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**DAILY EDITORIAL
ANALYSIS**

TOPIC

**TECHNOLOGY AND THE CHALLENGE
OF EQUITABLE EDUCATION**

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TECHNOLOGY AND THE CHALLENGE OF EQUITABLE EDUCATION

Context

- The promise of technology in education has always been to democratize learning, making quality education accessible to all.
- In a country as diverse as India, where socio-economic disparities shape access to resources, technology often widens the digital divide rather than bridging it.

Promise of Technology in Education

- Technology has revolutionized education in numerous ways, offering interactive and engaging learning experiences. Adaptive learning technologies personalize education, catering to individual learning styles and paces, thereby improving student outcomes.
- These include delivery of quality education; expanding access to education; training and retraining of teachers; preparing students for digital economy; promoting inclusivity and diversity; and automated administrative tasks etc.
- In 2018, nearly 90% of rural households had simple mobile phones and 36% had smartphones.
 - ♦ In 2022, the proportion of households with smartphones had risen to over 74% and, **according to ASER 2024**, it has grown further to 84% this year.
 - ♦ The proportion of children aged between 14 and 16 years who own a smartphone has risen from 19% to about 31% within a year.
- A study revealed that 87% of parents support the integration of technology in schools, recognizing its potential to enhance learning, thereby improving students' understanding and retention of information.
- **Economic Survey 2024-25** highlights the increase in computer and internet access in schools, which has significantly improved learning outcomes.

Concerns: Technology in Exacerbating Educational Inequalities

- **Digital Divide** (gap between those who have access to digital resources and those who do not):
 - ♦ **Lack of Internet Access:** According to the **Telecom Regulatory Authority of India (TRAI)**, as of 2023, India had an **internet penetration rate of approximately 50%**.
 - Rural areas, in particular, face severe internet connectivity issues.
 - ♦ **Affordability of Devices:** Smartphones, tablets, and laptops are essential tools for digital learning.
 - The **Annual Status of Education Report (ASER) 2022** highlighted that many students in government schools lacked access to personal digital devices.
 - ♦ **Quality of Digital Infrastructure:** Schools in underdeveloped regions often lack adequate digital infrastructure, preventing the smooth implementation of e-learning programs.
- **Gender Divide:** In many conservative families, girls have restricted access to mobile phones and the internet.
 - ♦ A **UNICEF report** on digital education in South Asia found that boys were more likely to have access to digital learning tools than girls.
- **Language Barriers:** A significant portion of online educational content is available in English, which disadvantages students from non-English-speaking backgrounds.
 - ♦ Efforts to develop high-quality regional language content are still inadequate.
- **Urban-Rural Disparity:** Private schools in urban areas have seamlessly integrated technology into their teaching methods, while government schools in rural areas struggle with limited resources.

Policy Interventions and Government Initiatives

- **National Education Policy (NEP) 2020:** It emphasizes the use of technology to enhance learning while addressing accessibility concerns.

- ◆ It calls for the development of digital infrastructure, particularly in rural areas.
- **Digital India Campaign:** It aims to transform India into a **digitally empowered society and knowledge economy**.
 - ◆ It focuses on providing digital infrastructure, digital literacy, and delivering services digitally to ensure that technology reaches the remotest corners of the country.
- **PM eVIDYA:** It was aimed to provide multi-modal digital education through television, radio, and online platforms, ensuring that students without internet access could continue learning.
- **DIKSHA (Digital Infrastructure for Knowledge Sharing):** It offers free, high-quality educational content in multiple languages to promote inclusivity.
- **BharatNet Project:** Aimed at expanding broadband connectivity to rural areas, BharatNet is crucial in reducing the urban-rural digital divide in education.
- **National Digital Education Architecture (NDEAR):** It aims to create a unified **digital infrastructure** to energize and catalyze the education ecosystem.
- **National Digital Library of India (NDLI):** Managed by the Ministry of Education, NDLI is a **virtual repository of learning resources**, offering free access to a vast collection of educational materials, including textbooks, articles, videos, and audiobooks, catering to learners **at all levels**.

Way Forward: Ensuring Equitable Digital Education

- **Improving Digital Infrastructure:** Expanding affordable internet access, particularly in rural areas, is essential. Public-private partnerships can accelerate the development of reliable digital infrastructure.
- **Affordable Digital Devices:** Government and corporate initiatives should work towards providing subsidized digital devices to students from marginalized communities.
- **Local Language Content:** More investment is needed in creating high-quality educational content in regional languages to ensure accessibility for all students.
- **Teacher Training in Digital Pedagogy:** Educators must be equipped with the necessary digital skills to effectively integrate technology into classrooms. Training programs should focus on using tech-driven teaching methodologies to benefit diverse learners.
- **Promoting Digital Equity for Girls:** Addressing gender-based barriers to technology access through awareness campaigns and policy measures is crucial for ensuring equitable education.
- **AI in Education:** Artificial Intelligence is being utilized to create interactive and engaging learning experiences, especially in rural areas, making education more personalized and effective.

Conclusion

- Technology can either be a great equalizer or a force that deepens educational inequalities. While digital tools have the potential to revolutionize learning, their benefits remain out of reach for millions of students due to infrastructural, financial, and social barriers.
- Bridging the digital divide requires concerted efforts from the government, private sector, and civil society.
- Only through inclusive policies, improved access, and targeted interventions can we ensure that technology becomes a catalyst for equitable education rather than a contributor to inequality.

Source: TH

Mains Practice Question

To what extent do you believe that advancements in technology can bridge the gap in educational inequities, and what are the potential challenges that need to be addressed to ensure that all students benefit equally from these technological innovations?

