Teachers and technology

(Mains GS 2: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources)

Context:

- India's school education landscape is facing daunting challenges as even before the Covid-19 pandemic, one in two children lacked basic reading proficiency at the age of 10.
- The pandemic threatens to exacerbate this crisis, especially because of the physical closure of 15.5 lakh schools that has affected more than 248 million students for over a year.

Time to reimagine education:

- Coalescing with the learning crisis is the Fourth Industrial Revolution — the imperative now is to reimagine education and align it with the unprecedented technological transformation.
- As traditional brick-and-mortar service delivery models are being disrupted across sectors, the pandemic offers a critical, yet stark, reminder of the impending need to weave technology into education.

Technology in New Education Policy:

- India's new National Education Policy (NEP) 2020 is responsive to the clarion call to integrate technology at every level of instruction.
- It envisions the establishment of an autonomous body, the National Education Technology Forum (NETF), to spearhead efforts towards providing a strategic thrust to the deployment and use of technology.

India to take leap forward:

- India is well-poised to take this leap forward with increasing access to tech-based infrastructure, electricity, and affordable internet connectivity.

- Further flagship programmes such as Digital India and the Ministry of Education's initiatives, including the Digital Infrastructure for School Education (DIKSHA), open-source learning platform and UDISE+, prepared India for the future.

A comprehensive ed-tech policy architecture:

- A comprehensive ed-tech policy architecture is needed which must focus on key elements.
- The key elements should be providing access to learning, especially to disadvantaged groups; enabling processes of teaching, learning, and evaluation; facilitating teacher training and continuous professional development; improving governance systems including planning, management, and monitoring processes.

Lessons from experience:

- Cross-country experience and research provide us with crucial insights on what works and what doesn't.
- First, technology is a tool, and not a panacea and second, technology must be in service of the learning model.
- There is a danger in providing digital infrastructure without a plan on how it's to be deployed or what teaching-learning approaches it would support.
- Third, technology cannot substitute schools or replace teachers.
- It's not "teachers versus technology"; the solution is in "teachers and technology".
- In fact, tech solutions are impactful only when embraced and effectively leveraged by teachers.

Technology holds promise:

- Conditional to good learning design, technology holds promise and has incredible potential in enabling greater personalisation of education and enhancing educational productivity.
- It also improves rates of learning, reducing costs of instructional material and service delivery at scale, as well as better utilisation of teacher/instructor time.

Indian ed-tech holds promise:

- The Indian ed-tech ecosystem has a lot of potential for innovation.
- With over 4,500 start-ups and a current valuation of around $700 million, the market is geared for exponential growth having estimates project an astounding market size of $30 billion in the next 10 years.

The grassroots innovation:

- There are several examples of grassroot innovations like Hamara Vidhyalaya in Namsai district, Arunachal Pradesh, which is fostering tech-based performance assessments.
- Samarth in Gujarat is facilitating the online professional development of lakhs of teachers in collaboration with IIM-Ahmedabad.
- Jharkhand's DigiSATH is spearheading behaviour change by establishing stronger parent-teacher-student linkages.
- Madhya Pradesh's DigiLEP is delivering content for learning enhancement through a well-structured mechanism with over 50,000 WhatsApp groups covering all clusters and secondary schools.
- Kerala's Aksharavriksham initiative is focusing on digital "edutainment" to support learning and skill development via games and activities.

Needs cohesive strategy:

- To craft a cohesive strategy, action needs to be taken on multiple fronts.
- In the immediate term, there must be a mechanism to thoroughly map the ed-tech landscape, especially their scale, reach, and impact.

- The focus should be on access, equity, infrastructure, governance, and quality-related outcomes and challenges for teachers and students.
- In the short to medium-term, the policy formulation and planning process must strive to enable convergence across schemes (education, skills, digital governance, and finance), foster integration of solutions through public-private partnerships, factor in voices of all stakeholders, and bolster cooperative federalism across all levels of government.
- Here, lessons may be drawn from the Government of India's Aspirational Districts Programme on tech-enabled monitoring and implementation that emphasises citizen engagement, partnerships and effective service delivery

Address digital divide:

- Special attention must be paid to address the digital divide at two levels i.e. access and skills to effectively use technology and leverage its benefits.
- Thematic areas of the policy should feature infrastructure and connectivity; high-quality, relevant, proven software and content; and rigorous global standards for outcome-based evaluation, real-time assessments, and systems monitoring.

Long term policy translation:

- In the longer term, as policy translates to practice at local levels and technology-based solutions become ubiquitous, a repository of the best-in-class technology solutions, good practices and lessons from successful implementation must be curated.

- The NITI Aayog's India Knowledge Hub and the Ministry of Education's DIKSHA and ShaGun platforms can facilitate and amplify such learning.

Conclusion:

- The journey from a holistic strategy to its successful application will require careful planning, sustained implementation, and calculated course corrections.
- With NEP 2020 having set the ball rolling, a transformative ed-tech policy architecture is the need of the hour to effectively maximise student learning.