# Chapter 5
# COVID-19 and Education in India: A New Education Crisis in the Making

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**Abstract** This article briefly reviews the devastating impact of the COVID-19 on the education sector in India. Focusing on school education, it also critically examines how effective online learning, the only major way adopted during the pandemic, has been in the delivery of education and whether it is a reliable alternative method of teaching and learning in India. It also briefly outlines a few important strategies required for the recovery of loss incurred and to face emerging challenges in education in India.

**Keywords** COVID-19 · Online learning · Teachers · Inequalities · Fees · Private schools

## 5.1 The Global Pandemic and the Emergency Response

The sudden outbreak of the Corona virus disease, popularly known as COVID-19, a highly infectious disease caused by the SARS-CoV-2 virus, sent shockwaves across the whole world, killing hundreds and thousands of people, and devastating every country and affecting every sector. Few places could escape from its malignant breath. By August 2023, i.e., in about three years and a half about 7.7 billion people have been infected with the virus worldwide and 7 million died (WHO COVID-19 Dashboard). The numbers are equally frightening in India: 4.5 crore have been infected and 5.3 lakh deceased. The numbers of both infections and deaths are still rising, though at much reduced rates of growth.

The emergency response of the governments to the sudden emergence of the unprecedented crisis has been somewhat uniform: the desperate closure of all the

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activities in the entire country. The sudden pandemic forced nations to lockdown their countries in all respects—schools were shut; workplaces were closed; markets were sealed; international as well as domestic travel was banned; even mobility of people outside their homes was prohibited. Only essential activities like medical and sanitation, services like power and water supply, and sale/purchase of basic essentials of food items and pharmaceuticals were allowed, that too with several conditions attached. People were predominantly confined to their homes. This continued for several months, before attempts were made, to slowly and partially, but not very successfully, relax restrictions on selected sectors. Finally after several months all restrictions have been lifted.

But soon some countries were to re-adopt some of the restrictions. Many countries are not yet free from the COVID restrictions. Work from home has become the norm in many countries, except in the case of essential services where the physical presence of the employees is considered absolutely necessary.

Among the many sectors, education is an important one that has been inflicted with serious radical ruptures, resulting in an education emergency, and it is feared that the effects of the lockdown might last too long—longer than those on many other sectors of the economy. The effects on other sectors have also caused further rippling effects on the education sector. But COVID-19's overall impact on education is going to be long-lasting. Of all, schools were the first to be closed, and the last to be reopened, having hampered severely all three main activities in education, that is, admissions, teaching–learning and examinations. Higher education and research have also been seriously disrupted (Tilak & Kumar, 2022). As an immediate response to the unprecedented health crisis created by the pandemic, the education sector first adopted the drastic measure of closing schools, colleges and universities all across the nation. China, which reported the first case in the world in December 2019, closed its schools in February 2020, India in March 2020 and many other countries followed. The closure lasted for several months. With the closure of schools, according to the estimates by the UN by mid-April 2020, 94% of learners—1.58 billion children and youth, and 63 million teachers worldwide were affected by the pandemic. These figures covered all levels of education, from pre-primary to higher education in as many as 200 countries. The closure of schools was the most drastic measure in education, as there has been no activity of any kind relating to teaching and learning at all; in many countries there was virtually a loss of at least one and a half years, possibly two successive academic years of students. The loss in learning at the school level is believed to be unsurmountable in the near future; and in case of higher education, it is feared that public universities, say in India, could be damaged 'beyond repair' in the fallout from the COVID-19 catastrophe (Lau, 2021).

After recouping from the initial shock, many countries began looking for emergency alternative systems to limit damage and have been forced to adopt the second-best, or actually the only, alternative, that was a wide range of distance learning methods, the most prominent one being online learning. While African countries have relied more on television and radio than other methods, online and television have been more extensively used in Asian countries. The use of online platforms was of the same high level in primary, lower secondary and higher secondary and

even higher levels of education. This was seen as at least partially arresting the steep regression in learning that was taking place everywhere. With this, similar to 'work from home', 'study at/from home' and 'teach from home' have become the norm. Classes were held through video conferencing, using Zoom, Google Classroom, Google Meet, Crisco Webex, Microsoft Teams, Jitsi Meet, Google Hangouts and other similar platforms, and assignments were given to students via the internet, through WhatsApp or email, while YouTube and Skype were also used. Interactions between guardians, teachers, students and parents took place, if at all they took place, in WhatsApp groups.

But access to the internet is not universal. According to UNICEF and ITU (2020), as many as 2.2 billion children and young people were unconnected; they were deprived of digital technologies and services that have proved to be so essential during the pandemic. While 47% of households globally were not connected to the internet, the share of students with no internet access at home varied from 15% in Western Europe and North America to as high as 80% in sub-Saharan Africa. Closing the digital divide requires significant quantum of resources in almost every country.

During the third stage, i.e., after complete closure of schools in the first stage, and initiation of experimenting with online learning in the second stage, many countries began partially opening schools—in some parts of the countries and for students in some grades, some only in higher education. In some countries, they have opened only to conduct practical laboratory work; in some cases, only to conduct examinations; in a few others, only to process admissions. Some schools have adopted blended teaching methods—online activities partly supported by small amounts of in-person interactions. Offline activities were still not encouraged as they required strict adherence to new norms, involving masks, social distance, frequent hand washing, sanitizers and so on, which were costly and measures like social distancing were extremely difficult to enforce in schools given children's behaviour. It also required additional infrastructure and additional teachers. Class-size was an important parameter for reopening schools, which posed a serious challenge in developing countries like India where it is normally high. As a partial solution to infrastructure in terms of classrooms and teachers, shifts in school systems were adopted; students of only a few grades—higher grades—were required to go to schools; students were grouped and they were required to come to schools only on alternative days in a week. Schools were opened in some countries sporadically. In fact, plans to reopen schools and get children into physical classrooms have suffered a major setback in many countries with the upsurge of COVID-19 cases again during the second and the third waves. The situation recovered slowly and schools in many countries were opened. Yet the global health crisis is not over. Though the WHO announced in September 2022 that the end of the COVID-19 pandemic is in sight, the situation was not yet normal: there was a sudden upsurge of the pandemic in China; the death rate has been relatively flat and not yet at its lowest level in the United States, and it has not disappeared in many other countries. Some countries have experienced cycles of restrictions, relaxations and restrictions. The WHO suggested continued testing, treatment and vaccinations, integration of effective treatment for COVID-19 into primary healthcare systems, and caution in making relaxations in safety measures. Finally, the WHO declared

on 23 May 2023 with a 'great hope' the end to COVID-19 as a public emergency, at the same time stressing that it does not mean the disease is no longer a global threat. New variants are still emerging requiring continued surveillance in all countries.

## 5.2 Indian Experience

India has also experienced the same trends: the shattering first wave of the pandemic in 2020, the ferocious second wave in the first half of 2021, a fierce third wave in the second half of 2021, and at last a situation of slow recovery. The experience during the second phase has been worse. The helpless patients and their relatives who could not get beds in the hospitals, the relatives of the sick patients who were running from pillar to post for oxygen cylinders, the corpses waiting in line at the crematoria for long hours, and some bodies floating in rivers, fires and smoke from 24 × 7 funeral pyres, and the crowds at the vaccination centers were all experiences of helplessness that is strange to modern India.

In education 320 million students were attending schools and higher education institutions before the onset of the pandemic. All were affected as national lockdown was declared due to the pandemic. During the first wave, at the school level 1.5 million schools were completely closed for almost a full year, impacting 247 million children enrolled in elementary and secondary schools in India, according to UNICEF (2021) estimates. Procedures and plans for admissions and evaluations were also disrupted; conventional methods were replaced by rapid tests, and quick evaluation and assessment methods; year-end examinations were either postponed repeatedly or cancelled for the second consecutive year; they were substituted in some cases by (internal) assessments which were also not necessarily conducted systematically at regular intervals. In a few cases, online testing was done in place of final examinations, particularly in the case of board examinations at the end of grades X and XII. For the lower grades, most students were 'automatically' promoted.

Yet, even during the waning phases of both the first and second waves and also the third wave, schools have remained shut, while many economic activities were revived, travels resumed, and shops, restaurants, bars, cinema halls and malls were opened, albeit at supposedly less than normal capacity. Though there was a demand from several quarters for opening schools, the decision to keep school children at home served a purpose: to conciliate the nervous parents, to reduce the risk of virus transmission, and to allow administration and schools more time to fill the gaps in their infrastructural arrangements and prepare solid grounds for a well-organised online and offline instruction (ORF, 2021), based on sound pedagogical principles, best practices and earlier research evidence. It appeared that the last one, namely the filling of the gaps in infrastructural arrangements and preparation of solid grounds for well-organised online and hybrid instruction, has not happened much so far. It is only much later as increasing medical research showed that severe illness due to COVID-19 was uncommon among children, that schools were gradually opened, but amidst parents' continued fears.

## 5.3 Emergency Response: Online Learning

After the first phase of a complete lockdown, like many other countries, India also has taken up online teaching as an essential activity to minimize the loss in education to some extent by providing opportunities at least for partial learning. The old traditional media of distance education—radio and television have also been used, but on a very limited scale. The online method of education covering all aspects of education essentially admissions, teaching, learning and evaluation has become the single most dominant, if not the only, activity taking place in education in India. The Government of India has taken some important initiatives, including launching of *Digital India* initiatives in developing and spreading digital infrastructure in the country (MeitY, 2019). It has arranged online portals and educational channels through direct-to-home television and radios so that students can continue learning. It also has made available several apps and app-based resources. Web-based and app-based resources containing video lectures, e-worksheets, e-textbooks e-assessments, e-Pathshala/Learning on the Go, and platforms like e-Vidya (consisting of DIKSHA and NISHTHA), have been developed and made available for school students. The National Repository of Open Educational Resources has been made accessible to students. However, no information was available on how many students were actually using these resources during the pandemic. Some schools used several supplementary methods to improve the effectiveness of online learning, such as social media, radio, email, telephones and even the postal system.

Online teaching and learning is revolutionary in many ways as it has the potential to take education to remote corners of the big country. The pandemic has compelled schools to enthusiastically or reluctantly adopt digital technology in all possible manners. While some schools have serious reservations on the access and efficiency of online learning, which was triggered by the pandemic, others are highly optimistic, viewing it as an important opportunity to digitize Indian education on a large-scale, a reform which according to them exposes learners to innovative content and digital formats, is long overdue. But when remote teaching is the *only* mode of imparting education during anytime like the present pandemic, many problems arise given the larger picture: inequalities sharpen, and are visible more strikingly as has been experienced. While online learning is being practiced in both school education and institutions of higher education, and both show a few major strengths and a few critical weaknesses of this format, we concentrate here on school education.

Despite some well-intended efforts to reduce learning losses, the emerging evidence shows that there are three major effects of school closures and/or online teaching/learning as reported in the media: losses in literacy and learning, widening of inequalities, particularly the lopsided digital expansion, and the loss of food, nutrition and overall health and wellbeing of children and their families. These short-term effects have long-term repercussions.

*How far have been the Indian school system and people prepared for extensive nation-wide online teaching and learning?*

It is indeed a difficult to transition from the offline classroom to the online classroom given the numbers involved and considerations for quality and equity, apart from other challenges which are indeed multi-faceted. The pandemic has exposed the many inadequacies of our education system. Teachers, administrators and students were unprepared for online education; they were not ready for this abrupt, major transition from face-to-face learning to virtual learning. Many may have smart phones and computers, but are not necessarily familiar on how to use them for online teaching/learning. Teachers are traditionally proficient in teaching using a blackboard, chalks and books all in a physical classroom setting, but their relative expertise in the use of technology and digital teaching is practically nil; they may not even be well-versed with creating digital content for school children. There might be very few who were good at it. They might do their best, but their abilities/training may be limited in teaching fundamental concepts to young children via online, which they can do relatively easily in face-to-face classrooms.

In many cases, online classes were held by sharing videos on WhatsApp groups. At higher secondary level, given the number of subjects, there could be as many as 30–40 WhatsApp groups for each class; managing such a magnitude might be very difficult for the teachers. The teachers might be aware that the way they were doing is certainly not the way ideal teaching/learning should happen. It appears that because of not being able to face the challenge, and feeling frustrated with the experience of engaging ineffectively with their students, quite a few teachers have left their teaching jobs.

Given large class-sizes, teachers were also constrained in efficiently managing 30–40 students in virtual classrooms, as students might get disconnected without being noticed by the teacher. They faced problems in teaching as well as in the evaluation of students' performances under online methods with the new technology. Added to this were the technical difficulties that the teachers faced which included a lack of technical infrastructure, limited awareness of online teaching platforms and security concerns, and a not very conducive atmosphere in their homes from where online teaching was mostly done. For example, about 67% of teachers in Chhattisgarh and 80% in Uttar Pradesh did not even have the required devices at their disposal (OXFAM, 2020). Teachers might feel compelled to make several compromises and function in improvised conditions. The teachers' problems, including a lack of technical knowledge and the inability to properly integrate courses with technology, all dampened an effective engagement with children in online teaching. The mask environment was indeed a struggle for the teachers as well as the students.

Apart from the teacher's lack of familiarity with an online format there are the infrastructural issues. First, internet accessibility. According to UDISE data 2019–20, a mere 22% of schools across the country on an average have internet access, while government institutions fared much worse at 11%. The second constraint was access to functional computers: the national average was 37% with only 28.5% of government schools having such computers (Table 5.1). Beyond these averages, there

were a range of deficits that different states suffer from, reflecting deep asymmetries: a meagre 6.5% of schools in Odisha, 8.5% in Bihar, 10% in West Bengal and 13.6% in Uttar Pradesh have internet facilities, compared to 87.8% of schools in Kerala and 85.7% of schools in Delhi.

It is clear that schools were not well prepared, and teachers were not sufficiently experienced in the use of digital technology, as hardly one-third of schools have functional computers, and only one-fifth have internet facilities. Government schools are at a higher disadvantage than government-aided private schools and private unaided schools. In short, by the time of the outbreak of COVID-19, Indian schools had only a limited exposure to a hands-on experience with digital technology.

Now let's move to households. Electricity is a basic requirement to use digital devices. In a 2017–18 survey, the Ministry of Rural Development found that only 47% of Indian households received more than 12 hours of electricity a day; and more than 36% of schools in India functioned with no electricity at all (Modi & Postaria, 2020). Availability of electricity in a school does not necessarily mean that all classrooms in the school have an uninterrupted supply of electricity at least for the entire duration of the school hours.

The situation regarding access to digital devices has been further unsatisfactory as shown in Table 5.2. According to NSSO (2020), merely 4.4% of rural households and 23.4% urban households have a computer (desktop or laptop, notebook, palmtop, tablet, iPad, smartphone, or any similar device) in 2017–18; while 14.9% of rural households and 42% of urban households have access to internet; in rural areas among persons of 5 years and above, only 9.9% were able to operate a computer and 13% were able to use the internet. Among the children of the primary and upper primary age-group (5–14), only 9.1% were able to use computers; and 8.8% were able to use the internet, while only 7% have actually used the internet (in the 30 days preceding the survey) either at home, school or outside.

These figures are national averages. The situation was worse if you look at the state-by-state picture: only 1.3% of rural households in Jharkhand and 1.5% in

**Table 5.1** Electricity, computers and Internet in schools in India, 2019–20 (*% of schools having facilities*)

| | Electricity | Computer | Functional computer | Internet |
|---|---|---|---|---|
| All schools | 83.4 | 38.5 | 37.1 | 22.3 |
| Government schools | 81.5 | 30.0 | 28.6 | 11.6 |
| Government aided private schools | 85.9 | 63.0 | 61.8 | 42.2 |
| Private unaided schools | 90.4 | 59.9 | 58.5 | 50.2 |
| Other schools | 73.0 | 29.7 | 26.9 | 21.4 |

*Source* MoE (2021): Unified District Information System for Education Plus (UDISE+) 2019–20. Ministry of Education, Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/udise_201920.pdf

**Table 5.2** How many households have access to basic ICT facilities in India? 2017–18 (%)

| | Computer | Internet |
|---|---|---|
| (a) Have a facility | | |
| Rural | 4.4 | 14.9 |
| Urban | 23.4 | 42.0 |
| Rural + urban | 10.7 | 23.8 |
| (b) Have ability to use a facility (among aged: 5+) | | |
| Rural | 9.9 | 13.0 (10.8) |
| Urban | 32.4 | 37.1 (33.8) |
| Rural + urban | 16.5 | 20.1 (17.6) |
| (c) Have ability to use a facility (among aged: 15–29) | | |
| Rural | 23.7 | 30.4 (25.3) |
| Urban | 56.0 | 63.2 (57.5) |
| Rural + urban | 33.6 | 40.4 (35.0) |

Figures in ( ) are percentages of population who actually used the facility
*Source* NSSO (2020)

Andhra Pradesh have a computer. Even in urban Andhra Pradesh, only 11.6% households have such a facility. However, marginally higher proportions of households have access to the internet: 15–16% of households in Bihar, Chhattisgarh, Andhra Pradesh, Madhya Pradesh and West Bengal have access to the internet. Those who have the ability to operate computers and/or use the internet also constitute small numbers in many states (Table 5.3).

According to a survey of students conducted by the ActionAid (2021), majority of students (58% of the students surveyed) preferred smartphone, laptop (36%), tablet (5%) and desktop (less than 1%). Many might not be actually having any of them. About two-thirds of the respondents of a pre-election survey in the country conducted in 2019, did not own a smart phone, and 78% did not have a mobile phone (CSDS, 2019). Mobile data pack has been the source of internet for 82% of the respondents of the survey by ActionAid (2021). According to a majority of the respondents (62%), WhatsApp was the best way to communicate with teachers and students on class updates.

Having a smart phone in a household does not necessarily mean that the child—and every child—has access to it for her/his online education. Similarly access to the internet does not necessarily mean that a household actually has internet at home or that it is of a high-speed connectivity. As the NSSO report (71st Round) reveals in 2014 while 27% of households (at least one member of the household) has access to the internet, less than half of them (47%) have their own device at home. While 51% of rural households in Kerala have access to the internet, only 23% have access at home; the difference is even starker for states like Andhra Pradesh where 30% of rural households have access to the internet, but only 2% have access at home. In states like West Bengal and Bihar, only 7–8% of rural households have any access to

**Table 5.3** Percentage of households with computer and Internet facility in different states, 2017–18

| | Percentage of households having a facility | | | | | | Percentage of persons (5+) with ability to use Internet | | |
|---|---|---|---|---|---|---|---|---|---|
| | Rural | | Urban | | All | | | | |
| | Computer | Internet facility | Computer | Internet facility | Computer | Internet facility | Rural | Urban | All |
| Andhra Pradesh | 1.5 | 10.4 | 11.6 | 29.5 | 4.8 | 16.6 | 12.0 | 28.5 | 17.1 |
| Assam | 3.7 | 12.1 | 30.8 | 46.9 | 7.5 | 17.0 | 13.8 | 39.1 | 16.6 |
| Bihar | 2.7 | 12.5 | 20.0 | 38.6 | 4.6 | 15.4 | 10.2 | 28.3 | 12.1 |
| Chhattisgarh | 3.2 | 10.6 | 22.0 | 34.6 | 6.9 | 15.2 | 9.0 | 30.3 | 12.9 |
| Delhi | – | – | 34.7 | 55.8 | 34.9 | 55.7 | – | 51.1 | 50.5 |
| Gujarat | 4.4 | 21.1 | 20.1 | 49.1 | 11.2 | 33.2 | 15.6 | 40.1 | 25.1 |
| Haryana | 5.9 | 37.1 | 29.5 | 55.4 | 14.7 | 43.9 | 24.2 | 44.5 | 30.9 |
| Himachal Pradesh | 10.5 | 48.6 | 28.3 | 70.6 | 12.9 | 51.5 | 30.8 | 57.3 | 33.5 |
| Jammu & Kashmir | 3.5 | 28.7 | 16.0 | 57.7 | 6.6 | 35.8 | 17.3 | 37.8 | 21.8 |
| Jharkhand | 1.3 | 11.9 | 15.6 | 40.2 | 4.4 | 18.0 | 8.1 | 30.2 | 12.4 |
| Karnataka | 2.0 | 8.3 | 22.9 | 33.5 | 10.7 | 18.8 | 12.1 | 37.6 | 21.4 |
| Kerala | 20.1 | 46.9 | 27.5 | 56.4 | 23.5 | 51.3 | 41.0 | 47.5 | 43.9 |
| Madhya Pradesh | 2.3 | 9.7 | 17.2 | 35.4 | 6.1 | 16.3 | 8.0 | 30.6 | 13.5 |
| Maharashtra | 3.3 | 18.5 | 27.4 | 52.0 | 14.3 | 33.7 | 16.9 | 44.1 | 28.8 |
| Odisha | 1.8 | 5.8 | 17.2 | 31.2 | 4.3 | 10.0 | 7.4 | 29.3 | 10.9 |
| Punjab | 9.4 | 39.4 | 26.7 | 57.1 | 16.2 | 46.4 | 28.5 | 46.8 | 35.0 |
| Rajasthan | 6.4 | 18.5 | 26.6 | 49.9 | 11.7 | 26.7 | 11.6 | 35.1 | 17.1 |
| Tamil Nadu | 11.6 | 14.4 | 24.7 | 24.8 | 18.1 | 19.6 | 20.2 | 34.9 | 27.1 |
| Telangana | 1.6 | 9.9 | 17.6 | 41.9 | 9.1 | 24.9 | 12.1 | 40.0 | 25.0 |
| Uttarakhand | 7.0 | 35.2 | 32.5 | 64.3 | 14.3 | 43.5 | 29.4 | 53.0 | 35.6 |
| Uttar Pradesh | 4.0 | 11.6 | 22.3 | 41.0 | 8.2 | 18.4 | 8.8 | 28.9 | 13.0 |
| West Bengal | 3.3 | 7.9 | 23.0 | 36.0 | 9.4 | 16.5 | 8.6 | 30.3 | 14.9 |
| *All-India* | *4.4* | *14.9* | *23.4* | *42.0* | *10.7* | *23.8* | *13.0* | *37.1* | *20.1* |

*Source* NSSO (2020, pp. 246, 250)

the internet; and the proportion that has access at home is a minuscule number. Even in urban areas the picture was not better: only 18% of urban households in Bihar and 21% in West Bengal could access the web at home.

Rural households in general and the households of bottom expenditure quintiles in rural areas in particular are severely deprived of digital infrastructure: just about 1.6% of the bottom quintile in rural areas have a computer. The ownership

of technical devices is even more worrisome, especially in the case of children in rural areas. When even an educationally advanced state like Kerala launched the First Bell Distance Learning Programme—a centralized online programme, as an interim arrangement for regular students of grades I–XII in June 2020 through a government-owned channel, accessible through YouTube and others, 2.6 million students were found not having access to essential digital learning tools. The information technology revolution has not penetrated into rural areas. In a survey of 15 states conducted in August 2021 (The School Team, 2021), it has been found that hardly 8% of primary and upper primary school children in rural areas and 23% in urban areas have access to online education. In fact, the irregular supply of electricity, non-availability of technical infrastructure, and irregular and frequently interrupted internet connectivity are issues not just restricted to rural areas; even in the metros in India these were recurring problems. Broadband penetration is simply not adequate in most parts of the country. The net result was: hardly 8.1% of children in government schools, and 17.7% in rural private schools have attended online classes; 18.3% in rural government schools and 20.7% in private schools could access video recordings (ASER Centre, 2021). The situation seemed to continue to be the same as the pandemic progressed, as in August 2021 a meagre 8% children in rural areas and 24% urban children have been found to be studying online regularly; the corresponding figure was 4% among children of the Scheduled castes/tribes regularly or otherwise. 37% of rural children and 19% of urban children were reported to be not studying at all (The School Team, 2021).

All this evidence on how accessible the online learning/teaching has been, how proficient the students and teachers have been in using the online devices, and in short how much has been the level of readiness of the education community to adopt online methods, comes as an eye-opener, if not as a shocker, to the nation which has been recognised as "one among the top two countries globally on many key dimensions of digital adoption" (McKinsey Global Institute, 2019, p. 2) (though the observation was made mainly in the context of business activities).

## 5.4 Is Online Learning a Reliable Alternative?

Apart from the practical constraints described above, the use of online programmes, particularly exclusively online ones, will have serious adverse effects, some of which have been well highlighted by earlier researchers. First, the nature and definition of 'education', 'school', and college/university gets completely changed. School for the young children meant a 10 × 12 inch digital screen, if not a 2 × 4 inch mobile phone screen. Similarly, the relationship between a student–teacher-school was completely redefined, as all were confined to a small electronic device, ignoring the conventional wisdom that "the centre of any educational process is the human relationship between a student and a teacher" (International Commission on Futures of Education, 2020, p. 20). The safe and warm relationship has been seriously undermined in the new models. Second, the socialization of children, which has been considered for

centuries as an important function of education, gets lost as online programmes do not allow individual in-person contact. The social skills that physical school campuses automatically promote are essential for the holistic growth and development of children. Children learn a lot from engaging with peers. As it is widely understood, "a student's overall psycho-social development takes place in the school". The overall development consists of social and challenging environments, engagement, communication, group work, value education, and play and relaxation time with peers. They learn and grow through the cycle of fun, play, art, music, sports and knowledge (ActionAid, 2021). Even at higher levels of education, 'learning to live together,' an important pillar highlighted by the Delors Commission (1996), is possible only in the physical brick and mortar campuses of universities and colleges and not in virtual campuses. Thus, one of the most important limitations of remote learning methods is the lack of personal interaction between teacher and students and among students, which is essential for learning. So the very learning is truncated in remote learning systems, alienating one from another. Children may at best be good in handling and interacting through laptops/iPads, smart phones and so on, but not necessarily in many other essential life-skills and actually nil in socialization. In the whole process, children may get demotivated, feel insecure, and finally altogether lose interest in education, and later in going to schools when they are reopen. This will be too costly for society.

Third, as Kasturirangan observed, 'playfulness, creativity and many other aspects can never be transferred through online learning' (*Times of India*, 2020). Joyful learning becomes an alien concept. Underscoring the importance of human interface for good communication and for inspiring young minds, C. N. R. Rao observed, online education cannot inspire young minds, and can actually be 'disastrous for children' (*Firstpost*, 2020). As per increasing evidence, there has been a negative impact of online learning on learning by children, as meaningful and structured learning could not take place. As Ashok Mody (2023, p. 404) observed, digitally delivered content can indeed worsen learning outcomes. It has been found to be alienating students from learning. In short, on-line learning is neither sustainable nor desirable, particularly at the school level and at higher level it can serve as a good supplementary method.

Fourth, the system, as it is practiced, transfers substantial responsibilities of children's education from teachers and schools to parents and homes; and the latter are not well equipped to perform the task. Majority of the students might require help, guidance and supervision by their parents or others at home during the online classes. But in a survey by Save the Children (2020), 37% children in India reported that there was no one to help them at home. Only a few educated and economically well-off families were able to provide necessary support to their children in their on-line learning activities. They also feel constrained as the adults might be working from home for their employers. A vast majority of children suffer from lack of both—a lack of proper learning environment at home, and parental support, resulting in the widening of inequalities in education. For example, OXFAM (2020) found that 82% parents in India faced challenges in supporting their children to access digital education during the COVID crisis: adequate signals and internet speed were the biggest

issues. Parents with more than one school-going child might find the problem even more grave. The provision of necessary gadgets and access to digital facilities to children at home with network having access to unlimited data, which a major proportion of households in India cannot afford, is a basic prerequisite for such online learning. As a result, overall attendance rates were low, and much learning has not taken place in these classes.

In addition, there are added issues at home that hinder online learning. The physical indoor space at home was limited in many households for effective online learning. Household work, interruptions by younger siblings, other external distractions, including necessary household chores during the classes were common. 80% of the children were reported to be facing some obstacle or other at home (Save the Children, 2020). For both students and their parents it was a harrowing time. A home environment, however good it may be, will not be equivalent to a school environment for learning even if the latter is of mediocre quality. The school as a physical space is not only superior in all respects, but is simply indispensable.

Online education is a poor substitute to a formal school system. From the point of view of students, certainly it is not as effective as learning in physical classroom (Mukhopadhyay & Chomal, 2020); and teachers know fully well that the remote learning cannot mirror the school-based learning. It could at best be considered during the COVID period like contexts, as an emergency measure like the permission for emergency use of vaccines, relevant during times of emergency only, as they were not subject to standard rigorous pre-testing modalities. During normal times, online teaching may serve well as a supplementary method that too mainly in higher education, and to some extent in higher secondary education, but certainly not in primary or elementary or lower secondary education; it cannot and should not replace traditional methods at any level of education. The long-tested conventional method of schooling is irreplaceable. This holds true not only for a developing economy such as India, but also for advanced countries for several reasons. Unequal access to digital technology is a problem everywhere; and hence large-scale innovations in teaching through technology may not be feasible. It has to be accepted that online education cannot be a desirable effective option for all children even during such periods of crisis.

Another important fallout of the closure of the schools is the loss of the school-lunch or midday meal which was severely disrupted. Though a few states arranged the supply of uncooked food items to students/parents on the school campuses, this has not adequately provided good nutrition to children which is necessary for them to study and learn; the supply of uncooked items was also not possible during a complete lockdown. Overall, according to an OXFAM survey in five states, only 54% of children received dry rations during the pandemic; 8% received cooked food and 4%, money.

On the whole, of all the negative impacts of the massive disconnect with the school, it is the very loss of learning that is generally feared to be the heaviest and is feared to have accumulated exponentially. During the pandemic, just 29% of rural and 53% of urban school children were studying regularly off or online; as many as 75% of the parents in India have reported that their children's learning—reading

and writing—abilities have declined during the online education (The School Team, 2021). According to a study by the Azim Premji University (2021), the learning loss in language was as high as 82% in primary education in India, and 92% in mathematics, the loss being higher in higher grades. A more recent survey of schools in rural north Bihar conducted by *Jan Jagaran Shakti Sansthan* (JJSS, 2023) reported that "a majority of teachers feel that most children in classes 1–5 had forgotten how to read and write by the time schools reopened after the COVID crisis got over." Globally the present value of total learning loss in monetary terms has been estimated to be about US $10 trillion (World Bank, 2020). According to OECD (Schleicher, 2020, p. 4) the loss amounts to as high as 69% in a typical country's Gross Domestic Product (GDP); and it is also estimated that this will reduce the GDP by 1.5% for the remainder of the century. The loss is not confined to just a few developing countries where the problem can be much more serious than in advanced countries. For example, a study by the Brookings Institution (Kufheld et al., 2020) found that test scores in US schools have declined between 2019 (before COVID-19) and 2020 (after the closure of schools and/or introduction of online). According to Donnelly et al. (2021), even in Europe's highest-income countries the pandemic has given rise to big learning losses and a sharp rise in inequality. A study by Haeck and Lefebvre (2020) has found that the learning deficit created by the pandemic, can increase the gap in test scores by more than 30% globally between different socioeconomic groups. Since the losses in learning are not uniformly felt by all, learning loss, which is feared to be the longest-lasting legacy of the pandemic, itself will create further inequalities in education. That the children will drift further apart in their education, leading to widening of inequalities is widely feared, including in Austria, Germany and Switzerland (Huber, 2021). The problem is likely to be more acute in countries like India with at least one generation of students getting badly affected. It has now been globally realised that mental, physical and cognitive development of children has been severely shaken. The overall situation in India is summed up in Table 5.4, which throws light on different practices adopted for emergency learning and the extent of loss in learning, besides on the problems of access. In addition to underscoring the overall low levels of learning, it also unveils the high degree of rural–urban inequalities in the same.

The whole situation involving almost exclusive reliance on online learning has helped the private sector develop new forms of coaching. Several ed-tech start-ups, some called 'Academies' and 'Unacademies' have come up in a short time such as Byju, Vedantu, Shaw Academy, Khan Academy, Udemy, My Private Tutor, EduWizard, Vibrant Academy, Gradeup Great Learning, Toppr, COURSERA, Board Infinity and Whitehat Jr. Many offer online coaching and programmes in education and skill development to students from grade I to the higher education levels. They began redefining and reducing concepts of teaching and learning.

A few of them have, however, been functioning for the last few years. They promise to offer a wide variety of services online: video lectures, teaching classes, skilling, and coaching for competitive examinations conducted by the Union Public Service Commission for entry into civil services, banks, railways, etc., the Joint

**Table 5.4** Elementary education in India during lockdown, 2021

| | Rural | Urban |
|---|---|---|
| *Percentage of school children who* | | |
| Are studying online regularly | 8 | 24 |
| Among scheduled castes/tribes | 15 | 4 |
| Are not studying at all nowadays | 37 | 19 |
| Are unable to read more than a few words | 48 | 42 |
| Have a smart phone | 12 | 11 |
| Have connectivity problems | 65 | 57 |
| Find online classes difficult to follow | 43 | 46 |
| *Percentage of parents who feel that their* | | |
| Child has adequate online access | 8 | 23 |
| Children's reading abilities have declined | 75 | 76 |
| Among scheduled castes/tribes | 66 | 83 |
| Grades I–V | 79 | 78 |
| Grades VI–VIII | 70 | 72 |
| *Percentage of children studying* | | |
| Through online classes/videos | 8 | 25 |
| Through watching television | 0.1 | 3 |
| Through private tuitions | 14 | 24 |
| At home with family help | 12 | 15 |
| At home without family help | 15 | 19 |
| With friends in others' houses | 3 | 2 |

*Source* The School Team (2021)

Entrance Examination for admission in engineering studies, and National Eligibility-cum-Entrance Test for admission into medical and related fields providing model questions, solutions, concepts, practice tests and so on. In addition, some of them offer upskilling in digital competencies like areas like data sciences, analytics, artificial intelligence, machine learning, cloud computing, cyber security and digital business. Some also offer career guidance to students and newly-joined professionals. Others have developed tie-ups with schools to offer online classes. Many institutions have tied up with these different so-called 'edtech' platforms to offer extra-education or coaching and skill-oriented programmes. Several ed-techs find it a highly lucrative business, with some offering free access to students and teachers mostly only initially for a limited trial period. For example, the annual revenue of Great Learning, a start-up, has risen by 150% to Rs 325 crores in about a year. In all, according to some estimates, there are as many as 92 such start-ups but, 'these old and new players have made India's ed-tech landscape so crowded that quality has taken a beating' (Bhattacharya, 2021). While many of these start-ups have come up during the pandemic crisis, it is likely they will continue with some mergers and consolidation and thrive, even afterwards, exploiting gullible parents and students. After all, there

is a huge market value: the online tutoring is currently valued at US $3.5 million, growing at a compound rate of growth of 30% (Roy, 2020). But it needs to be underlined that in the long run "public education cannot be dependent on digital platforms provided by private companies" (International Commission on Futures of Education, 2020, p. 17).

The online teaching has been adopted by both government and private schools, but the latter ones have pursued it quite aggressively, requiring young students to spend 5–6 hours or more in front of digital screens which is generally regarded as unhealthy for young children, causing serious strain on optical nerves, familiarly known as 'computer vision syndrome' and delay in development of intellectual faculties among the children. The Ministry of Education, Government of India, for example, has suggested that the maximum screen time for a student should be three hours total, split into four-five sessions, interspersed with good breaks. But the greedy and over-ambitious private schools didn't bother about such guidelines, as they wish to continue charging high levels of fees which they felt that parents would be willing to pay only if their children are engaged for longer hours, even if it is on online. In fact, there was no rationale for charging high fees for virtual classes as schools saved a lot on maintenance of school infrastructure and several other overheads. Instead, schools feared a loss in fee revenues that used to be generated by making surpluses on several heads like bus charges, canteen services, laboratory charges, excursions and even school uniforms; and still they have raised their fees. Some schools have even made uniforms sold by schools compulsory for online classes—different uniforms for different sessions such as regular classes, physical training, yoga, dance, and music. As reported by OXFAM (2020), in Odisha, Bihar, Jharkhand, Chhattisgarh and Uttar Pradesh where the survey was conducted, 39% of the parents were charged hiked fees and 15% were charged for uniforms despite the physical closure of schools and state guidelines restricting fee hikes. Many private schools also conducted online classes for kindergarten/pre-primary children of 3–5 years. Besides, the private schools also feared increased dropouts or withdrawal of children because of COVID and online teaching, impacting their finances and teacher employment. The fears were not unfounded. For example, 2.82 lakh children in Gujarat, some 2.4 lakh in Delhi, more than 2 lakh in Haryana, 1.85 lakh in Punjab, 1.29 lakh in Madhya Pradesh and 1.25 lakh children in Telangana enrolled in private schools have switched to government schools in 2021–22 (*India Today* Web desk, 8 October 2021). According to the survey of the School Team (2021), in the country as a whole, as high as 26% of children migrated from private to government schools. Few new admissions seemed to have taken place in many private schools as COVID-hit families find it hard to afford them now. Some schools, particularly 'low budget' private schools have been closed.

On the whole, despite several harmful features of online education, it has grown rapidly in India and is still growing mainly due to economic payoffs the business of online education yields. According to IBEF (2021), India has become the second largest market for e-learning after the US, with an estimated market value of US$ 1.96 billion in 2021, which is forecasted to reach about US$ 11.6 billion by 2026.

## 5.5 Strategies for Uncertain Future

Today, ravaged by the COVID-19, the whole school system is facing one of its most serious challenges. Governments are able to control COVID-19 and some countries like India could even experience "remarkable resilience and economic resurgence (Viswanath, 2023), but the education crisis it caused may not be over so soon. In fact, some (Li & Lalani, 2020) fear that the pandemic has changed education forever. The long-term effects are still unknown and difficult to foresee, as they will take time to manifest. However, some have predicted quite a few problems: the recovery of losses incurred in literacy and learning will be extremely difficult: teaching can be accelerated but learning by young children cannot be so hastened as they might not be able to catch up. Therefore, the loss of even one year of schooling may mean a 'just a completely wasted cohort' (Duflo, 2021) as the learning trajectory got drastically derailed. One cannot shove huge amounts of curriculum down the throats of young children. But some states have extended hours of teaching and reduced number of holidays, after schools were reopened. If too much is thrust on the children, they may even breakdown. With heavy syllabi, coupled with rat-race, mad competition and peer/parental pressures, students particularly at higher secondary level are known to be experiencing a high degree of emotional distress. Certainly additional teaching hours or extra classes would be too taxing for the children. It should be realised that children need time to assimilate what they read and are taught. It is not only learning losses in school curriculum, but also the losses in socialisation and related skills among the children have to be addressed.

Second, the experience with prolonged school closures and online learning, with isolation and confinement to homes, and self-isolation in case of those who were inflicted with the virus, seems to have a negative effect on the mind, body and behaviour and overall wellbeing of students. The subsequent effects on the academic growth, social life and mental health of children, including anxiety and depression levels of older children, may indeed be very serious. The students might imbibe their online behavior, characterised by impatience, aggression, restlessness, inattention, clinging, distraction, hesitation to ask questions, and introversion, etc., and new learning styles, to such a level that they might find it difficult to readopt to 'normal' behaviour on the physical campus. Having been caged within the four walls of a home for 24 h every day, for months with no outdoor sports and other physical activities, certainly the behavior of students, their wellbeing and mental health would pose serious problems.

According to a joint statement by the UNICEF and UNESCO (2021), "schools should be the last to close and first to reopen." But it has happened the other way. Schools in India were closed first, in all for more than 600 days. The long deprivation of school experience for more than one and half year has caused irreparable loss among the young children at primary level, and also for the children in grades X to XII, who face severe pressures of public examinations.

As Human Rights Watch (2021) observed, school closures were not a temporary interference with the education of a large section of marginal groups, but the abrupt

end of it. There are a large number of dropouts, and their willingness to return to schools has been doubtful. According to OXFAM (2020), teachers feared that 30% students in India might not return to schools at all when they reopen. In a survey in Tamil Nadu and Puducherry, such children in the age group of 15–18 years—who were in schools when the schools closed due to the pandemic and would never go back to schools—comprised two-third of the total children surveyed (Educo, 2021). Save the Children (2020) has predicted that as an under-estimate about 10 million children worldwide would drop out of schools. According to UNESCO this figure would be at least 24 million children and youth. A large section of students are forced to go to labour market as the schools were closed. They might not come back. Child labor seemed to have been increased due to the closure of schools on one hand and loss of parental employment and earnings on the other. For example, in Tamil Nadu the number of child laborers has more than doubled during the lockdown, according to a survey of the Campaign against Child Labour (Narayani, 2021). Globally child labour had been gradually declining during the past two decades. But the COVID-19 pandemic threatened and reversed the trend. According to ILO and UNICEF (2020), the number of people in extreme poverty might rise by 40–60 million (in 2020). As one percent point rise in poverty leads to at least a 0.7% point increase in child poverty, one can understand the magnitude of increase in child labour and corresponding dropouts from schools. Further, in case of girls, it has been pointed out that increasing number of early marriages and early pregnancies have an adverse effect on the probability of their rejoining education. Thus, there would be huge dropouts and a significant fall in new admissions as well. Motivating the young children to get back to schools is indeed a big challenge that the schools would face.

All this stresses the need to holistically plan for imaginary interventions in education. One can at least identify three inter-related major areas for policy action that can help recover losses to some extent, and lay strong foundations for the future.

First, it may have to be acknowledged that the transition that has taken place from physical classroom settings to remote education system is not sustainable. Extensive training needs to be provided to teachers and administrators in the use of digital technology and other alternative methods to use remote teaching as supplementary methods in normal times and to depend upon them heavily during times of crisis in the future. This is in addition to strengthening training in traditional pedagogy and other areas. Digital literacy turns out to be a basic need. All this requires a revamping of the system of teacher education in the country, as envisaged in the *National Education Policy 2020* (Government of India, 2020). The goal should be to ensure that every school has highly competent trained and qualified teachers in required numbers. This might help to some extent in the recovery of the loss incurred in learning, but it will be quite challenging. Simultaneously, measures should be evolved to de-adict children from mobiles and digital tools, to make children come back to physical school campuses and enjoy classroom teaching and learning. The learning experience of students has to be enhanced by mitigating the serious psycho-socio distress caused by the outbreak of the COVID-19 and follow-up actions—the lockdown and online home learning—that consciously integrate psychological, emotional and health issues with an appropriate education response. Such measures have to be based

on child psychology, behaviour and health so that the children overcome the trauma they have experienced, and the problems of readjustment to school environment they face when they get back to schools are minimised. Imaginative and innovative 'second chance' and 'remedial catch-up' learning strategies and differentiated instructional interventions have to be developed, along with tailored and sustained support systems, including for emotional support and guidance to the students and teachers. Further, there may be a need for modifying the curricula in all levels of education.

Second, there is a huge need for heavy investment in education not only in the training of teachers and administrators, but also in strengthening school infrastructure, basic and modern, including the necessities that have arisen in this crisis like digital devices, software, safety and cleaning mechanisms. The pandemic has made us realise how big the digital divide has been, and how important it is to bridge it. There is a need to ensure almost universal availability of reliable, and stable digital connectivity and free and open source technologies and software. Systems also need to be developed in such a way that households and communities across the whole nation have increased level of access to digital devices, and parents acquire basic skills and become familiar with their use, so that they can provide basic support to children at home when needed. Provision of digital infrastructure in schools and communities requires a huge amount of resources: the current market size for digital classrooms in India is estimated at US$ 1billion, out of which the market for private schools is estimated at US$ 266 million and that of government schools is approximately US$ 740 million (Roy, 2020). As the National Education Policy (Government of India, 2020, p. 58) has recognised, "the benefits of online/digital education cannot be leveraged unless the digital divide is eliminated through concerted efforts." Hence the needed investments have to be made. This might help in absorbing, to some extent, future shocks of the kind we have experienced. Further, safety measures, hygienic environment, health facilities etc., require additional infrastructure, and teachers, in addition to extra support in the form of technical and non-technical manpower including health workers. Moreover, families may need to be compensated for the loss of their economic lives, and for the loss of midday meals and for meeting nutritional needs of children, if one is serious about bringing back the system to normalcy.

Huge investments are necessary to meet increasing needs to improve quality, and more importantly, to reduce the stark gaps between rural and urban regions in access to quality education by all sections of society. While developing digital infrastructure and online education, care has to be taken that online education does not substitute the long-tested conventional education of the brick and mortar classrooms. It has to be planned only to supplement and support conventional classroom teaching and learning. So the likely option seems to be developing strong hybrid models, blending both modes of education, though teaching simultaneously on online and offline may be very challenging for the teachers. In the blended model the online models should not be given a dominating place, and the traditional mode should not end up in sidelines. Rather it needs to be the other way: the conventional model should be given a primary place and the other supportive. It has to be ensured that digital technology

does not cause a new crisis in education. All this requires substantial upscaling of the public budgets for education.

Finally, above all, in all this, it needs to be recognized that it is the public school system that plays a crucial role. As the International Commission on the Futures of Education (2020, p. 9) stated, "The current crisis is reminding us how crucial public education is in societies, communities, and in individual lives." After all, it is the best equalizer in society. Heavily concentrated efforts focusing on rejuvenating the public education system are needed without relying on the private sector. As conventional wisdom goes, 'It is manifest that education should be one and the same for all, and that should be public, not private' (Aristotle, quoted in Everson, 2000, p. 15).

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