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Chapter 3.2

COVID-19 and Global Education: Evidence from India

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Abstract

Schools closed across the globe in March 2020, affecting 1.6 billion learners, constituting 91% of all enrolled students in the world and 99% in low-income countries. India had one of the longest durations of school closures, more than twice the global average, with schools starting to open fully only in 2022. Even regularly scheduled school closures result in learning loss, which is typically larger for children from weaker socioeconomic backgrounds. In the case of the pandemic, these effects are likely to be magnified, both in terms of the magnitude of the learning loss and its unequal distribution. In this chapter, we focus on the impact of the pandemic on education in India. Using the Annual Status of Education Report (ASER), nationally representative surveys conducted during 2020 and 2021, we present findings on children's access to learning opportunities and educational support available at

home in rural India. In addition, ASER provides new data on learning loss for three states in India. While the state was extremely successful in providing textbooks to children during this period, it was less so in providing other learning materials, such as access to remote classes or other online resources. In states where a field survey to assess learning levels could be done, there was a learning loss of over a year. With a shock like this to the system, going back to "business as usual" when schools reopen is not really an option. The chapter discusses some of the academic strategies that can be implemented successfully to face current teaching–learning challenges.

Keywords: virtual education; COVID-19; pandemic; India

1. Introduction

Schools closed across the globe in March 2020. This school closure happened in 194 countries, affecting 1.6 billion learners, constituting 91% of all enrolled students in the world and 99% in low-income countries (UNESCO, 2021a). Even one year later, over 800 million students were experiencing disruptions to their education, with full school closures in 31 countries and reduced teaching in another 48 countries (UNESCO, 2021b). According to the most recent data available from UNESCO, 18 months into the pandemic, the global average for school closures (full and partial) is just under nine months (35 weeks), with schools being closed for over a year in countries, such as the US (62 weeks) and India (73 weeks) (data as of September 30, 2021 from UNESCO, 2021a).

This is not the first time schools have been closed for an extended period of time; there is some literature on the impact of school closures due to natural disasters or teacher strikes.[1] But such school closures have tended to be localized and not of such a long duration. It is evident that the impact of the current pandemic on education will be global and is likely to be much larger and perhaps more long lasting than anything we have seen before.

When schools are closed, even for a short time, say due to scheduled summer breaks, there is some learning loss and some disengagement with learning, simply due to the lack of in-person instruction.[2] Even under

[1] See for example, Andrabi *et al.* (2020).

[2] See for example, Slade *et al.* (2017).

normal circumstances, children from poorer backgrounds suffer relatively more. Richer parents can compensate for the lack of instruction by adding supplemental educational resources and paid tutors. In addition, children from more affluent backgrounds tend to have more educated parents who can help them study at home. In the case of a pandemic, these effects are likely to be magnified, both in terms of the magnitude of the learning loss and its unequal distribution.

Even though most countries pivoted as fast as they could and started sharing learning materials remotely using a variety of online platforms, the concern has been that the shift to online instruction is likely to affect students from low-income families far more adversely. There have been a variety of studies trying to estimate the extent of the learning loss due to the pandemic, but they have focused largely on OECD countries. Azevedo *et al.* (2020) simulate the learning loss due to school closures. In their most pessimistic scenario — school closures of seven months — which we have already crossed, globally, children will lose almost a year of learning-adjusted years of schooling, with long-lasting effects on lifelong earnings. The study suggests that the effects on learning are likely to be exacerbated for children from weaker economic backgrounds, who are unable to access remote learning resources and also do not have adequate learning support at home. Kuhman *et al.* (2020) use estimates of learning loss from studies of absenteeism and summer closures in the US to project learning losses of as much as 63% of the normal annual gain in achievement in math. They also find that the SES achievement gap is likely to widen. Bacher-Hicks *et al.* (2020) use internet search data to study the use of online learning resources in the US when schools were closed. They also find that the pandemic is likely to widen achievement gaps across rural–urban schools as well as high- and low-income areas.

All of these studies use existing estimates to project learning losses during the pandemic. In contrast, in a study using data from an online math platform in the US, Chetty *et al.* find that children from high-income areas experienced only a temporary reduction in learning, while children from-low income areas remained 50% below baseline levels persistently. Similarly, Engzell *et al.* (2020) compare learning data on primary school children in the Netherlands as soon as schools reopened with a baseline conducted prior to the school closures and find that the learning loss is 55% larger for children from less-educated households. Interestingly, they

find no difference across sex, grade, or subject. The importance of parental education in mitigating the effects of school closures is also underscored by Andrabi *et al.* (2020) in their study conducted after the 2005 earthquake in Pakistan. The study finds that while children living close to the earthquake fault line scored significantly worse on academic tests, even three years after the quake, these effects were completely mitigated for children of better educated parents. Several international agencies (such as the World Bank, UNICEF, and FCDO) quickly put together a variety of studies conducted during the pandemic to provide insights of what needs to be prioritized for learning in the current times.[3]

In this chapter, we focus on the impact of the pandemic on education in India. As in the rest of the world, schools shut down in India in March 2020. However, the duration of school closures in India has been one of the longest — more than twice the global average (UNESCO, 2021a). While there were instances of sporadic reopening for some grades and a great deal of variation across states as well as urban and rural areas, all schools across the country have only fully reopened by March–April 2022.[4] As in the rest of world, Indian schools also shared a variety of learning material during the period when schools were closed. However, while there is a fair amount of information about the type of content and material being shared, not much was known about whether children were receiving this material and how they were engaging with it. As schools reopen, it becomes critical to understand what worked and for whom. It is most likely that the shift to remote learning widened the variations in access to education and accentuated equity issues in learning in India as well.

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[3]Global Education Evidence Advisory Panel (2022). Prioritizing learning during COVID-19.

[4]After the first closure in March 2020, schools opened across some states between September and December 2020 but promptly closed as COVID-19 cases began to rise again. The second wave of COVID-19 in India subsided after May 2021, and while schools started reopening across some states (for some grades), there was no full-fledged reopening. The third wave of COVID-19 hit India in December 2021, leading to re-shutting of schools which had opened only recently. It is only after the passing of the third wave, in March 2022, that schools across all states and grades will finally reopen in April 2022, two full academic years after they shut down in March 2020. See Annexures 1 and 2 in ASER 2021 for more details.

In the next section, we present some results from studies undertaken during the pandemic in India. In Section 3, we discuss the findings from two large-scale, nationally representative surveys, which focused on access to learning opportunities and educational support available at home for rural Indian children. Section 4 provides new data on learning loss for three states in India. Section 5 delves into the lessons from some of the learning strategies that have been used during the pandemic in India. Section 6 concludes with a discussion of some short-term and long-term implications.

2. Evidence from Studies on Education During the Pandemic in India

There is not much large-scale evidence available on the impact of COVID-19 on education in India, and by and large, studies have focused on access to learning materials and whether children faced any challenges studying remotely. With movement severely restricted during the pandemic, most studies had to rely on the use of phone surveys to collect information. Since there is no representative frame available for phone numbers across different geographies, researchers had to rely on previous studies or draw respondents from areas they were working in. For instance, in a study focusing on 13 states they operate in, Save the Children (2020) finds that about 80% of children were facing obstacles in learning during the time schools were closed, while 75% reported that they could not use the internet due to limited access and 30% said that they had no support for learning. The study sample consisted of 754 children in the age group of 11–14 years. Similarly, in a rapid assessment of 1,200 parents and 500 teachers across five states, Oxfam India (2020) finds that 82% of the parents faced challenges in supporting their children to access digital education and 84% of the teachers struggled with delivering lessons through digital media.

Magic Bus (2020) surveyed 3,700 of the most vulnerable families within their national network to study the impact of the pandemic on livelihoods and education. In their sample, 41% of the households said that they are unable to afford school fees and 83% of the children did not have

access to online learning. Ghatak *et al.* (2020) also focused on adolescent children from marginalized households and reported low uptake of educational content broadcast on TV. In a sample of 3,176 households from five Indian states, they find that only 11% of the children had watched any educational content on TV even though 52% of them had a TV at home.

All studies confirmed limited access to learning resources shared remotely and a growing rural–urban digital divide. However, none of the studies focused on the impact this would have on learning outcomes. An exception was a study by Azim Premji University (2021), as part of their field studies in education. Using data from a pre-COVID-19 baseline and a follow-up assessment done in January 2021, the study gives estimates of learning loss for children in primary grades.

At the start of the pandemic in March 2020, an assessment of language and mathematics in 16,067 children in 1,137 public schools across 44 districts in five states was done by teachers who were closely affiliated with the Azim Premji Foundation. The selection of children was based on discussions with the teachers, covering children whom the teachers had taught in the previous year and were familiar with. The same children were assessed in the same competencies about a year later in January 2021. The study found evidence of large learning losses. In language, 92% of the children in grades 2–6 had lost at least one specific ability from the previous year. The language abilities that the children were tested on included reading familiar words, reading with comprehension, and writing simple sentences based on a picture. Similarly, in math, 82% of the children in grades 2–6 had lost at least one specific ability from the previous year. The math abilities that the children were tested on included identifying single- and two-digit numbers, performing arithmetic operations, using basic arithmetic operations for solving problems, describing 2D/3D shapes, and reading and drawing inferences from data.

With limited access to learning materials while schools were closed, these estimates of learning loss are not surprising and are in line with the international evidence. Furthermore, the learning gaps are likely to be exacerbated for already disadvantaged children, further widening equity gaps. While the pandemic has affected most sectors, what is also clear is the disproportionate impact it has had on the already vulnerable groups, with education being no different. None of the studies discussed above

compare the impact of the pandemic on different groups of children, most likely due to limited sample sizes or the focus on only certain kinds of households. Furthermore, none of them provide national estimates, and often, the sample is limited to participants of certain programs.

In the next section, we discuss the evidence from the nationally representative Annual Status of Education Report (ASER) conducted in over 50,000 households across almost all rural districts of the country in September 2020 and 2021.

3. Large-scale Evidence from Rural India: ASER 2020 and 2021 (Phone Surveys)

Soon after schools were closed in India, as in many other countries, school systems began to share different kinds of learning materials using a variety of modes. The materials ranged from traditional materials, such as textbooks and worksheets, to educational content broadcast over radio and TV, and finally sharing remote web-based resources, such as recorded and live online classes. Many states, including Assam, Jammu and Kashmir, Manipur, Madhya Pradesh, and Uttar Pradesh, shared learning materials in all these forms. Others, such as West Bengal, shared textbooks and online resources; Tripura shared textbooks and had educational programs on TV. By and large, though, most states shared textbooks and some sort of web-based content.[5]

However, though there was a fair amount of information on what Indian states were doing to facilitate learning while schools were closed, very little was known about whether these materials were reaching children and what kinds of learning activities they were engaged in. All global predictions, as discussed above, pointed toward large losses that would be unevenly distributed, with already vulnerable groups taking the brunt of the suffering, but there was hardly any systematic information on what was the actual situation on the ground.

[5]For more details, see Annexure 2 in ASER 2020: http://img.asercentre.org/docs/ASER%202021/ASER%202020%20wave%201%20-%20v2/annex2-learningmaterialssharedbystategovernments.pdf.

The Annual Status of Education exercise (facilitated by Pratham) pivoted by departing from the usual practice of actual field surveys focused on generating estimates of basic reading and arithmetic. With schools closed and movement in the field restricted due to the pandemic, no reliable estimates of learning loss were actually available and all information gathering could only be done via phone surveys. In 2020 and 2021, ASER conducted surveys via phone to explore the underlying educational trends and learning opportunities during this time of prolonged school closure. Schools had been closed for more than a year and a half, long enough for two ASER phone surveys to be conducted one year apart (September 2020 and September 2021) so that the changes during this school closure period could be studied.

Both waves of ASER, in 2020 and 2021, probed the following types of questions: What decisions were made within families about their children's education? What opportunities were available to households in different parts of the country? What was the relationship between home and school during this period of crisis? Whether the learning materials were actually reaching children, and were there any differences in access, with certain groups of children being at a disadvantage? Were children engaging with learning materials while they were studying at home? Did they have other resources to help them learn outside the classroom?

Such questions are important at any time but even more critical today. In the current context, it was crucial to understand how much learning loss we could expect to see and for whom, as well as what factors could potentially help to control the damage. Furthermore, these questions were important to answer in order to design educational programs during this period as well as to chart out a plan of action for what should happen in classrooms when schools did reopen. Whether as a family or a school or a school system or a country, planning the next effective steps is crucial. Data that are systematically collected from a nationwide sample in a timely fashion can be invaluable for visualizing the path forward.

The two waves of ASER in 2020 and 2021, both nationwide, phone-based surveys focused on rural areas in India, were designed to grapple with some of these questions. The surveys covered almost all rural districts of India and was designed to be representative at the state and national levels. Table 1 gives the sample description of the two surveys.

Table 1. ASER 2020 and 2021: Sample description.

		Covered			Surveyed		Contacted	
ASER Year	Age Group Surveyed	States & UT	Districts	Villages	House-holds	Children	Total Schools	Of Total Schools, Schools that Were Open
ASER 2020	5–16	30	584	16,974	52,227	59,251	8,963	0
ASER 2021	5–16	30	581	17,184	76,706	75,234	7,299	4,872

Both surveys focused on the following four domains:[6]

- *Enrollment*: Whether the child is currently enrolled in school or pre-school, type of school, and grade enrolled in.
- *Learning support at home*: Whether someone at home helps the child to study, and if so who, and whether the child has a private tutor.
- *Access to learning materials*: Whether the child received learning materials, such as textbooks, or other learning materials, such as worksheets, or remote learning resources from the school, and if so how did they receive the material.
- *Engagement with learning materials*: Whether the child engaged in any learning activities and if so what kind of activities.

In addition, the ASER 2020 and 2021 surveys collected data on household resources, such as availability of smartphones, household assets like TVs and vehicles, and parents' education. While the ASER survey does not collect detailed information on the socioeconomic status of the household, the information on parents' education can be used as a proxy for affluence. According to ASER 2020, children with low parental education are less likely to have a smartphone — 45% as compared to 79% of children with high parental education.[7] They are also more likely

[6]For more details, see ASER Centre (2020 and 2021).

[7]"Low" parental education is defined as both parents having completed Grade 5 or below, and "high" parental education is both parents having completed at least Grade 9; "moderate"

to send their children to government schools — 84% as compared to 54% of children with more educated parents.

Children from economically weaker backgrounds typically tend to have lower learning outcomes. There are a variety of channels through which this effect operates. For instance, children from poorer households tend to have less educated parents who are unable to provide learning support comparable to those in richer households. Parents support their children's learning in a variety of ways. They help their children with their homework; they understand the importance of education and encourage their children to focus on school work; if they can financially afford it, they send their children to private schools and/or provide supplementary resources, such as private tutors, to help them academically; they, especially mothers, spend more time with the child, providing input into the overall development of the child. Remote learning opens up another channel that widens the learning disadvantage of relatively poorer children. These children may not have access to devices, such as computers, tablets, and smartphones, that are needed for remote instruction and therefore may not be able to access the learning materials provided remotely by the state during the pandemic.

In the next section, we use the ASER 2020 and 2021 data to examine the impact of the pandemic on education in rural India. We also focus on equity issues so as to examine if the brunt of the impact of the pandemic was borne by already vulnerable groups. Using parental education as a proxy for affluence, we try to highlight the differences in enrollment, learning support, and access to and engagement with learning materials across different groups of children.

4. Influence of the Pandemic on Children's Education in India: Highlights of Findings from ASER 2020 and 2021 (Phone Surveys)

In this section, we briefly discuss the patterns and trends of enrollment, learning support at home, access to learning materials and learning opportunities, and engagement with learning materials during the pandemic.

parental education is a residual category containing all other combinations of mother's and father's schooling. In rural India, 22.5% of children have parents with low education, compared to 27.6% with high parental education. The remaining 50% are in the middle.

4.1 Enrollment

One of the major concerns about the impact of the pandemic on education, especially in developing countries, was that it might also result in an increase in dropout rates. With economic activity slowing down and family budgets getting squeezed, it was possible that the older children would drop out of school. In the case of India, this was a distinct possibility, with very few institutional safety nets available to protect unemployed workers and the government not offering any substantial cash-based relief package for workers or businesses to protect employment. The migrant crisis further exacerbated the problem, with migrant workers moving back to villages, leading to a possible influx of migrant children from urban to rural areas.

Overall, there is an increase in the proportion of children enrolled in government schools between 2018 and 2021 (Table 2). From 2006 to 2014, there had been a steady increase in the proportion of children enrolled in private schools at the elementary stage. After plateauing around 30% for a few years between 2014 and 2018, there has been a significant decline during the pandemic years (between 2018 and 2021). The causes of this decline in private school enrollment may have to do with financial distress in rural families as well as difficulties faced by the low-cost or budget school sector in surviving the economic disruptions brought on by the pandemic.

The increase in government school enrollment is evident across all grades and for boys as well as girls. Like with many other indicators of human development in India, there are wide variations across states. The highest increase in government school enrollment over this period is seen in Uttar Pradesh, going from 43.1% in 2018 to 56.3% in 2021. Kerala also saw an increase from 47.9% to 59.8%. It is also possible that households were responding to entitlements offered by government schools that ranged from textbooks and learning materials to food rations in lieu of midday meals. In fact, Uttar Pradesh, India's largest state, implemented a massive direct benefit scheme for all children enrolled in government schools in 2021.

The proportion of children not currently enrolled in schools in the age group of 6–14 years, went up from 2.5% to 4.6% between 2018 and 2020 with no further increase in 2021 (Table 3). However, if we disaggregate by

Table 2. Enrollment trends (all-India rural).

Age: 6–14	Government Schools	Private Schools	Other Kinds of Schools	Not Enrolled	Total
2018	64.3	32.5	0.7	2.5	100
2020	65.8	28.8	0.8	4.6	100
2021	70.3	24.4	0.7	4.6	100

Source: ASER (2018–2021).

Table 3. Percentage of children currently not enrolled in schools.

	% Children Currently Not Enrolled in School		
Age group	ASER 2018	ASER 2020	ASER 2021
Age 6–14: All	2.5	4.6	4.6
Age 7–10: Boys	1.4	4.7	4.7
Age 7–10: Girls	1.4	4.1	4.1
Age 11–14: Boys	2.9	3.9	4.3
Age 11–14: Girls	3.6	3.9	3.9

Source: ASER (2018–2021).

age groups, the largest drop in enrollment between 2018 and 2020 is for the youngest age group, with the proportion of 7–10-year-olds not currently enrolled in school rising from 1.4% in 2018 for boys and girls to 4.7% in 2020 for boys and 4.1% for girls. This increase may simply be due to the fact that many young children (6–7-year-olds) were waiting to seek enrollment when schools reopen.

Schools shut down in India in March 2020 at the end of the 2019–2020 academic year.[8] A new cohort of children (6–7-year-olds) would have normally started school in April 2020. To encourage universal enrollment into formal schooling, many state governments have enroll-

[8]The school year in most states in India is from April to March of the following year.

ment drives at the beginning of the school year. However, with schools shut or with the primary grades not yet open and physical movement restricted in the field due to the pandemic, it is quite possible that many young children did not get enrolled but would do so when schools reopen. Therefore, it would be premature to conclude that dropout rates have increased for the youngest age group, and the correct picture would only emerge once schools reopen for primary grades and enrollment settles down.

Given that the pandemic had a much larger adverse impact on the incomes of the poor, it is possible that unenrolled children were much higher among children from poorer families. However, for children with less educated parents, while enrollment rates were slightly lower in the younger age groups, the overall enrollment rates actually increased between 2018 and 2020, driven mainly by the huge rise in the enrollment rate for the 15–16 year age group, most likely due to the push to universalize secondary education.

4.2 Learning support at home

One of the key drivers of academic achievement is the learning support children receive at home. This could be in the form of parents or other family members helping the child to study or more organized supplementary resources like a paid tuition.

The ASER 2020 survey delved into the question of who supports learning at home. Overall, in ASER 2020, 75% of the enrolled children reported receiving help from family members to study at home. Younger children were more likely to get help than older children — 81.5% of the children in grades 1–2 received help from family members as compared to 68.3% of the children in grades 9 and above. This is not surprising since parents may not be able to help with the more difficult curriculum of higher grades. Similarly, mothers were more likely to help children in primary grades and older siblings in higher grades. While we don't have past evidence on how much help children get at home in studying, this finding is noteworthy in that different family members stepped up to the task during a period when schools were closed.

However, here we see big differences in terms of parental education. Parental help to children rises with education (Table 4). Parents with low education are less likely to help their children with school work — only 55% of the children with low parental education received any learning support at home compared to almost 90% of the children with high parental education.

Beyond school enrollment, there is another important facet of access to education, that we need to consider — paid "tuition" classes. This is a gray area. Data on tuition classes are not easy to find. The ASER survey routinely collects data on tuition, and the trends over time show distinct patterns across India. In the northern and northwestern states, such as Punjab, Haryana, Rajasthan, Himachal Pradesh, and Uttar Pradesh, private school incidence is relatively high and tuition-taking is low. In contrast, in the eastern states, such as West Bengal, Bihar, and Odisha, private schooling is low. But even for young children, going to "tuition" is a major feature of the educational landscape.

According to ASER, at the all-India level, incidence of paid tuition has remained between 25 and 30% for the last many years. However, an increase was observed in 2020 with the proportion of children taking tuition rising from 28.6% in 2018 to 32.5% in 2020. This number further increased to almost 40% in 2021 (Table 5). At the state level, in 2018, well over 50% of children of school going age in Odisha, Bihar, and West

Table 4. Percentage enrolled children who get help at home in terms of parents' education and family member.

	Low Parental Education	Medium Parental Education	High Parental Education
No help	45.2	23.5	10.6
Father	14.0	32.3	30.1
Mother	7.6	20.6	45.1
Elder sibling	23.2	14.1	7.6
Other	10.0	9.5	6.6
Total	100	100	100

Source: ASER (2020).

Table 5. Percentage of enrolled children who take tuition by grade.

Grade	ASER 2018	ASER 2020	ASER 2021
Grade I–II	24.2	33.2	37.0
Grade III–V	27.7	32.9	39.4
Std VI–VIII	28.6	30.7	38.9
Std IX+	35.5	33.6	41.1
All	28.6	32.5	39.2

Source: ASER 2018–2021.

Bengal were taking some form of tuition classes. In 2021, this figure had gone over 60% in Odisha and well over 70% in Bihar and West Bengal. In fact, the incidence of tuition has increased across almost all states — perhaps a natural response to the prolonged school closure. It is curious that while economic disruptions may have moved children out of private schools (in fact, in many cases, the pandemic destroyed the economy of low-cost private schools), parents were still able to access tuition classes, where they had to pay fees. This may be due to the fact that tuition classes are a local phenomenon, where payment may be adjusted flexibly and quickly based on demand and supply negotiated between the tutor and the family. It is clear that the large and growing "tuition" sector needs to be better understood in terms of its role in education provision and learning support in rural India. The decisions to open or shut government schools are taken by authorities at district or state level, with school teachers having no say in when or how school reopening can happen. But for the tuition sector, all decisions are local, flexible, and can be immediate; these classes open or shut easily, responding instantly to local conditions with different waves of the pandemic.

4.3 Access to learning materials and learning opportunities

ASER 2020 and 2021 asked households about smartphones at home. Data indicate that the availability of smartphones in households has almost

doubled since 2018. This is true for families whose children are enrolled in government schools as well as private schools. From ASER 2020 figures, it was clear that a smartphone had been bought since the lockdown began in one out of ten households to help children with studies. When asked the same question in ASER 2021, we find that the proportion had increased to 27.9%. In 2018, 29.6% of the families with children enrolled in government schools had smartphones. This number increased to 56.4% in 2020 and to 63.7% in 2021. For families with children enrolled in private schools, the equivalent figure climbed from 49.9% in 2018 to 74.2% in 2020 and to 79% in 2021. Overall, approximately 67.6% of the households with school-age children had smartphones in 2021. ASER also shows that access does not automatically mean use. While there are wide variations across states, a little over one-fourth of all children with at least one smartphone are able to access the phone easily and another one-fourth is not able to access the phone at all.

As mentioned earlier, the states shared a variety of learning materials while schools were closed, including textbooks, worksheets, educational content on radio and TV, and online resources, including live online classes. These materials were shared in a variety of ways — phone calls, messaging services, such as WhatsApp and SMS, as well as through personal visits, with teachers visiting homes and/or parents visiting schools.[9]

ASER 2020 reports on whether children received these learning materials and, if so, how. States were extremely successful in sending textbooks to children, with 80.5% of the enrolled children responding that they had textbooks of their current grade. The reach was quite even, with 79% of the children with "low" parental education receiving textbooks as compared to 83% of the children with high parental education.

However, in the case of other learning materials, the success rate was much lower, with only 35% of the enrolled children responding that they had received any other (apart from textbooks) learning material from their schools, in the week prior to the survey. Unlike the case of textbooks, the equity gap is larger here, with only 26.7% of the children with low

[9]About two-thirds of the surveyed children in ASER 2021 were in schools that had reopened at the time the survey was being conducted. Therefore, we focus on the ASER 2020 findings on access to and engagement with learning materials.

parental education receiving any material as compared to 49% of the children with high parental education. There could be a variety of reasons for this large gap in access. First, as noted earlier, a majority of children at the lower end of the income distribution are enrolled in government schools, and these schools were slightly less successful at distributing learning materials as compared to private schools — 33% of the children in government schools reported receiving learning materials as compared to 40% in private schools.

Second, while schools used a variety of ways to share materials and activities, such as WhatsApp and other messenger apps, in-person visits, and phone calls, by and large, they relied on one medium — 87% of the children received learning materials only via one medium. Among these children, the predominant source was WhatsApp (72%), though there was some compensation for the lack of a smartphone, with about 20% of the children getting the materials through personal visits through either teachers visiting homes or parents visiting schools. Again, with a majority (55%) of children in relatively poorer households not having a smartphone, their access to whatever learning material was being distributed would be limited.

Therefore, during the period when schools were closed due to the pandemic, the predominant learning resource available to the children with low parental education was their textbooks, with some limited support from parents and tutors. This has clear implications for the kind of learning activities these children could engage in, if at all, as we will see in the next section.

4.4 Engagement with learning materials

In addition to asking about the availability of learning materials, ASER 2020 also asked whether children had engaged in any learning activities in the week prior to the survey. The survey also differentiated between different kinds of material the child engaged with — textbooks, worksheets, educational content on TV or radio, and web resources, including live online classes. Even though only 35% of the children responded that they had received any learning material (other than textbooks), 70% said that they had engaged in some kind of learning activity in the previous

week. Not surprisingly, though, majority of the children worked with traditional materials, such as textbooks and worksheets (Table 6). Only a fifth of the children watched educational programs on TV and a negligible proportion on the radio — but this was more due to the availability of such programs in a state since not all states were broadcasting educational content. However, barring three states,[10] all states were allegedly sharing online video lessons, but only a fifth of the children watched educational videos or recorded classes on web-based mediums, and only 10% attended live online classes. Of course, it could just be that households did not have the necessary technology or had other tech-related problems in viewing online resources. ASER 2020 probed parents on some of the reasons for not receiving learning materials from the school, and predominantly (68%), the response was that the school was not sending any materials; 25% said that they didn't have a smartphone; 11% had no Internet access; and 5% blamed connectivity issues.

The equity gap is evident in the engagement with learning activities as well, with 40% of the children with "low" parental education doing no learning activity as compared to 20% of the children with "high" parental educations. With limited access to digital devices, only 4.7% participated in online classes as compared to 20% of the better-off children (Table 6). This is important because among the learning materials/resources shared by the state, the closest thing to "instruction" were online videos/classes. In other words, children whose parents had little or no education suffered both in terms of their access to learning materials as well as the quality of learning material they could access. They also started off with a much larger learning deficit — according to ASER 2018, the proportion of children in Std. V with low parental education, who could read a Std. II–level text was 35% as compared to 70% of the children with high parental education. What this means is that the adverse impact of school closures on learning outcomes will affect economically weaker children

[10]These states were Arunachal Pradesh, Meghalaya and Tripura. For more details see Annexure 2 in the ASER 2020 report: http://img.asercentre.org/docs/ASER%202021/ASER%202020%20wave%201%20-%20v2/annex2-learningmaterialssharedbystategovernments.pdf.

Table 6. Percentage of the enrolled children who engaged in learning activities by parents' education and type of material.

Parents' Education	Traditional		Broadcast		Online	
	Textbook	Worksheet	TV	Radio	Videos/Recorded Classes	Live Online Classes
Low	50.2	28.4	13.5	1.9	11.1	4.7
Medium	59.2	33.8	19.0	2.8	19.8	8.9
High	69.2	44.0	25.7	2.9	33.3	20.0
All	59.7	35.3	19.6	2.7	21.5	11.0

Source: ASER 2020.

disproportionately, further widening the gap between the more well-off children and poorer children.

5. Estimates of Learning Loss Using ASER Data (State-Level Field Surveys)

It is well known that the basic learning levels of children in elementary schools in India had been chronically low for more than a decade before the pandemic struck India. In fact, the ASER series, which were carried out annually from 2005 to 2014 and then in 2016 and 2018, is a valuable and unique source of learning data over time. For the period 2008 –2018, Figure 1 shows that the learning levels have remained persistently low for over a decade. In India, by the end of Grade 2, children are expected to be reading simple text fluently and doing basic arithmetic operations like addition and subtraction with carryover and borrowing with two-digit numbers. Based on these criteria, ASER data from 2018 indicate that in Grade 3, less than 30% of the children are at "grade level" both in reading and in math.

While some studies have simulated the impact of the pandemic on learning outcomes, there are not many estimates available that are based on assessments undertaken during this period. This is especially true for developing countries. As mentioned earlier, ASER 2020 and 2021 were phone-based surveys and did not assess children remotely. However,

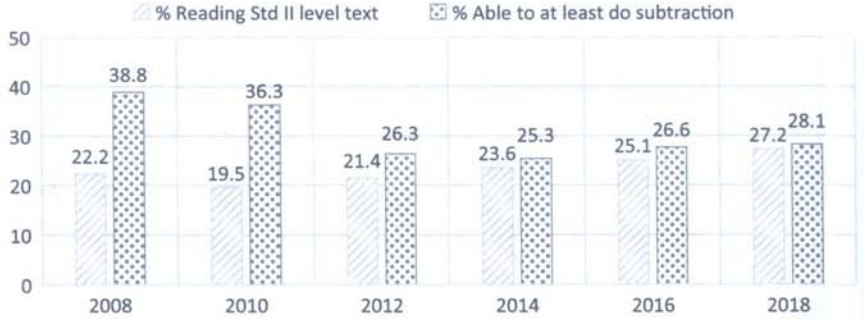

Figure 1. Percentage of Std. III children who are at "grade level."
Source: ASER data for rural India.

ASER found windows of opportunity to return to villages and communities in states where resumption of field activities was possible: It conducted state-wide field surveys in Karnataka in March 2021 (2020–2021 school year), Chhattisgarh in October–November 2021 (2021–2022 school year), and West Bengal in December 2021 (2021–2022 school year). During the period when the surveys were conducted, schools were still closed in Karnataka and West Bengal, and children were studying remotely. In Chhattisgarh, schools had been open for about a month or so at the time of the survey, though they shut down again in December 2021. Data from the surveys can be used to generate estimates of learning loss. Even though these were not national surveys, they are representative at the state level and useful in so far as they give us an idea about the magnitude of the loss.

Figure 2 gives the timeline of the three state surveys, and Table 7 gives the sample sizes.

Figure 3 shows the reading levels in Grade 3 over time for the three states. State-level estimates clearly show sharp drops in reading ability between 2018 and 2020–2021 for all three states. Learning levels that were either improving or steady between 2014 and 2018 dropped significantly during the pandemic. In fact, in all three states, the 2020–2021 levels were below the 2014 levels. For instance, in Chhattisgarh, about a fifth of the children in Grade 3 were reading at grade level in 2014. By 2018, this number had increased to about 30%; however, in 2021 only

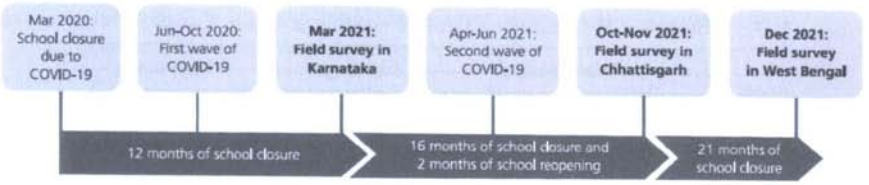

Figure 2. Timeline of ASER field surveys.

Table 7. ASER field surveys: Sample description.

ASER Survey	Districts Reached	Villages Covered	Households Surveyed	Children Surveyed
ASER Karnataka Field survey (Mar 2021)	24	670	13,365	18,385
ASER Chhattisgarh Field survey (Oct–Nov 2021)	28	1,677	33,432	46,021
ASER West Bengal Field survey (Dec 2021)	17	510	10,141	11,189

Figure 3. % of children in Grade 3 reading at Grade 2 level.

12% children in Grade 3 were able to read a Grade 2–level text. We see a similar situation for reading in Grade 5 (Table 8). Again, learning levels that had been steady or rising since 2014 plunged during the pandemic.

A similar pattern is seen in arithmetic as well (Figure 4 and Table 9). In all three states, children's ability to do basic arithmetic operations, in

Table 8. % Children in Grade 5 reading at Grade 2 level.

	West Bengal	Chhattisgarh	Karnataka
2014	53.2	52.4	47.2
2016	50.4	56.0	42.1
2018	50.7	59.5	46.0
2021	48.5	44.6	33.6

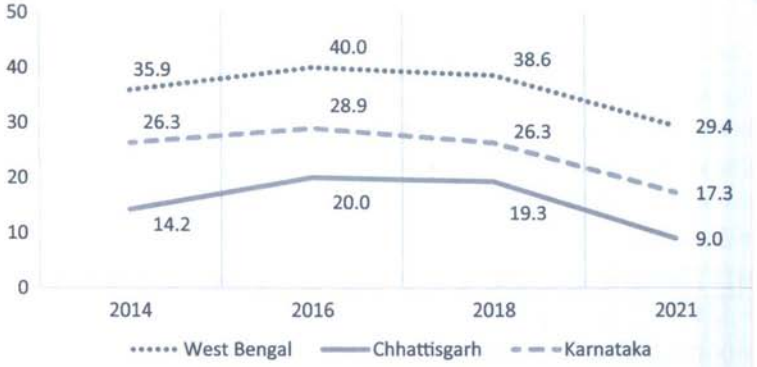

Figure 4. % Children in Grade 3 who can at least do subtraction.

Table 9. % Children in Grade 5 who can do division.

	West Bengal	Chhattisgarh	Karnataka
2014	32.5	18.0	20.1
2016	29.3	23.0	19.7
2018	29.7	26.8	20.5
2021	26.2	13.0	12.1

primary grades, fell sharply in the last two years, wiping out any gains made since 2014. For instance, in Karnataka, about a fourth of the children in Grade 3 were able to do simple subtraction problems. While there was not much improvement in 2016 and 2018, in 2020, there was a significant decline, with only 17% of the children in Grade 3 being able to do subtraction.

Table 10. % Children enrolled in government schools in Karnataka who can at least read a Std II–level text

Grade	2016	2017	2018	2019	2020
2	6.8		7.4		3.0
3	18.9		19.4		9.8
4	29.8		35.2		17.8
5	41.9		47.6		32.8

The pandemic-induced, recent learning loss can also be clearly seen in a cohort table for Karnataka (Table 10). For example, observe the cohorts moving from Grade 2 to Grade 4. Children who were in Grade 2 in 2016 were in Grade 4 in 2018 (red cohort). In this two-year period, the ability of the cohort to read a Grade 2–level text increased from 6.8% to 35.2% (28.4 percentage points over this period, or 14.2 percentage points annually). However, consider another cohort (purple diagonal): two years later, for children who were in Grade 2 in 2018 and in Grade 4 in 2020, the corresponding increase was from 7.4% to 17.8% (only 10.4 percentage points in two years, which implies 5.2 percentage points annually). The growth in learning is less than half of that possible in a "usual" year, implying a learning loss of over a year. A similar pattern is seen for Chhattisgarh as well.

These estimates compare quite well with simulations done by the World Bank and the learning losses that are being seen in other developing countries (The World Bank, UNESCO, and UNICEF, 2021). If we assume that the data trends seen in Karnataka, Chhattisgarh, and West Bengal are likely to also be seen in other states as well, then we can expect at least a one-year learning loss for children in India, especially in the younger grades.

6. Strategies and Interventions that Have Been Employed in India and Learnings

As in other countries, a variety of remote learning strategies was tried in India in the past year and a half. These ranged from local-level efforts by

schools or communities to large-scale interventions by governments and larger institutions. For remote learning, the efforts can broadly be categorized as follows:

- Online classes or video lessons;
- Phone messages, usually WhatsApp messages;
- Radio or television programs.

Online classes were largely used by private schools where availability of devices to children was high and connectivity was not a problem. In some states, online classes were also used for higher grades. At least for India, there is no publicly available, systematic study on the scale of impact of online classes on children's learning that can be compared to offline learning as is done in normal times. Comparing the results of board exams from pre-COVID-19 years with the past two years is also not helpful, as the examination content and processes have been modified during the pandemic.

One of the strategies that was widely used in the government school system was the use of smartphones and WhatsApp to deliver learning materials, usually worksheets or videos demonstrating learning activities. In some contexts, individual teachers sent materials, and in others, governments at the district or state level delivered learning resources in a coordinated fashion.

Several reports that were published at different times of the crisis have collated or summarized these efforts by governments in India.[11] However,

[11] A group of organizations and consulting companies who work with state governments has collected and collated inputs and experiences from the states in which they operate. These "best practices" can be found at https://centralsquarefoundation.org/Home%20Learning%20Playbook_Final_31st%20August.pdf.

The Ministry of Education at the central government level put together a digital report. See https://www.education.gov.in/sites/upload_files/mhrd/files/India_Report_Digital_Education_0.pdf.

Another compilation can be found at https://centralsquarefoundation.org/articles/how-to-design-effective-home-learning-programs-takeaways-from-7-indian-states.html.

Also, see chapters on India in the publication available at http://www.ibe.unesco.org/en/news/arning-build-back-better-futures-education-lessons-educational-innovation-during-covid-19

a systematic assessment of the strategies across all states, aiming to establish effectiveness or success, is not available.

6.1 Learnings from Pratham programs during the pandemic

Pratham's own "direct" programs reach over 10,000 communities on a daily basis. A variety of strategies for remote engagement and learning was tried here as well. Several learnings from observing, tracking, and analyzing these remote efforts are worth highlighting.[12] For the first several months, the goal was engagement rather than learning. Children and families were going through a difficult period and hence needed to be engaged in activities that could help them take their minds off economic uncertainties or fear about health issues. By focusing on engagement, we learned a lot about how to facilitate and sustain continued participation, how to keep motivation high, and how to constantly iterate and improve content to make delivery better. Some of the key learnings are outlined in the following.

Reaching out to as many children and families as possible is crucial from an equity point of view. Here are some key points that emerged during the early days of the lockdown and the prolonged period of school closure:

- **Persistent efforts for reaching out reap results:** Prior to the pandemic, especially in programs where face-to-face daily interactions were happening in communities and schools, there was no need to collect or use phone numbers. When the pandemic suddenly hit and lockdown was imposed, Pratham teams had very few phone numbers of children's families with them. However, as a determined and systematic reach out effort was initiated, many more phone numbers became available. In the early days of the lockdown, at least one

[12] For most of the period of April 2020 – October 2021, Pratham sent messages to children and families in approximately 11,000 rural and urban communities where there had been a direct Pratham connection in pre-COVID times. About 300,000 messages went out every day on average. At the peak of the "reach out" campaigns, the numbers were close to 475,000.

person in each community was contacted, and through them, the teams reached out further to at least one person in each hamlet. With such a cascading approach, the strategy was to persist until we were sure that the reach had been maximized in every hamlet. Internal data indicate that Pratham's education programs were sending out close to 56,800 messages on April 12, 2021, and this figure increased to 207,400 by June 12, 2021.[13] Having a list of active phone numbers of families and keeping this list updated is a must and an essential part of the preparedness for future disruptions.

- **Unit of operation changed during pandemic from village to hamlet:** Prior to the pandemic, the usual unit of operation for Pratham's education programs was the local government primary school and the catchment area or village (and the same in urban areas) around it. However, as the lockdown proceeded, for reaching out, tracking, and other activities, the sub-village unit — usually the hamlet — was the most useful. Even as schools are reopening, the hamlet-wise tracking of re-enrollment and attendance is proving to be very handy in terms of planning the next course of action.
- **SMS messages were needed in addition to WhatsApp for maximizing reach:** Early in the pandemic, at least for Pratham communities, it was clear that smartphones were available only in some families. Depending on the location and the context, the incidence of families in these communities who had access to smartphones ranged from 30% to over 60%. However, close to 90% had access to some kind of phone — usually a basic phone.[14] These data and experiences from the ground indicated that to communicate with as many families as possible, there was an urgent need to use messages for basic phones. Over time, about 40–45% of all Pratham messages were SMS messages and the rest were WhatsApp messages. Depending on the social structure into which the messages were being sent, a combination of messaging (SMS and WhatsApp) was also done. For example, for hamlet-wise mothers' groups, individual mothers received SMS messages on a daily basis, but once a week, the group leader (often referred to as SmartMom)

[13] See Pratham report 1 (MME 2020–2021).

[14] Pratham's internal data (MME 2020–2021).

would receive digital content for group activities. With a large section of the population not being able to access smartphones, it is critical that both SMS and WhatsApp options are used equally; the delivery and content needs to be continually adapted to these conditions.

- **Dynamic nature of access to digital devices:** In the first few weeks of lockdown, when all family members were at home, children's access to the available smartphones was high. However, as lockdown restrictions loosened up, adults in the family began to go out for work, and we noticed a fall and delay in children's responses. Furthermore, as the economic disruptions continued, some households had difficulty in buying internet time. (ASER 2021 data show that, on average, 26% of the children in households with smartphones do not have access to a digital device and that access varies considerably by age and grade.) The key lesson is that the availability of a smartphone in households does not guarantee ongoing and continuous access. Changing external conditions can influence how and when children get to use the phone for educational purposes. Therefore, ongoing tracking of access is essential if remote learning mechanisms are to be used for a long period of time.

Ongoing interactions and conversations help in keeping children's engagement and family participation high. Two-way communication is crucial for improving content and delivery: In many different ways, during the period of school closure, we learned about the importance of ongoing two-way communication for feedback and follow up:

- **Ongoing interactions with a known person sending messages gets more engagement than bulk messaging:** Early in this period, a decision had to be taken on how messages would go out. While the WhatsApp technology enables easy distribution to groups with two-way channel of communication built in, that is not the case with SMS. Yet, it was felt that given the limitations of content delivery in text form and the weaker economic background of these households, families that received SMS messages would need more hand-holding and interactions. Instead of using bulk messaging, it was decided that a Pratham team member would send out SMS messages to families. It

would be the same person who would call the family once a week or once a fortnight to understand the current status of the family and to receive feedback on the activities being sent. The ongoing human interaction also encouraged children to send back their responses either in the form of video, audio, photographs, or text. It was not uncommon for children to be sending their responses to the activity prompts via neighbors' or friends' phones. Whether children or parents, a large part of the motivation to share and respond to content that was being sent was due to the personal touch of the sender. This was very important for maintaining high engagement over a long period of time.

- How human interaction leads to better traction for digesting information was clearly visible in a six-week COVID-19 awareness campaign, involving large-scale phone messaging, that was carried out by Pratham in May–June 2021.[15] Uptake of SMS and WhatsApp messages were similar, with nearly two-thirds of the recipients reading these messages. (This also means that a third of all messages received were not being read). In the tracking study that was done during this campaign, a set of contacts were spoken to only once during the week (spot-check contacts), while the rest were spoken to every day of the week. Data show that ongoing communication on a daily basis made a significant difference in reading messages, understanding content, doing related activities, and in sharing of information with other family members and friends.
- **Who in the household helps children with learning activities received through the phone:** If there is one smartphone in the family, it is usually in the hands of the adult male (father or brother). A deep dive into a small number of families was done in May–June 2020 to understand who receives the messages and who does the activities with children in the family.[16] Based on these studies, it seems that more fathers receive the messages but more mothers are engaged in helping the children. These patterns of engagement and participation vary by the child's grade.

[15] See Pratham report 2_KAS (MME 2020–2021).

[16] See Pratham report 3a and 3b (MME 2020–2021).

Social structures can be leveraged for maximizing reach and participation: In much of the discussion in this chapter on the role of educational technology in children's education, the focus is on the nature and type of digital content, access to devices, and connectivity. In Pratham's remote work during COVID-19, we have found that social structures (existing ones, such as friendships within the community, or new ones, such as children's groups and mothers' groups) can play a big part in deepening engagement. Group activities and individual contact are both important in keeping continuous participation at a high level:

- Young children learn more if there is engagement from family members: A Pratham study of an early childhood program showed that children have better learning outcomes if there are ongoing activities at home.[17] Learning gains are higher for those children whose mothers own phones and are educated, but some of these advantages are evened out when mothers without cell phones or without much education are part of mothers' groups.[18]

Content needs to be adapted for use depending on how you are sending and who is receiving:

- While WhatsApp messages can have video, audio, or text files, SMS is limited to 160 characters. Maximizing the activities that could be done within this character limit needed creativity. Discussions and feedback from parents also helped in this matter.
- For parents, it was important to follow "reaching at the right level" if we wanted their continued engagement. If the activities that were sent were too "school-like," the family members passed them on to their children to do on their own. If the activities were connected to real life, then there was greater involvement of those in the household.

[17] See Pratham report 4a (MME 2020-21).

[18] See Pratham report 4b and 4c (MME 2020-21).

7. Implications for the Future

To think about the implications for the future, it is useful first to look back at existing empirical evidence. Two questions can help to draw out guidance for the future. First, what was the situation with children's education before COVID-19 or in "normal" times? Second, what do past trends in schooling and learning tell us about what to expect in the future?

The last nationwide ASER of all rural districts was conducted in 2018. The enrollment data from 2018 indicate that over 97% of children in the age group 6–14 were enrolled in school. It would be fair to say that in terms of access to school, India had reached close to universal levels. The situation with basic learning was nowhere near satisfactory (Table 11).

As Table 11 shows:

- By Grade 3, less than 30% were at grade level. Even in pre-COVID-19 times, majority of children had fallen behind grade level in the first few years in primary school. A little under 20% were two grade levels behind, i.e., at Grade 1 level, but more than half of all children were not even at Grade 1 level.
- By Grade 5, only half of all enrolled children were reading at Grade 2 level or higher. Close to 30% were not even at Grade 1 level even after five years of schooling.

Table 11. % children at different levels of reading by grade.

Grade	Beginner	Letter	Word	Grade 1 Text	Grade 2 Text	Total
Grade 1	42.7	32.6	13.7	5.2	5.8	100
Grade 2	21.3	30.2	21.3	12.5	14.7	100
Grade 3	12.1	22.6	20.8	17.3	27.2	100
Grade 4	7.6	15.9	16.6	19.3	40.7	100
Grade 5	5.9	11.7	13.0	19.1	50.3	100
Grade 6	3.8	8.8	10.5	17.2	59.8	100
Grade 7	2.5	6.5	8.3	15.0	67.7	100
Grade 8	1.9	5.3	6.7	13.2	72.8	100

Source: ASER 2018, all-India (rural) all children enrolled in school.

- Even after eight years of schooling, one out of four children enrolled in Grade 8 had difficulty reading simple text.

Overall, the all-India (rural) data for basic arithmetic were even more worrying.

Second, ASER data are available annually for the period 2005–2014 and then every two years till 2018. This data can be used to see what children gained in terms of basic learning year on year in the normal years of the pre-COVID period. Using ASER data, cohorts over time can be tracked for every state. Let us use one state, Karnataka, as an example. Remember that for issues related to learning, Karnataka's figures for basic reading and arithmetic have been close to the national average.

ASER 2018 data for Karnataka also show similar patterns to the all-India data (Table 12). A substantial proportion of children in a grade are well below the expectations for that grade.

If we take a look at the cohorts over time, e.g., children who were in a particular grade in 2016, and track them to see their levels in successive grades two years later, we find that depending on the grade and the cohort, in a pre-COVID-19 year, children may have gained approximately 14 percentage points annually in terms of the ability to read basic text fluently. For example, if we follow the red cohort (Table 13), children who were in Grade 2 in 2016 were in Grade 4 in 2018. In this two-year period,

Table 12. % children at different levels of reading by grade.

Grade	Beginner	Letter	Word	Grade 1 Text	Grade 2 Text	Total
Grade 1	45.6	40.5	10.9	1.7	1.4	100
Grade 2	19.1	31.1	29.7	12.8	7.4	100
Grade 3	10.4	18.5	29.3	22.4	19.4	100
Grade 4	5.0	13.4	21.8	24.6	35.2	100
Grade 5	4.9	8.7	15.3	23.5	47.6	100
Grade 6	4.8	6.7	12.5	19.0	57.0	100
Grade 7	2.7	7.0	11.5	17.2	61.6	100
Grade 8	2.2	4.9	6.5	16.3	70.1	100

Source: ASER 2018, Karnataka (rural) children enrolled in government schools.

Table 13. Percentage of government school children who can at least read a Grade II–level text.

Grade	2016	2017	2018
Grade 2	6.8		7.4
Grade 3	18.9		19.4
Grade 4	29.8		35.2
Grade 5	41.9		47.6

Source: Karnataka, ASER 2016 and 2018.

the ability of the cohort to read a Grade 2–level text increased from 6.8% to 35.2% (28.4 percentage points for a two-year period is about 14.2 percentage point change annually. Similarly, we follow the orange cohort (those in Grade 3 in 2016 were in Grade 5 in 2018). In this two-year period, the ability of the cohort to read a Grade 2–level text increased from 18.9% to 47.6% (28.7 percentage points for a two-year period is about 14.3 percentage point change annually.

Interestingly, in Karnataka, in 2019–2020, there was a partnership between the Department of Elementary education and Pratham to implement a "teaching-at-the-right-level" program whose goal was to build basic reading and math skills. The program called "*Odu* Karnataka" was carried out for about 60 days in all government primary schools in 20 out of the 30 districts in the state. In this period, for two hours a day, the grade-level curriculum was put aside and the teacher focused on building basic literacy and numeracy skills of her children. Table 14 shows that in a short period of two months, schools were able to help their children gain 20–30 percentage points in basic reading and arithmetic.

These pieces of empirical evidence can help in joining the dots between past experiences and future directions. Once schools open and instructional activity begins, it will be crucial to focus on basic reading and math skills. On the one hand, we know that the pre-COVID-19 situation was far from satisfactory and needed urgent action. Since then, the pandemic has devastated the country and hit children's education hard; as the data in previous sections showed, there has been a weakening of

Table 14. Summary of *Odu* Karnataka program results in 2019–2020.

Academic Year	Name of Program	Focus Grades	Districts in Program	Approx. Number Teaching Days During Program	Coverage		Learning Improvement for Grades 4 & 5	
					Total Schools in Program	Total Number of Children Tested at Baseline	Change in Basic Reading Level	Change in Basic Arithmetic Level
2019-20	*Odu* Karnataka	Grade 4 and 5	20/30	60 days	21,635	5,24,000	31 pc pt. increase	21 pc pt. increase

learning levels in the state. On the other hand, Karnataka has a promising track record of providing learning support (as in *Odu* Karnataka) with good results. Logically, if the curriculum were to be put aside for some time during the day in the next few months and the "teaching-at-the-right-level" approach was to be applied in the remaining 15 weeks till the end of the school year, Karnataka could potentially see a "catch up" that may generate learning gains higher than those in a normal school year.

As we look ahead, it is worth remembering that the pandemic is not yet over. School reopening may not be a one-time event. There is likely to be intermittent school closures as local-level incidence of COVID-19 rises and abates. Hence, school reopening may need to be visualized and planned for in a dynamic way. As schools begin to reopen in India, close tracking of re-enrollment and attendance will be essential until enrollment and attendance patterns stabilize. Following COVID-19 protocols may mean that different children attend classes at different days and times. These variations in how schools are internally organized will need to be monitored closely. The decisions made in this regard have implications for who is supposed to come to school and when, and therefore, who gets how much exposure to instruction.

How the system helps children return to school will be critical. Unlike densely crowded urban areas, where opinions can be divided, majority of rural parents in India want their children to go back to school and children too are eager and willing. This enthusiasm is essential fuel for "building back better."

With schools having been closed for a long period of time, students of all ages need time and opportunity to settle down and reconnect with each other and with teachers. Children in today's first and second grades have never been to school. They have to be helped to get ready for schooling and learning. Another example: Today's Grade 5 children attended school almost two years ago while in Grade 3. They are now returning to school older and, perhaps, more worldly-wise. But they too will need help to settle in. Will schools demonstrate new ways to welcome children? Will the interaction between parents and teachers help to build trust and faith? These are key mechanisms to keep in mind in the current context.

As the country navigates through this stage of the pandemic, there are academic strategies to be developed and modified to face current

teaching–learning challenges. The use of grade-level curriculum may not be useful immediately. Instead, meeting children at the level where they are and using "teaching-at-the-right-level" approach is the need of the hour. Even the National Education Policy 2020 recommends that acquiring strong foundational skills needs to be a top priority. Available research from other countries shows that while school closures can lead to learning losses, what school systems do once schools reopen is even more critical. Making children deal with grade-level curriculum after almost a two-year gap or hurrying them through the syllabus is not an appropriate response in the current context. In fact, investing time and effort now in rebuilding and strengthening children's ability to read with understanding, their capacity to apply problem-solving skills, and learning to help each other in the classroom may provide the big boost needed to bring the education system back to where it was in pre-covid times and move further ahead.

The digital divide has been talked about widely. But after the experiences of the last two years, it is evident that a digital component of teaching–learning is here to stay. Assuming connectivity will continue to increase, in order to level the playing field, setting up device libraries at school level or village level may be one possible solution. Individuals and families can borrow devices on a priority basis. How will schools organize to even out the inequities? Will government schools take the lead in this regard?

Data and experiences of the past year and a half give us a glimpse into a period of transition in education. Will schools go right back to their old ways? Will new methods of engaging with children and parents emerge? Will appropriate teaching–learning goals and activities be adopted for the rest of the school year? Ground-level action will indicate which way our education system will go in the near future.

In India's case, the schooling situation before COVID-19 was close to universal. But in terms of guaranteeing basic learning, available data (ASER and others) clearly show that major instructional changes were needed even before COVID-19 struck. The learning crisis, which predates COVID-19, has worsened with almost two years of school closure. To ensure learning for all, children have to acquire basic skills in time during the early years of primary school. Launched in 2020, India's New Education Policy strongly prioritizes foundational skills as well.

As schools reopen, there is an opportunity for the entire education system to make a serious move toward guaranteeing learning for all. School systems will need to design flexible and fast assessments that enable teachers to quickly assess where children are. Instruction will need to be planned to start from where children are and then work together to take them to where they need to be. Depending on the context, the instructional design will have to integrate outreach to children who are, as yet, not attending school. If the next year is used for foundation building and for "catch up," then it is possible for schools and communities to "build back better."

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