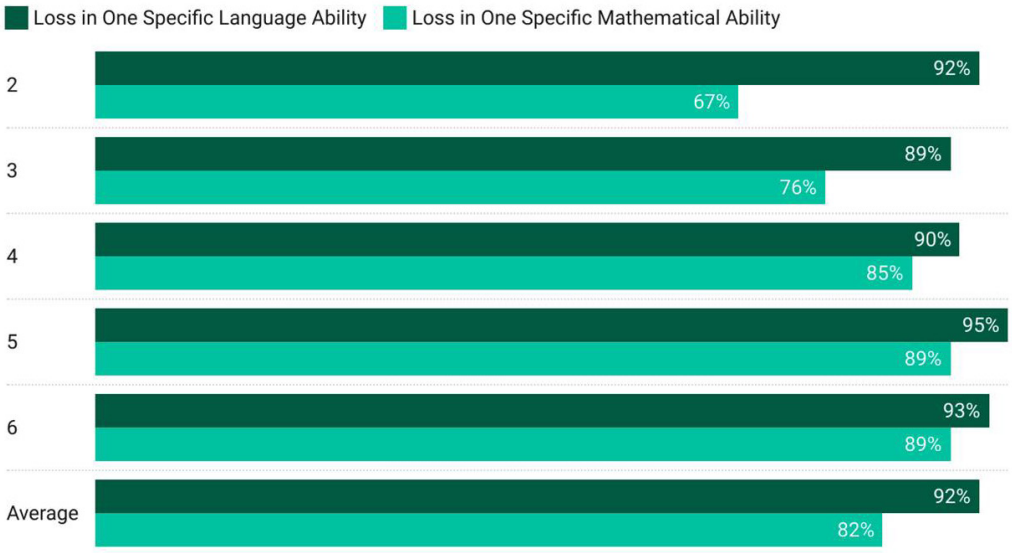
e Abhyasmala was a DIKSHA initiative launched by MSCERT in collaboration with LFE in April 2020 to provide students with academic and co-curricular content. Swadhyay is an AI-based Whatsapp-based initiative launched by the Maharashtra government for facilitating assessments for government school students between grades 1-10. And Tilli Milli was a 30-minute educational program for various grades broadcast via Doordarshan by the Maharashtra government between July-September 2020.

Divided by Socio-Economic Status, United by 'Learning Loss'

Gender, caste, and linguistic disparities have widened the existing inequalities within India's education sector. The massive 'learning loss' induced by the pandemic is common to all children, irrespective of their socio-economic background. A report by the Azim Premji Foundation found that school closures have led to a widespread phenomenon of *forgetting* among children.[39] This means they have lost certain foundational abilities or fundamental concepts, which in turn hinders their understanding of new concepts.

As mentioned earlier in this brief, nine of every 10 children between grades 2-6 have lost at least one language ability, and eight of every 10 have lost at least one math ability from the previous year. Nearly 75 percent of parents of children between 5-13 years, with access to digital devices, report that their children have been learning less in comparison to the physical classroom setting.[40] Students from migrant families and STs fare even worse in this regard; the percentage is as high as 90 percent for migrant ST children.

Figure 8: Learning Loss across Grades for Language and Mathematical Abilities



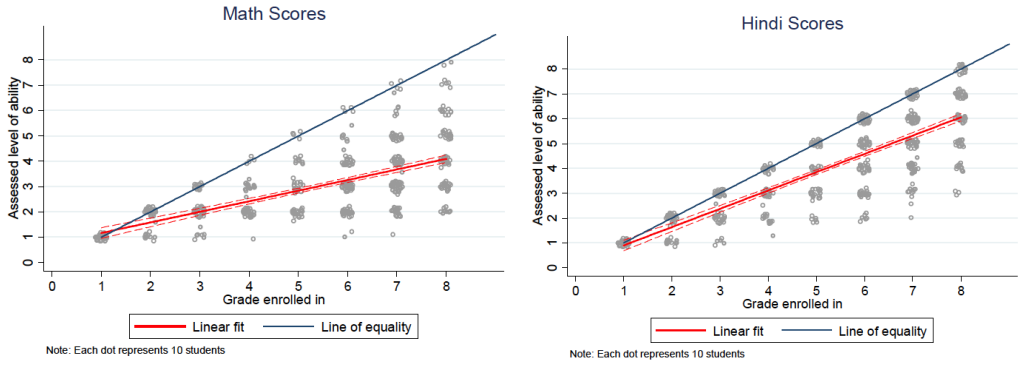
Source: 'Loss of Learning during the Pandemic', Azim Premji Foundation (2020)

Teachers themselves, to begin with, are suffering a crisis too. As online teaching through digital learning resources is not a part of the pre-service training curriculum, teachers are struggling to remotely address learning difficulties among children. Further, the efficacy of teaching remotely is limited by the fact that teachers themselves often struggle with internet bandwidth and the expenses involved in carrying out these online classes.[41] In Rapid Surveys conducted by Oxfam India, 84 percent of government school teachers reported that they were facing challenges in delivering education through remote mediums.[42] Equally important, teachers are unable to build emotional connections with the children and carry out meaningful assessments of their learning abilities.[43] There is little they can do to bridge the learning gaps until the time their students get promoted to the higher grade.

When schools restart, simply continuing the curriculum without any course correction for the regression suffered in the past year and a half can have a cascading effect on learning as students graduate to higher classes. A landmark study by Karthik Muralidharan and associates at Education Initiatives, made an assessment of the levels of student achievement with respect to current grade enrolled in Adarsh Schools of Rajasthan.[44] Figure 9 shows the assessed ability and grade enrolled in Math and Hindi. There is a general deficit of average attainment and grade-expected norms. More importantly, within each grade, there is a wide dispersion of student achievement, making it an extremely challenging task for teachers in government schools to handle such variation. The gap between *actual* and *expected* learning level only widens as children move to higher grades.

This 'regression in learning' will only build upon the learning inadequacies of the previous grades and result in cumulative losses over the years. For those who have dropped out of school, re-entry would be challenging, and for those that have been retained, catching up with curriculum would be daunting. Inference can be made from Karthik Muralidharan's study that regression in learning due to school closures can hinder academic performance of children as they progress to higher classes and higher education.[45] The socio-economic and gender divide would further hamper the learning achievements of the children from the disadvantaged groups. In a world where education premium has only increased, the impact of dropping-out and learning loss can last a lifetime, diminishing job prospects and future earnings.[46]

Figure 9:
Assessed Ability with respect to Grade enrolled for Math and Hindi



Source: Muralidharan, Karthik "Reforming the Indian School Education System" in What the Economy Needs Now - 2019.

Mental Health

Prolonged confinement at home has deprived children of the friendship, play, and social bonding and learning that can only happen when they are physically with their peers in school. According to a UNICEF report, grief, fear, uncertainty, social isolation, increased screen time, and strained family relations during the pandemic years have negatively affected the mental health of children.[47] Almost half of the secondary school students as well as one-third of parents of elementary school students have reported that their child's mental and socio-emotional health has been *poor* or *very poor* since May 2020.[48]

> "Prolonged confinement at home has deprived children of the social bonding that can only happen when they are physically with their peers."

Further delay in opening of schools is becoming increasingly unwarranted. In April, the Lancet India Task force on reopening schools had emphasised that there is little impact of school opening on population-wide transmission rates.[49] Data from countries that have reopened schools also show low levels of community transmission. Younger children (less than 10 years) play a smaller role in spreading the virus, and experience mild or no illness from COVID-19. Therefore, it is unlikely that any future COVID-19 wave will have a serious impact on children. Further, the recent fourth national level seroprevalence survey by the Indian Council of Medical Research (ICMR) showed that two-thirds of Indians above six years have COVID-19 antibodies in India.[50]

The ICMR brief launched in July 2021 also recommended that schools need to be re-opened, at the earliest and in a staggered manner, beginning with primary schools (grades 1-5).[51] Foundational skills have been consistently shown to exert significant influence on the generation of human capital, and therefore it is crucial to prioritise learning for early graders.[52] Considering board examinations, various state governments are keen on opening schools for children enrolled in grades 9-12.[53] However, older children are more capable of making up for in-school learning via self-study, virtual learning, and interaction with teachers. On the contrary, early graders are less likely to retain what they have learned through remote learning, and therefore opening up of pre-primary and primary schools should be prioritised.

A prerequisite to opening schools is the vaccination of India's 9.6 million teachers and associated school staff.[54] By replicating the priority model followed for students pursuing higher education overseas, at least the first dose of the vaccine can be administered to teachers and school staff within a few weeks, paying the way for a safer reopening of schools. Priority vaccination of teachers is also in line with their repeated demands for vaccination considering that they were deployed as frontline workers without being provided any compensation or recognition by the government.[55]

India's enduring 'crisis of learning' has been greatly compounded by the 'regression in learning' brought about by school closures as a response to the pandemic. When schools reopen, remedial learning needs to be prioritised through 'bridge classes' focused on foundational learning and strengthening fundamental concepts. This is among the recommendations outlined in The Students' Learning Enhancement Guidelines-2020 issued by NCERT; the

aim is for "learning enhancement" both, during COVID-19 for students with limited access to digital devices or none at all, and also for when schools restart.[56] It calls for monitoring all groups of schools (government and private), mapping children and their digital learning needs, capacity building of teachers, and modified learning plans. The report highlights the need for distance-learning to shift the emphasis from academic content alone to social and emotional aspects to ensure effective learning.

When the children go back to school, the old approach of grade-wise progression of the curriculum will no longer be conducive to learning. India needs to move towards modular-based learning that builds on students' current competencies. Students should be grouped according to their learning level rather than their grade, as demonstrated by Pratham's scalable 'Teaching-at-the-Right-Level' (TaRL) model.[57] The 'Graded Learning Program' (GLP) based on the 'TaRL' method implemented in 110,000 schools of Uttar Pradesh in 2019 showed substantial reading and arithmetic improvement in a span of only two months.[58] Simultaneously, the focus of assessments should shift from common grade-level examinations to measurements of proficiency and skill development.

If at all children need to be promoted to the higher grade, the curriculum needs to be modified such that it includes content from the previous grades as well as selected topics from the current grade. It is crucial to prioritise a learning-driven approach over the completion of the designated syllabus. As recommended by the Oxfam Report on Government and Private Schools during COVID-19, a model similar to the 'mohalla schools'[f] of Chhattisgarh and Madhya Pradesh can be replicated in other rural districts.[59]

> "When schools reopen, the old approach of grade-wise progression of the curriculum should give way to modular-based learning."

f In 'mohalla' schools, small groups of children are taught twice a week in open spaces while ensuring social distancing.

Conclusion

Mehr Kalra *is a graduate of FLAME University, Pune, and is currently pursuing her Master's degree in Development from Azim Premji University.*
Dr. Shivakumar Jolad *is Associate Professor of Public Policy at FLAME University, Pune.*

The country's education sector is experiencing a crisis far deeper than the one prior to the pandemic. Immediate and effective measures are needed to pull millions of children out of this crisis.

If there is one positive outcome of the transition to remote learning, it is the improvement in digital literacy among education stakeholders—the students themselves, and their teachers and parents. This literacy can pave the way for a *blended mode of learning*, wherever feasible, wherein the beneficial outcomes from digital learning can be combined with those from in-person class lectures to enhance the quality of education as well as digital literacy among children. The heightened involvement of parents in students' education can be leveraged by policymakers, engaging them to become active contributors to the academic progress of their children.

Endnotes

1 "COVID-19 India timeline: Looking back at pandemic-induced lockdown and how the country is coping with the crisis," *The Indian Express*, 2021, https://indianexpress.com/article/india/covid-19-india-timeline-looking-back-at-pandemic-induced-lockdown-7241583/

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OBSERVER RESEARCH FOUNDATION

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20, Rouse Avenue Institutional Area,
New Delhi - 110 002, INDIA
Ph. : +91-11-35332000. **Fax :** +91-11-35332005
E-mail: contactus@orfonline.org
Website: www.orfonline.org