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## IMPACT OF COVID-19—INDUCED SCHOOL CLOSURES ON LEARNING OUTCOMES IN MAHARASHTRA

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### ABSTRACT

*The COVID-19 pandemic forced unprecedented school closures across India, with Maharashtra among the most severely affected states. Between March 2020 and late 2021, Maharashtra's schools remained closed for extended periods, disrupting the learning of millions of children. This paper synthesizes evidence on the pandemic's impact on learning outcomes in Maharashtra, examining three critical dimensions: learning loss among school children, the digital divide that widened access disparities, and the inadequacy of remote learning alternatives. Evidence from the ASER 2020 survey reveals that children not enrolled in school increased from 2.5 percent to 4.6 percent, with sharper declines in foundational literacy and numeracy skills [1]. Studies on online education conducted by Azim Premji University in December 2020 demonstrate that 60 percent of children could not access online learning opportunities, while 90 percent of teachers reported inability to conduct meaningful assessments [2]. The Leadership for Equity study in six Maharashtra districts involving 391 teachers and 382 parents reveals deep concerns about learning regression, particularly in reading and writing skills, with most parents concluding that remote learning was largely ineffective [3]. This paper analyzes these interconnected challenges, examines strategies for learning recovery, and articulates implications for educational practice and policy in Maharashtra during pandemic recovery.*

**KEYWORDS:** COVID-19, school closures, learning loss, digital divide, remote learning, Maharashtra, India

## INTRODUCTION

The COVID-19 pandemic represents an unprecedented crisis for global education, yet its consequences have been particularly severe in India, where it has disrupted the education of over 300 million students. Among India's states, Maharashtra has faced singular challenges due to its densely populated urban centers, large rural populations with varying digital infrastructure, and economic vulnerabilities of marginalized communities. The disruption to education in Maharashtra began abruptly in March 2020. Between January 2021 and September 2021, Maharashtra schools functioned normally for only 11 percent of school days, with the remaining 89 percent characterized by restrictions or closures. In some districts, schools remained entirely closed for over 18 months. This

prolonged closure fundamentally altered the educational experience of Maharashtra's children in ways that extend far beyond missed classroom hours.

The learning crisis that emerged was not simply lost instructional time. It manifested as a multidimensional crisis affecting learning outcomes, educational equity, and student well-being. Children lost previously acquired foundational skills in reading and arithmetic—a phenomenon termed "learning regression"—while simultaneously missing instruction in new material. The shift to remote learning exposed and deepened long-standing digital divides within Maharashtra's population. Access to devices, internet connectivity, and digital literacy varied dramatically across urban and rural areas, wealthy and poor households, and different caste and religious communities.

Understanding the pandemic's impact on learning in Maharashtra is critical for designing recovery strategies, building resilience into education systems for future crises, and preparing teacher-training students and educational leaders with evidence-based understanding. This paper synthesizes evidence from the ASER 2020 survey, the Leadership for Equity field study in six Maharashtra districts, and Azim Premji University's investigations of online learning during the pandemic.

### EVIDENCE ON PANDEMIC IMPACT IN MAHARASHTRA

#### Learning Loss and Declining Enrollment

The ASER 2020 survey revealed concerning shifts in enrollment patterns. Across rural India, the percentage of children aged 6-14 not enrolled in any school rose from 2.5



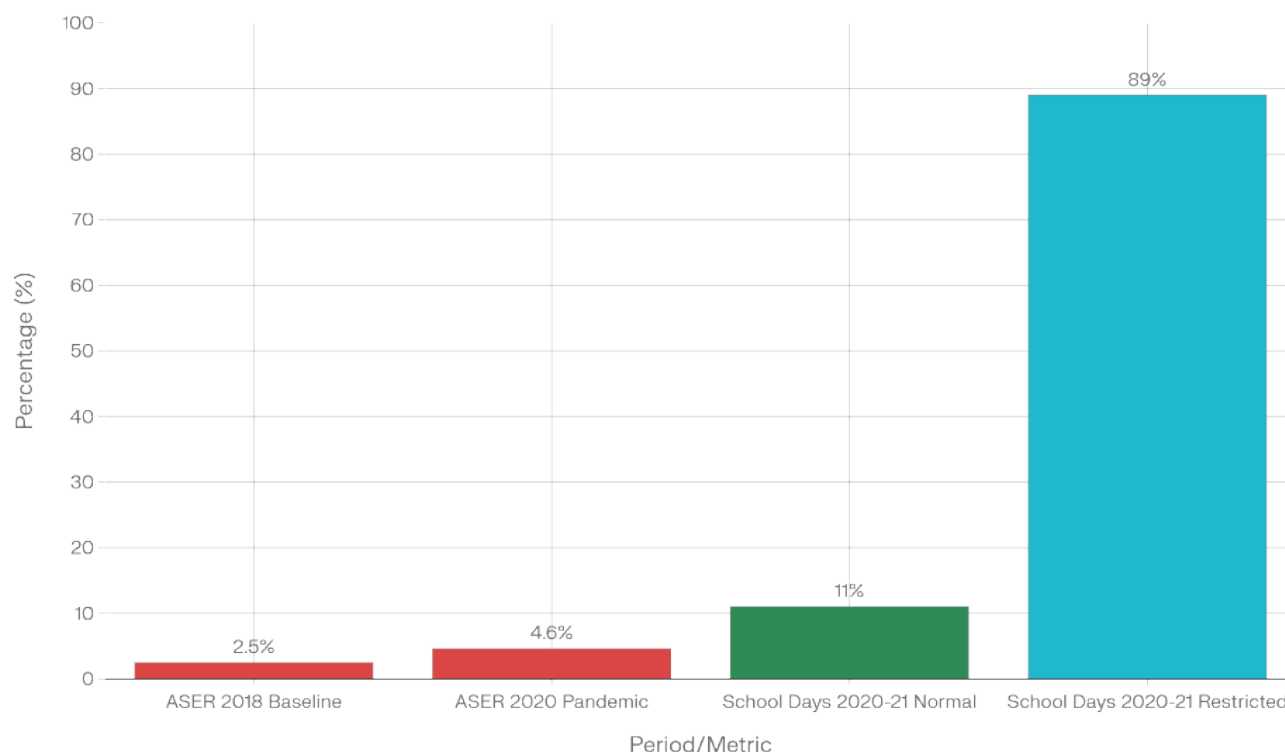
percent in 2018 to 4.6 percent in 2020 [1], adding approximately 2-3 million out-of-school children. Younger children aged 6-10 showed sharper enrollment declines than older children, reflecting critical concerns about first-time enrollment delays that often lead to permanent dropout [1].

Field studies in Maharashtra document learning losses. The Leadership for Equity study, conducted in December 2020 across six Maharashtra districts (Akola, Ahmednagar, Nashik, Pune, Satara, and Solapur), surveyed 391 teachers and 382 parents. One parent stated: "There has been no learning overall this year. Children have lost touch with reading and writing due to school closures" [3]. Teachers expressed similar concerns about covering learning losses.

## School Closures & Learning Loss in Maharashtra (2018-2021)

Source: ASER Data | Pandemic caused dramatic disruption to education

■ Out-of-School % ■ Normal Days % ■ Restricted Days %



Azim Premji University's investigation into learning loss, conducted in January 2021 across 16,067 children in 1,137 public schools in 44 districts, documented substantial regression in foundational abilities in reading with understanding and basic arithmetic operations [4].

### The Digital Divide and Inequitable Access

When schools closed, educators turned to remote learning. However, this transition exposed India's digital infrastructure challenges and vast disparities in technology access. The Azim Premji University study on "Myths of Online Education" found that out of 30,511 children who regularly attended school, only 11,474 could access online classes—a participation rate of 42 percent, meaning approximately 60 percent of children had no access to online learning [2].

The Leadership for Equity study found that close to 50 percent of parents faced technical difficulties in online teaching, including device access, internet connectivity, and technical knowledge barriers [3]. In many households, a single smartphone served the entire family, and frequently this device was

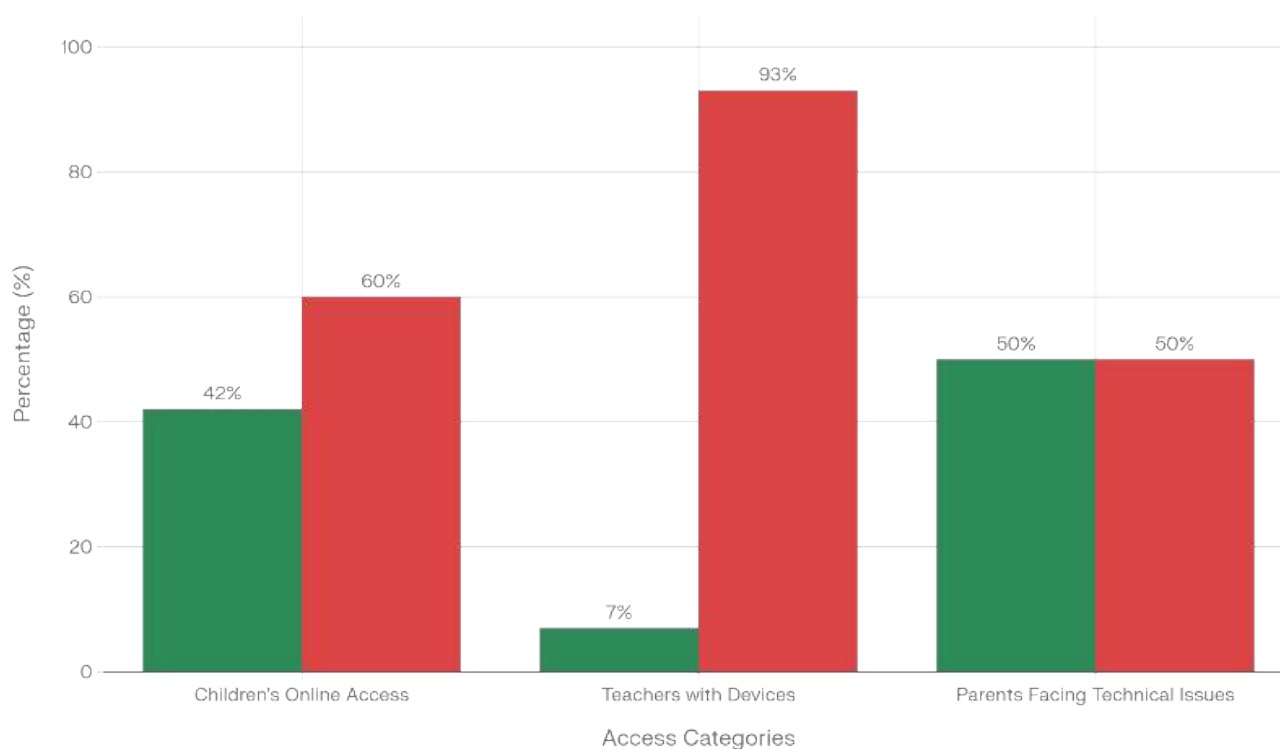


required for parental employment. Where multiple children shared devices, boys received priority access, intensifying gender inequalities [5].

### Severe Digital Divide in Maharashtra Schools (COVID-19)

93% of teachers lack devices, limiting effective remote education

■ Can Access/Have ■ Cannot Access/Don't Have



India's digital divide simultaneously reflects socioeconomic, geographic (rural-urban), caste, religious minority, and gender dimensions. Children from low-income households, Dalit and Muslim communities, and girls in vulnerable households faced compounded barriers to educational access [5].

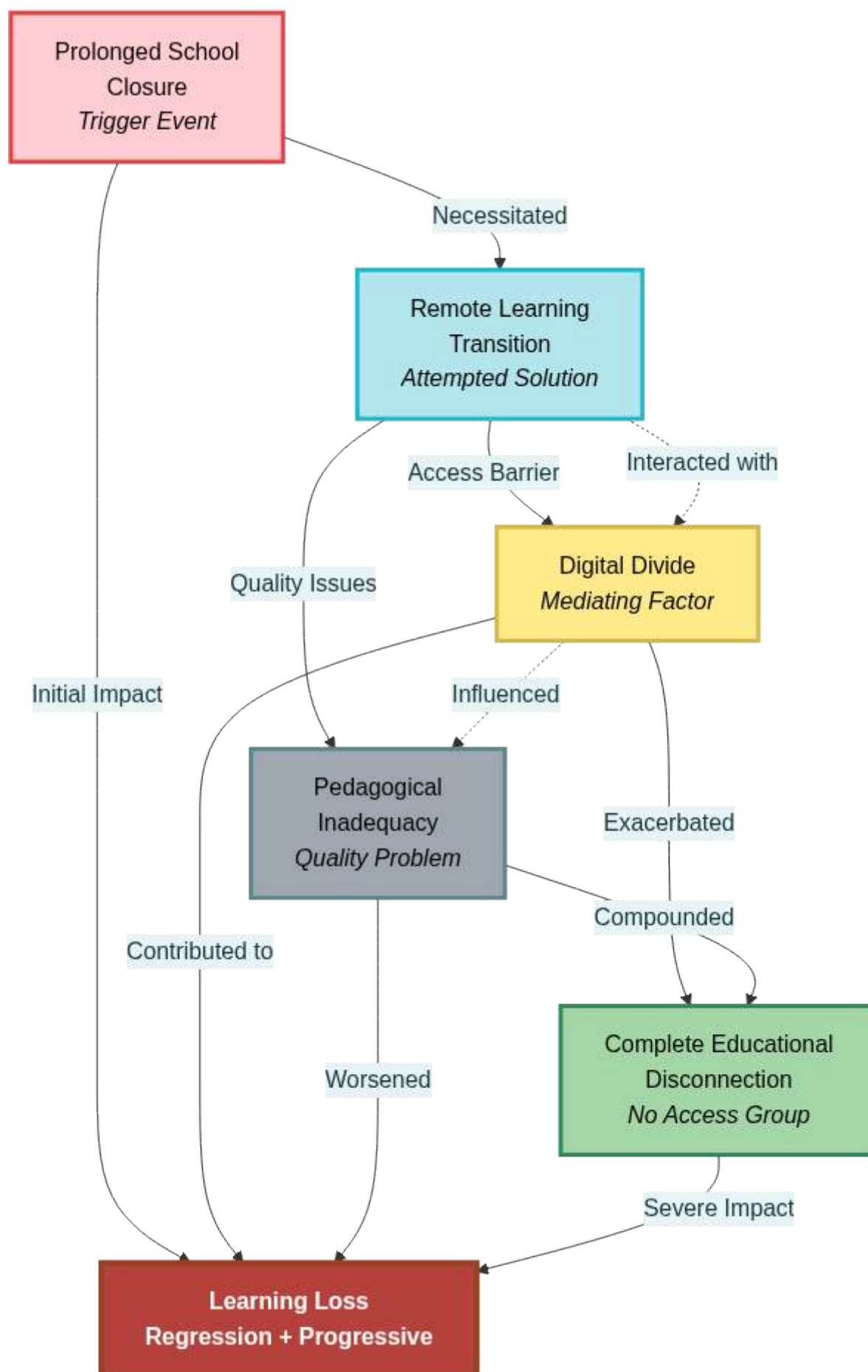
### Ineffectiveness of Remote Learning

Beyond access problems, remote learning revealed pedagogical inadequacy. The transition to online teaching was neither planned nor supported by meaningful teacher training. The Azim Premji University study found that more than 90 percent of teachers reported that no meaningful assessment of learning was possible through online classes [2]. Almost 50 percent of teachers reported that children were unable to complete assignments [2]. More than 80 percent of teachers reported the impossibility of maintaining emotional connection with children through online modes [2].

Across the Leadership for Equity study in Maharashtra, 70 percent of parents expressed that online classes were not effective for their children's learning [3]. Teaching through online channels was irregular and lasted for no more than two hours daily on average. Government learning programs launched during lockdown reached less than 60 percent of parents with minimal actual impact [3].

### FRAMEWORK FOR UNDERSTANDING PANDEMIC LEARNING LOSS IN MAHARASHTRA

The evidence reveals that learning loss emerged from multiple, interconnected factors: prolonged school closure disrupting instructional continuity, regressive learning loss as children forgot previously mastered skills, the digital divide preventing access to remote alternatives, and the pedagogical inadequacy of online instruction.



Prolonged school closure created the need for alternatives, leading to a rapid, unplanned transition to

remote learning. This transition was mediated by differential access based on household socioeconomic status, geographic location, and social position. Students who accessed remote learning experienced compromised pedagogy due to teacher unpreparedness. Students without access experienced complete educational disconnection. This combination led to both learning loss and learning regression, with severity varying dramatically across student populations.

Recovery requires simultaneous intervention on multiple fronts: targeted remediation for learning loss with attention to foundational literacy and numeracy; building digital infrastructure and digital pedagogy capacity to create hybrid learning models; leveraging community-based tutoring; and addressing the social and emotional well-being of students, teachers, and families.

#### IMPLICATIONS FOR EDUCATIONAL PRACTICE AND TEACHER PREPARATION IN MAHARASHTRA

The pandemic's impact carries profound implications for post-pandemic educational practice.

First, educational systems require deliberate planning for learning continuity during crises. Teachers in Maharashtra must be architects of hybrid learning systems, requiring explicit training in pedagogies that



work across modalities. Pre-service teacher education must integrate modules on crisis pedagogy, hybrid teaching, and technology-enhanced instruction.

Second, teachers must develop expertise in supporting learning regardless of family educational background, including strategies for helping students learn independently through well-designed materials.

Third, the pandemic demonstrated the critical importance of foundational skills. Teachers must understand child cognitive development and provide targeted instruction for foundational literacy and numeracy.

Fourth, schools are crucial social institutions supporting child well-being beyond academic instruction. Teachers must recognize signs of trauma and respond with compassion and appropriate referral to mental health services.

Finally, educational leaders must ask who is excluded by any educational innovation and ensure

solutions work for all children, particularly the most marginalized, through concrete understanding of constraints faced by families living in poverty, students with disabilities, girls in households with gender disparities, and students from caste and religious minorities.

## CONCLUSION

The COVID-19 pandemic created a severe learning crisis in Maharashtra, manifesting as learning loss, learning regression, dropout, and widened educational inequalities. School closures lasting up to 18 months disrupted learning of millions of children. Remote learning was inaccessible to approximately 60 percent of students and pedagogically inadequate for most others. The result is documented learning regression in foundational skills, with impact falling most heavily on children from low-income households, rural areas, and socially marginalized communities.

Yet evidence reveals reasons for cautious hope. State governments, including Maharashtra, have shifted toward community-based and in-person learning models. Research on learning recovery demonstrates that targeted remediation programs delivered at scale can recover substantial portions of learning losses. Teachers, despite inadequate support, demonstrated remarkable innovation and commitment, developing low-tech strategies for learning continuation.

The path forward for Maharashtra requires simultaneous action: immediate priorities must include learning recovery programs targeting foundational literacy and numeracy; medium-term priorities must include building digital infrastructure and teacher capacity for equitable remote learning; long-term priorities must include transforming teacher education so educators are prepared for crisis pedagogy, hybrid learning, community engagement, and teaching in profound social inequality.

For teacher-training institutions in Maharashtra, the pandemic provides both a cautionary tale and a clarion call. Teachers must be prepared not merely to teach in traditional classrooms but to be responsive to crises, understand their students' realities, be architects of equitable learning systems, and be committed advocates for children most likely to be left behind. The education provided to teacher-training students will profoundly shape whether Maharashtra can recover from this learning crisis and build more resilient, equitable, and student-centered education systems for the future.

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