POLICY BRIEF

An Equity-Focused Digital Strategy for Education During and After COVID-19

Education technology (edtech) offers a way for students to continue learning while schools are closed. However, most edtech solutions are costly for majority of parents and school systems. Photo credit: ADB.

Education technology solutions can help mitigate learning loss and foster resilience in future crises.

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Introduction

The coronavirus disease (COVID-19) outbreak has prompted countries worldwide to impose mobility restrictions, including temporary cessation of face-to-face schooling. The latest data from UNESCO shows that around 1 billion students across the globe are affected by the profound disruption to the educational system. Extended school closures could have enormous long-term consequences for today's children, and their learning losses could translate over time into $10 trillion of lost earnings for the global economy.

In India, which has the largest school system in the world, 250 million K-12 students and 10 million teachers have been impacted by school closures. In higher education, 35 million students have been affected. Governments and educational institutions have been pursuing innovative and practical options to cope with the unprecedented situation. While multi-modal approaches have been adopted to prevent

learning loss, education technology (edtech) has emerged as a prominent tool for remote learning. Its growth is expected to magnify after the pandemic, with the edtech market in India projected to reach $1.96 billion.

Although there is no substitute for in-person learning experience, edtech holds considerable promise for strengthening educational systems and fostering resilience in future crises. However, it is not a solution by itself nor a one-size-fits-all proposition. Solutions should be aligned with the efforts of central and local governments and different phases of readiness, considering the available infrastructure, platforms, and preparedness of teachers, students, and parents.

This policy brief is based on a presentation by Central Square Foundation, a nonprofit organization in India, at the Policy Actions for COVID-19 Economic Recovery (PACER) Dialogues organized by the Asian Development Bank.

Context

India has witnessed notable gains in primary and secondary education, which increased enrollment, retention of students, and the number of schools. The gross enrollment ratio (GER) at elementary level was 91.64% while secondary level was 79.6% in 2018–2019. The dropout rates were reduced to 2.72% at the elementary and 9.74% at the secondary level in the same period.

For higher education, GER stands well below the government's target but has been steadily rising since 2014–2015. Universities and colleges—mostly private—have grown by 37% percent and 9% respectively over the last 5 years.

The quality of education, however, remains a challenge and reports show that students are not achieving class-appropriate learning levels. According to the Annual Status of Education Report (ASER) 2018, over 70% of children in Class 3 cannot do basic reading nor arithmetic. Only 28.1% of children in Class 3 in rural India could do simple subtraction while 27.2% of them could read a Class 2-level text. In tertiary education, challenges include a shortage of quality faculty, poor pass percentages, and low employability rates among candidates post course completion.

Such problems have been compounded by inequity in technological access. While India has the second-largest internet user base globally with over 718 million subscribers, almost half of its population is not digitally connected.

With movement restrictions to keep the general public safe, online education has served as a viable alternative to face-to-face learning. But students who are unable to afford internet connection or are located in remote areas with poor digital infrastructure face difficulties in transitioning to this mode of learning.

Adding to the complexities is the quality of available edtech solutions. The edtech landscape in India comprises over 4,500 products, but a large number of these lack pedagogically sound content. Most of these solutions are also beyond the financial capacity of the majority of parents and school systems, and

largely cater to students from the high-income group.

Policy Solutions

Collaboration for development of short, medium, and long-term solutions

Educational authorities could benefit from the support and knowledge of stakeholders to determine the appropriate distance learning modalities according to the specific context of their regions. In India, different states demonstrate varying degrees of online education because of considerations on infrastructure, the suitability of technology-based learning materials for their students, and digital literacy of users.

Moreover, state governments and educational institutions should forge partnerships with the business sector for the provision of free or low-cost online courses to learners and teachers, who are likely experiencing increased financial hardship during this time.

Continued multi-stakeholder collaboration in the recovery period will be equally crucial to develop sound strategies for reopening of schools and campuses, introduce measures for reversing learning losses, and create a long-term vision for blended learning.

Leveraging existing content and tools for a quick response

With the help of central and state governments, schools and higher educational institutions pivoted to online learning quickly using minimal resources by focusing on existing content and curriculum mapping rather than developing new content. Fortunately, the digital architecture had already been developed by the central government before COVID-19 and this has enabled the state governments and their educational systems to rapidly deploy solutions at no cost to learners.

Curation and contextualization of products

With a plethora of edtech solutions in India, a curated database of free resources was instrumental in helping learners find content that matches their needs. It was important that these learning materials were: (1) aligned with the curriculum, (2) translated in local languages for the low-income segment, and (3) integrated with interactive elements, such as gamification to increase engagement. Given the inability of remote learning to replicate the interactions, supervision, and socialization in schools and campuses, solutions should be designed to sustain the motivation of learners

Use of multiple channels

Beyond digital platforms, low-technology and non-technology solutions should be deployed for wider reach. Cognizant of issues with hardware and connectivity among disadvantaged groups, educational authorities in India have used a combination of technologies for multi-modal delivery, such as text messaging, radios, and television-based programs. For extremely remote areas or low-resource

environments, worksheets are being sent to students' homes for their continued learning.

For digital interventions, more emphasis has been given on asynchronous (on-demand) sessions rather than on synchronous (real-time) classes because of technological limitations for the underprivileged. Lectures are recorded so that they can be viewed later by students who could not get real-time access.

Additional student services

An assessment of the needs of students should be conducted to identify any necessary support in this time of crisis and uncertainty. In higher education, there should be measures to assist international or nonlocal students who immediately have to travel back to their home bases. Also, students on financial aid may need allowance on devices and internet subscriptions, which are fundamental to their online participation.

Tools and support for parent engagement

As the COVID-19 pandemic has augmented the role of parents as teachers, they have been provided with tools necessary for their engagement and involvement in their child's learning activities at home. In addition, support from teachers has been vital for parents who now have to concurrently deal with home and work responsibilities.

Professional development of teachers

Because teachers suddenly need to adapt their pedagogical practices under new circumstances, free platforms have been offered to build their capacities and augment their digital proficiency.

Remote learning is unlikely to fully offset the negative consequences of extended school and campus closures. This highlights the need for continued support and investments in the professional development of teachers whose role will become even more essential in the learning recovery process.

Policy Implementation

Response Phase

Across India

Through multi-stakeholder collaboration, authorities across the country have brought forward measures to facilitate continuity of education. Recognizing the technological constraints for a sizable portion of the population, policymakers have implemented multi-channel responses for accessibility.

Online learning has been made available through Google Meet, Zoom, and other digital platforms. In Delhi, state leadership conducts weekly review sessions with students and teachers, which are live-streamed on YouTube. Similarly, Uttar Pradesh leverages web-based tools to deliver content to teachers and students.

The wide use of WhatsApp has made it an easy and scalable platform for regular communication and learning at home. Networks for parents and teacher professional communities have been created. In Madhya Pradesh, there are approximately 50,000 WhatsApp groups for parents. In Himachal, WhatsApp-based assessment bots measure the learning of children.

With equity as a major consideration for learning initiatives, state governments have supplemented web-based tools with radio and TV-based programs, text messaging, interactive voice response (IVR), and non-technology interventions.

Albeit not many, there are also notable efforts for students with disabilities. For example, Uttar Pradesh has created video content for the hearing impaired and audio content for visually impaired learners. Special educators call parents of these children and support parents in using these resources.

At the tertiary level, the University Grants Commission has permitted credit transfer for massive online open courses (MOOC), allowing students to select courses relevant for them and gain credits. Universities can now also offer their courses for credit to other institutions.

Students

A primary initiative of the Ministry of Human Resource Development, DIKSHA is a repository of engaging e-content with the aim of helping K-12 students streamline their decision-making and easily find solutions that align with their learning needs. "Energized Textbooks," which are enhanced textbooks with embedded QR codes that allow students to view engaging content in the form of audio and video, are integrated into the DIKSHA platform. Over 80,000 e-books in multiple languages for Classes 1 to 12 can be accessed on DIKSHA and more than 500 million are being printed by states in the coming academic year.

Another interactive K-12 learning resource is TicTacLearn which has content for math and science available in Hindi, English, and regional languages. Available on YouTube and DIKSHA, TicTacLearn provides quality content, engagement, and access—all critical aspects of online learning.

For higher education, the University Grants Commission has created a list of various MOOCs for dissemination on university websites and social media, outlining the benefits of these courses for students.

Aside from academics, resources have been mobilized to strengthen student services and establish protocols for transparent and regular communications. For example, Ashoka University—a liberal arts university in Haryana—has adopted measures to minimize inconvenience brought by COVID-19 to its students by setting up a help desk, developing a management information system for tracking and

resolving all student issues, offering travel assistance, and supporting the needs of students on financial aid.

Parents

Because the pandemic has placed additional teaching responsibilities on parents, they could greatly benefit from tools to help them manage home-based learning. In India, a first-of-its-kind free mobile app called TopParent enables and empowers parents with the right knowledge, language, and strategies around child development to hone the skills and learning ability of their kids.

Additionally, there is an app called Rocket Learning that delivers activity-based content and worksheets to parents on WhatsApp using an automated platform and analyzes students' responses and provides feedback. To keep parents and families engaged in the learning process, the app has group competitions and social media challenges with incentives like "Smart Family" certifications.

Teachers

Free technologies like TeacherApp have been leveraged to facilitate progressive conceptual understanding among K-12 teachers through high-quality interactive, digital content. Five state governments—Chhattisgarh, Uttrakhand, Himachal, Uttar Pradesh, and Jharkhand— signed a memorandum of understanding with TeacherApp, which has successfully onboarded over 250,000 teachers to date.

Similarly, free online tools through SWAYAM—a platform initiated by the central government—have been provided to tertiary-level instructors for their professional development.

In terms of instructional design, teachers have switched to an inductive method because live online sessions are not conducive to a traditional teacher-centric approach. Stimulating learners in a virtual setting could be challenging and inductive pedagogy could be a powerful tool to encourage sharing among students and create engagement. At Ashoka University, for instance, professors provide students with materials for them to study in advance and use real-time lectures for gauging their understanding and discussing ideas. Another technique is the use of breakout rooms to divide up the class with the aim of improving student focus and participation.

Recovery and Resilience Phases

After the crisis, a three-pronged strategy for primary and secondary education could promote wider adoption of edtech at home and in schools, reinforced by shaping the ecosystem.

B2C – Consumers

First, the provision of access and infrastructure coupled with increased parental awareness will be needed for the stronger adoption of edtech at home. Although there is a significant number of mobile users in India, efforts targeted at isolated students with zero or low technological access will be critical going forward. Unlocking the demand side of parents will hinge on a supply of online products that are

pedagogically sound, contextual, and engaging at a reasonable cost.

B2G – Government schools

Second, close collaboration with governments is integral for the sustainable large-scale adoption of edtech in schools. In light of COVID-19, there is increased state willingness on edtech, presenting opportunities to support them in developing an edtech vision, and designing a robust program for schools. Strengthening the procurement capacity and knowledge of governments is paramount to implement edtech at scale.

Ecosystem building

Lastly, shaping the edtech ecosystem comes at an opportune time as there are many lessons that could be drawn from the COVID-19 experience. The crisis has boosted the scope for edtech and initiatives to make products widely available to the public that could enable better decision-making on which solutions fit their purpose. Reimagining education will also necessitate continued dialogue on policies and reforms for harnessing edtech.

In higher education, steps for mainstreaming a hybrid approach and lifelong learning should be taken to build a portfolio of expertise and skills in preparation for a knowledge-based economy. With the threat of automation and the permanent impact of COVID-19 on certain types of work, educational systems should be integrated with diverse and digital courses to develop a future-ready workforce and increase the marketability of individuals. Creating high-quality asynchronous content and using online coaches for increased student engagement are the key ingredients to scale blended learning at the tertiary level. In India, partnering with research institutions to develop online courses for colleges and universities, which may lack the capacity to do so, may prove useful in realizing this forward-looking strategy.

Recommendations

Equity should be the top consideration.

Poorest households will be hit hard by the multiple crises brought by COVID-19. The growing inequity and digital divide underscore the need for accessibility considerations when designing solutions. Policymakers should also include those with disabilities in their COVID-19 responses through investments in technologies that cater to hearing and visually impaired students.

Interventions should be based on different levels of readiness.

Policymakers need to focus on what can be done within the current constraints and with available resources. In the interim period, initiatives could be set up immediately by making use of existing infrastructure, basic technology, and diverse channels. For low-resource areas with limited connectivity, options such as SMS, social media-based teaching, and printed materials are best suited for their emergency response.

As countries and localities regain their footing in the subsequent phases, interventions can include enhanced tools and technologies to manage continuity and enable better learning experiences.

National and subnational governments have their own unique context that should inform the most sensible interventions in the response and recovery stages. The key tenet is to capitalize on every opportunity in each stage for continuous improvements.

Support should encompass the needs of students, teachers, and parents.

Actors in the learning community will need support, not only for academic learning but also for their social and emotional well-being.

Students should be provided with tools to make remote education engaging for more effective learning. To help them make informed decisions, a repository can easily facilitate discovery of solutions that best suit their needs.

In higher education, online coaches could help drive student engagement, and systems should be adapted to make digital learning appealing for students through ease of credit transfers and seamless registration with other institutions offering online courses.

For teachers and parents, a key part of their role is to keep learners motivated. They should be provided with guidance on home teaching and means to ask questions or exchange ideas. Setting up parent groups and peer community groups can be a good way to offer pedagogical and socio-emotional support.

Facilitate lifelong learning to prepare for the future of work.

Brought to the fore by the unfolding COVID-19 crisis, knowledge economy preparedness demands reforms in educational systems and amplified investments in human capital to future-proof careers. Policymakers have a key role in encouraging lifelong learning by recognizing all forms of education, such as micro-credentials, determining equivalence of formal qualifications, and allowing inter-institutional collaboration to make courses more widely available to different segments of learners in higher education.

Generate evidence on effective remote learning solutions.

The spike in the use of edtech will bring ample data that can be used to track reach, views, and engagement on online platforms. If data can lead to a deeper understanding of what is working so far, the most effective products should be integrated into classroom teaching in the recovery phase. For personalized learning, courses, and micro-credentials targeted at adult learners, evidence on how they translate to work opportunities would enrich the post-pandemic interventions for skills development. To safeguard privacy, anonymizing personal data of learners should be strongly considered.

Another mechanism to obtain data is through regular calls between teachers, students, and parents. This could help assess the learning behaviors and outcomes, which could in turn inform the educational

policies when schools and campuses reopen.

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