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# Digital Initiatives in Education in the Government of India: An Academic Overview

**Mr. Sharad Charan Verma**
Librarian Navodaya Vidyalaya Samiti Lucknow, JNV Sambhal, U.P.

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## Abstract

Digital initiatives in education have emerged as a central pillar of educational reform in India, reflecting the Government of India's long-standing commitment to leveraging technology for improving access, quality, equity, and governance. This paper presents an academic overview of the evolution, policy foundations, implementation mechanisms, and outcomes of digital education initiatives in India, with particular emphasis on developments following the National Education Policy (NEP) 2020. Drawing on policy documents, government reports, and existing scholarly literature, the study examines major national platforms such as DIKSHA, SWAYAM, NROER, the National Digital Library, and teacher capacity-building programmes, situating them within India's broader Digital India vision. The analysis adopts three complementary lenses—policy design, implementation and governance, and equity considerations—to assess both achievements and persistent challenges. While digital initiatives have significantly expanded access to educational resources, strengthened teacher professional development, and enabled large-scale assessment and data analytics, their impact on learning outcomes remains uneven and constrained by infrastructural deficits, digital divides, content quality concerns, and governance complexities. Issues of data privacy, sustainability, and contextual relevance further complicate effective implementation. The paper concludes that although India has developed one of the world's most comprehensive digital education ecosystems, realizing its transformative potential requires sustained investment, robust evaluation frameworks, localized and high-quality content, stronger capacity building, and inclusive policies that address structural inequalities across regions and social groups.

**Key Words:** Digital Education; National Education Policy 2020; Digital India; Educational Technology; Access, Equity and Inclusion; Open Educational Resources; Governance and Implementation; Teacher Capacity Building; Digital Divide; India.

## 1. Introduction

The government of India has initiated large-scale efforts to integrate digital technologies into its education systems for nearly two decades. The overarching aim of its digital education push is to improve education access, quality, and equity across diverse contexts through innovative digital initiatives. Since 2020, India has

articulated a theory of change to guide its digital education strategy and has introduced several new initiatives directly aligned with its digital education objectives. At the same time, the policy environment has become more supportive of digital education, notably through the National Education Policy, which places digital initiatives at the center of the government's education strategy. A growing body of literature investigates the details and effects of India's digital education initiatives, but an integrated academic overview of the overall digital education effort has yet to be assembled.

Digital initiatives comprise government-sponsored technological or digital activities, support services, or systems supporting educational objectives. Education outcomes include learning outcomes, educational attainment, enrollment rates, and equity indicators. Governance denotes how authority is exercised, the distribution of responsibilities, and related structural arrangements. The study focuses on central government policies and those of Indian states recognized as educationally progressive and digitally advanced, namely Delhi, Kerala, and Maharashtra (Bajpai et al., 2019). The study encompasses initiatives explicitly aimed at advancing education and digital education, even if these are not described as such or are closely linked to other ministries. The policy analysis utilizes documentation from government reports, educational vision statements, budgets, evaluations, and related research.

India's digital education push is analyzed through three theoretical lenses. The first concerns policy choices guiding the overall digital education strategy and the choice of individual initiatives. The second focuses on the implementation of the initiatives currently underway, encompassing challenges and successes observed to date. The third examines equity considerations to ensure that disadvantaged populations benefitting most from digital initiatives do not inadvertently get left behind. The analysis contributes to the literature by providing the first systematic academic overview of India's integrated digital education strategy and the specific initiatives aligned with that strategy.

## 2. Historical Context and Policy Foundations

Recognizing the importance of digital education, the Government of India has undertaken several reform measures and launched numerous digital initiatives and programmes in the education sector since the 1970s to harness the power of digital technology to boost educational attainment and facilitate holistic development. An overview of the historical context and policymaking process leading to the emergence of digital education over the years reveals the remarkable journey of digital initiatives in the educational sector in India.

Since 1972, the Indian government has focused on enhancing the education system at all levels through the use of science and technology. The emphasis during this period, on the advice of the Kothari Commission, was on the use of radio and television as important media for educational broadcasting, along with improvements in pedagogical and technological institutions, equipment production, textbooks, curriculum development, innovations in methods, and evaluation. A newspaper devoted to the educational sector in the country was also launched (Bajpai et al., 2019). Subsequently, science and technology facilities were initiated for schools through the National Council of Educational Research and Training (NCERT). The extensive investment in educational infrastructure and improved access to schools has enabled the government to focus on enhancing educational quality through digital learning. The first attempt to introduce educational technology was made in 1994 by the Government of India (Kumar Nag, 2022). The Integrated Educational Technology scheme was also initiated to encourage educational media development.

Given the phenomenal growth of digital technology and its use by children and youth, the framework of the National Policy on Education adopted in 1986 provided for the establishment of a National Programme of

Educational Technology (NPET) for the use of multimedia and other advanced technology for content dissemination. Since then, various initiatives have been undertaken to promote digital education in the country. A comprehensive overview of the digital initiatives undertaken by the Government of India in the educational arena in the last three decades is shown.

## 3. Key Digital Initiatives in Education

Digital initiatives in education have grown considerably in India over the past two decades. A significant push for digital education was evident in the National Policy on Education, 2020. The digital initiatives of the Government of India comprise a range of programs and policies implemented in a coordinated manner to provide equitable access to digital education on priority basis.

Digital Infrastructure for Knowledge Sharing initiatives under the National Policy on Education, 2020 project to make educational resources, both curricular and extra-curricular, available as per the National Curriculum Framework and the National Education Policy, 2020 through free, open, and editable digital repositories. A broad spectrum of programmes – National Repository of Open Educational Resources, e-PG Pathshala, SWAYAM, DIKSHA, National Digital Library of India, NISHTHA, and NCERT are being implemented in association and collaboration with National Council for Educational Research and Training, State and Central Education Government Departments, State Council for Educational Research and Training, Central Institute of Educational Technology and other bodies to further the Digital Infrastructure for Knowledge Sharing agenda.

The Access, Equity, and Inclusion agenda aims to facilitate holistic development while ensuring equity, access, and inclusion. The initiatives under this agenda give utmost attention to the digital divide and promote computers and high-speed internet among marginalised communities, a gender-parity approach under the Beti Bachao, Beti Padhao initiative, and Computer-aided Learning within the Rural Education Programme (Rural edTech Programme). (Bajpai et al., 2019)

### 3.1. National Education Policy Framework and Digital push

The National Education Policy (NEP) 2020 represents an ambitious undertaking to revamp the Indian educational landscape, and the digital thrust is pivotal to its successful implementation (Kumar Nag, 2022). With a focus on educational equity, quality, and the use of technology to enhance educational outcomes, NEP 2020 aims to build national capacities for the creation of educational materials in digital format and promote their dissemination through platforms such as DIKSHA (Digital Infrastructure for Knowledge Sharing), a national school education digital platform (Aithal & Aithal, 2019). The NEP 2020 implementation strategy identifies eleven priority actions, the first of which focuses on achieving “universal access to education and ensuring equity”. Priority two addresses universal foundational literacy and numeracy in primary school by 2025, and priority three promotes digital learning and high-quality educational resources for all learners.

### 3.2. Digital Infrastructure for Knowledge Sharing

In addition to substantial provision of educational materials, educational digital infrastructure has aimed to increase reach, especially in underserved areas, and to facilitate varied and appropriate content, ensuring quality and scope, including contemporary requirements and local relevance (Bajpai et al., 2019). Covering 71.99% of schools, national connectivity ambitions target at least 100 Mb per school and adaptable, hierarchical, cachable local access in single- and multi-member modes. Deployable anyplace, DIKSHA—the most comprehensive digital infrastructure for learning in India—aggregates diverse content, data, and assessments from various sources, overseen by a multi-stakeholder and multi-level framework aligned with the National Education Policy.

### 3.3. Access, Equity, and Inclusion Initiatives

Digital initiatives in education in the Government of India are cognizant of the fact that access to digital learning resources can be permeable to only a certain extent. Regulatory decisions, creative outreach programs, and capacity building initiatives have had to be framed to ensure that the digital dividend is experienced uniformly across all strata of society and all phases of education. Consequently, digital initiatives in education are targeted at three specific groups, regarded as the most disadvantaged in the educational landscape: The first set of initiatives strives to bridge the current gender disparity in formal schooling in India, the second aims to provide access to learners belonging to Scheduled Castes, Scheduled Tribes and other backward classes, and the third focuses on narrowing the urban-rural gap in education.Discerning the limitations imposed by society on non-privileged sections, digital programs in education have made special provisions to ensure that digital resources and skills enable these sections to coalesce into the mainstream.

A National Policy for the Empowerment of Women was carved out in 2001, which recognized that digital resources could better the status of girls and women. The government launched its support for girls' education through the Sarva Shiksha Abhiyan within the digital framework, and the National Mission for the Empowerment of Women declared a goal of bridging gender disparities and the gender gap by 2015. The government has partnered with non-profit agencies to reduce the gender gap, particularly in digital literacy among girls and women. The Beti Padhao–Beti Bachao initiative aimed at ensuring equal access to education for girls. Analysis of the parameters for secondary education established by the 2017–2020 Education Commission reveals that these initiatives had yet to succeed, as girls continued to lag behind boys despite the sustained efforts of the government.

### 3.4. Educational Content and Open Resources

Educational resource materials play a fundamental role within public programs aimed at education and literacy. Such activities can broadly be grouped into three categories: educational content within the framework of the National Educational Policy, free access to open resources, and educational resources to support the learning of high-demand local languages.

Central Governments in India and several Indian State Governments are putting in serious effort, time, and money to reach ambitious educational goals set out in the National Education Policy (NEP): eliminating dropouts from schooling, raising the average length of schooling, and improving overall educational outcomes. Educational materials are therefore needed to support the effective attainment of these goals. Well-specified open educational resources constitute a key part of the educational materials plan; they lower overall content acquisition costs for teachers and pupils and embody the concept of education as a public good. Alongside materials that support the learning of Hindi and English, many other languages facing high local demand are supported. The content focus is restricted to the same subjects, themes, and pedagogical objectives specified in the national curriculum framework.

Educational resource materials continue to feature strongly among free open educational resources provided to governmental and private educational institutions and individual learners across the country. A move is being made to shift the entire curriculum-related content produced for one of the most prominent digital initiatives—the National Repository of Open Educational Resources (NROER)—from the Creative Commons Attribution-CC BY licensing model to the more far-reaching Public Domain model (Bajpai et al., 2019).

### 3.5. Assessment, Analytics, and Evaluation

Assessment, Analytics, and Evaluation initiatives leverage Digital India's ecosystem to promote quality in education via data tracking, integration, and constructive analysis. The National Achievement Survey collects data on learning outcomes among students in Grades 3, 5, 8, and 10 every three years, while the National Assessment and Accreditation Council—which performs a key advisory function—ranks institutions using detailed analytics.

The National Educational Technology Forum will employ the data collected across these initiatives to recommend strategies for appropriate levels of digital integration within different sectors of education. Such strategies will help the Central Advisory Board of Education and the Ministry of Education to review the policy framework on digital education and generate a comprehensive roadmap for monitoring, evaluation, and improvement. All data privacy and security regulations must be adhered to at each stage.

## 4. Implementation Mechanisms and Governance

Digital India aims to transform India into a digitally empowered society and knowledge economy and is founded on three vision areas: (1) Digital infrastructure as a utility to every citizen; (2) Governance and services on demand; and (3) Digital empowerment of citizens (Bajpai et al., 2019). In India, 44 million additional school enrollments and 100 teacher training programs are needed to achieve Sustainable Development Goal 4 by 2030. Digital initiatives enhance collaboration, coordination, and speed among stakeholders, providing flexibility of design and delivery at scale.

Digital India underscores efforts to leverage technology and extend their reach to diverse groups, aiming to empower family members of dropouts and facilitate innovative education. Annex 1 lists several online measures that supplement pulse-based initiatives. Envisioning better educational outcomes and reduced inequalities through enhanced experiences warranted a deeper understanding of ongoing initiatives. The National Education Policy emphasizes ensuring quality schools in every neighborhood to curtail dropouts, but current innovations remain unexamined. Evaluation frameworks developed in advanced jurisdictions can help design, assess, and improve education-based programs in India.

### 4.1. Roles of Central and State Governments

Fulfilling the constitutional mandate of an educationally decentered polity, most digital initiatives in education are administered by State Governments following national guidelines. Moreover, the education sector rests primarily with the States, which oversee wide-ranging elements from systems of school classification and the establishment and closure of academic or administrative units to pre-service training and teacher promotion. Although Central Agencies are active in higher education, sector-specific oversight belongs to the States. Coordination is conducted through a Tripartite Mechanism involving the Union Government, State Governments, and Union Territories, where digital initiatives occupy a dedicated agenda. Ministries regularly convene these meetings with a minimum frequency of twice a year. Additionally, the Central Government and Union Territories participate in periodic reviews of the Samagra Shiksha Abhiyan Digital Initiative (Singh et al., 2021).

Constituted under Article 246 of the Constitution, the Seventh Schedule delineates the distribution of legislative powers between the Union and State Governments. Elementary education, for example, appears in Entry 3 of the Concurrent List, framing co-joint Union-State authority where the States enjoy devolved autonomy; thus, sectorial digital initiatives derive mainly from State-level directions. The States exhibit discretionary powers over existing policies, as Union edicts do not necessitate compliance. Digital provisions nevertheless submitted

for Union verification by the National Council of Educational Research and Training (NCERT)—the principal agency responsible for the National Curriculum Framework—clarify alignment with specifications, objectives, and design defined in national legislation (Parmar, 2019).

### 4.2. Public-Private Partnerships and Stakeholder Engagement

Policies governing digital education reforms in India reflect longstanding, fragmented, and location-specific regulatory arrangements. The Constitution of India (1950) grants paramount education authority to state governments. Parallel federal systems, including State Councils for Education Research and Training, National Institute of Open Schooling, and School Boards, further complicate the governance landscape. These arrangements risk duplication of effort, inefficient investments, and misappropriation of resources. The approach to digital initiatives reflects diverse determinants, including hierarchical and participatory styles, the emergence of a strong civil society, and close engagement with Private Sector partners. Such external collaborations—considered increasingly critical for achieving public policy objectives—affect governance, risk-sharing, and accountability (Charania & Davis, 2016) (Leahy et al., 2016).

### 4.3. Capacity Building and Teacher Training

Digital initiatives seek to transform teaching practices and education quality through teacher training programs and capacity building programs for faculty across pre-service and in-service training (Bajpai et al., 2019). The effectiveness of education initiatives depends heavily on the availability of well-trained teachers, and new technology offerings have shifted the way teachers impart knowledge. Therefore, to ensure the sustainability of the resources developed as part of other digital initiatives, additional pedagogical training is needed to keep the skills imparted through these programs current.

## 5. Impact, Evidence, and Critical Perspectives

The Government of India has made notable progress in digital initiatives for education, yet evidence of their impact on outcomes remains limited and unevenly distributed across states, sectors, and socio-economic groups. The empirical base for assessing digital initiatives is still nascent and predominantly focused on basic literacy, leading to considerable uncertainty concerning broader educational effects. Addressing this gap warrants careful consideration of measurement methodologies, especially regarding statistical robustness and comparability, before drawing substantive conclusions—pointing to the need for data-driven approaches in educational policy. Data furthermore underline the continuing existence of a digital divide across a range of indicators between schools, with marked differences between rural and urban areas, particularly in the Government sector. The COVID-19 pandemic has exacerbated disparities in content delivery mechanisms and levels of engagement across sectors and states, highlighting the urgent need for foundational capacities before implementing additional digital measures and reiterating the importance of on-ground conditions in effective institutional design. Consequently, there is stark divergence between stated ambition and prevailing reality, underscoring the broader risk of digital initiatives forming part of a new form of "policy without policy"—a compelling statement or rhetoric—rather than closely linking to on-ground conditions and progress.

Concerns over data capture, privacy, security, and ethics also persist in relation to students and the education workforce. While governance frameworks are established at the national and state level, there continues to be a significant gap in both compliance and capacity. Institutional measures to address these challenges remain insufficient, even for high-stakes assessments such as the National Achievement Survey, where draft documentation reveals gaps in transparency, disclosure artefacts, and other formalities. (Bajpai et al., 2019)

### 5.1. Outcomes in Learning Outcomes and Literacy

India has endeavoured to boost education amongst its populace through digital initiatives that connect the national educational structure in many forms. These initiatives offer a large number of benefits, such as enhanced access to academic resources and teaching aids for both students and educators alike (Bajpai et al., 2019). Debates surrounding digital initiatives have floated notions of their effects on academic performance for years; however, significant inconsistencies surround the question of whether academic progress has actually improved learners' literacy rates as a result. Various measurements common in international assessments are adopted in order to gauge reading comprehension, pride through garnished scores, and comprehension of numerical concepts—in addition to the expected growth of a digital divide when comparing between distribution sectors (A Wagner et al., 2010).

Amongst the global benchmark assessments, the latest available Transparency International's 2018 Big Data Transparency Tool serves well for comparative analysis; however, no such previous round exists equipollent to the stated conception burst. Hence, post-2018 scrutiny is hampered by Frey's (2019) Working Paper's observation that no large-scale assessment is yet comparable to the Integrated Survey India (INSAT) or early Hoshikuma, therefore leaving sector pair longitudinal scrutiny of learners' academic growth largely unavailable pre-multitude launch.

### 5.2. Digital Divide and Geographical Disparities

Limited access to educational assets is a prominent barrier in the Indian educational system. At the national level, urban regions receive an overall better provision of infrastructure and educational material as compared to rural areas. These parameters are often termed as "welfare indicators." The urban-rural divide is also observed in other parameters such as school quality and availability of trained teachers. A gap is present between subjects taught in schools vis-a-vis time allocated to them. The difference of school provision is seen amongst different management bodies too, for example, schools under government and local body management provide more hours for subjects such as English, Mathematics, and Science as compared to schools run by private management. These observations indicate a difference in expenditure on education under various management bodies as well (Bajpai et al., 2019).

Many of the established platforms are under-utilized due to lack of awareness or limited knowledge regarding digital means. A mismatch is observed between the platform frequency and teachers' and students' perceptions about it. Still-accessed local digital content is more relatable and thus more appreciated by the students in comparison to the national-level content disseminated by various educational websites. Thus, there is a considerable scope for improvement when viewing at the national level, as digital material still hold importance in the learning process. The ongoing coronavirus pandemic and the recent lock-down have compelled the educational institutions to adopt a "digital backup" in the event of interruption in classroom studies. Various technological enhancements at any level will contribute greatly towards the improvement of the educational sector, not to mention the complimentary assets, tools and material already provided through existing national and state platforms.

### 5.3. Data Privacy, Security, and Ethics

Data privacy and data protection are major challenges faced by organizations and individuals in both developed and developing countries. In India, the Personal Data Protection Bill, 2019 (PDP Bill) aims to establish a comprehensive legal framework for data protection, but it is still pending approval from Parliament. The Framework for Responsible AI by NITI Aayog does not directly address data privacy, leaving the issue of data

governance unregulated. Internationally, the use of Artificial Intelligence (AI) is increasing, and establishing a data governance regime that promotes responsible and ethical AI at every level of governance in complex technological systems is obligatory (Yadav et al., 2023).

## 6. Challenges and Risk Mitigation

The substantial digital infrastructure of New India holds immense potential to transform education (Kumar Nag, 2022). However, multiple challenges hinder the realisation of this transformative vision. Three critical concerns are identified: Infrastructure and Connectivity Barriers; Content Quality and Localization; and Sustainability and Funding.

Infrastructure and connectivity barriers, primarily faced by underserved communities, jeopardise the potential of digital initiatives. The durability of digital infrastructure adversely affects the implementation of initiatives. Successful efforts—including Google's Massive Open Online Courses, videos, tutorial websites, and interactive learning platforms—were limited by unreliable mobile networks during the COVID-19 pandemic. Hybrid learning has emerged as the preferable approach because the complete convergence of education through Digital Infrastructure for Knowledge Sharing remains unattainable (Bajpai et al., 2019).

Subpar content quality hampers educational access, equity, and inclusion. Asynchronous and self-directed content exert a greater impact than conventional approaches. Presently, approximately 10% of registered courses, including large open online courses, do not foster enrolment beyond one. Such unwillingness to engage with scheduled courses or modules indicates deficiencies in content quality—quality must be enhanced before widespread student population engagement can be achieved.

### 6.1. Infrastructure and Connectivity Barriers

Internet reliability in India is far from adequate to sustain an online or hybrid educational model. At the end of 2021, only 53% of households had internet access, against more than 90% in developed countries (Kumar Nag, 2022). Many rural internet connections are intermittent, with coverage often unavailable for several days.

The country is highly susceptible to natural and man-made disasters, such as droughts, floods, and civil unrest. Less than a third of schools have access to public electricity, hindering internet availability even in areas where networks could be deployed (Bajpai et al., 2019).

### 6.2. Content Quality and Localization

For educational digital content to be effective, its quality and relevance to the local context are essential. The Government of India recognizes this and specifies both as important objectives in its digital initiatives (Bajpai et al., 2019). Across India, education systems share an understanding of the need to develop interventions, governance metrics, and requirements that not only provide for the creation of quality resources but also move toward localization, de facto context-based relevance, and adherence to local language uses. By focusing on these aspects, the government hopes to develop content that meets these needs and proceeds towards locally leveraged engagement.

Such local engagement addresses the diversity that exists in India with respect to social, cultural, and geographical ethos and the languages used in classrooms. The framework that India builds to monitor and move towards a diverse, context-sensitive, and locally relevant landscape may include the terms used above, though, in addition, it is necessary to integrate standards of sublimation, and alignment with the National Curriculum Framework (NCF) also requires acknowledged focus as a foundation for the preparations of opportunities among students.

Efforts to maximize the scope for contextual relevance and engagement without aggravating existing unevenness require indicators that encompass the existence of locally relevant content also in terms of subject-wise classification, the amounts of education material available through the government's digital repositories matching the same subject-wise breakdown and simultaneously compatible also with locally predominant languages spoken among the student body, and the numbers of users and utilization instances emerging through these platforms and resources, again all disposed on the same subject-wise basis.

### 6.3. Sustainability and Funding

Most initiatives have adopted a multi-stage funding model that initially requires and attracts higher investments, which subsequently diminish as coverage expands and activities become self-sustaining. Implementation commences with a pilot phase followed by scale-up, permitting stakeholder buy-in and establishing organisational capabilities and local operating demand. The extraordinary effort yet comparatively short duration devoted to the Digital India programme has prompted concerns regarding the sustainability of outreach activities and common ICT-D projects executed under it. Education, particularly at the secondary and vocational levels, constitutes one of the programme's seven priority domains (Bajpai et al., 2019). Coverage, however, remains low among both schools and students, focussing on making standalone classrooms "smart" and supplementing textbooks with digital resources. The ambition to complete the Digital Links extends to azimibha Aam – connect ed h ubs that host infrastructure regional coverage beyond central governance, alongside the broadband initiatives undergoing piloting, National Optical Fiber Network, and direct delivery of utilities on-demand.

## 7. Future Trajectories and Policy Recommendations

Digital technologies can improve access to high-quality educational content, enhance teaching capabilities, and support efficient data collection for informed decision-making, thereby transforming educational systems (Bajpai et al., 2019). The rich array of digital initiatives launched in India since the 1990s represents one of the world's most comprehensive efforts to leverage technology for education. These initiatives are guided by a coherent national vision articulated in the National Education Policy 2020, which recognises the importance of an equitable and inclusive system and the need to harness the benefits of educational technology. Most digital initiatives echo this policy, although significant operational differences in their scope and implementation emerge. The national and public-private governance structures underpinning their implementation also exhibit considerable variety.

## 8. Conclusion

Sustainable digital initiatives in education in India are intended to improve governance and educational outcomes throughout the country by facilitating access, equity and inclusion, educational content and open educational resources, and assessment, analytics and evaluation. They are framed within the National Education Policy (NEP) 2020 and have evolved through a series of complementary programmes. Their objectives, mechanisms and anticipated impacts have been specified in an array of policy documents, and progress is being monitored through public statements and the National Achievement Survey (NAS).

A coherent implementation approach promotes and monitors initiatives with a high degree of homogeneity across different states and central agencies. During their introduction, the roles of state governments converged widely, thanks to the overarching policy framework, intergovernmental consultations and formal nation-wide institutions. Coordination across central ministries and departments has been strengthened, although diverging priorities and bureaucratic complexity still limit fully integrated execution. Public-private partnerships and

stakeholder engagement are being pursued to induce technological innovation and offset government shortfalls, but existing arrangements do not assure widespread participatory involvement or equitable service distribution throughout the education system, and extreme governance disparities between states complicate their efficacy. Capacity-building and teacher-training schemes offer crucial opportunities for professional development, yet their effectiveness remains inexperienced in many jurisdictions and the sustainability of enhanced teaching proficiencies is frequently undermined as teachers rotate between institutions or transfer to unrelated sectors.

Transformational improvements in learning outcomes and literacy have yet to be realised, despite greater activity and a deeper commitment to digital-age competencies than in many comparable systems. A downward inflection in democracy ratings is increasingly mirrored by constraints on evidence-based policymaking, compliance with fundamental rights and autonomous oversight of educational matters. Action on the digital divide has intensified, but geographic imbalances and uneven sectoral and group reach persist. Systematic attention to data privacy, security and ethics has been prescribed, yet only time-limited and imperfectly enforced monitoring remains in place following low-voltage introduction.

Infrastructure and connectivity deficiencies reduce the reliability and resilience of online resources. Content shortfalls—including quality, alignment with local curricula and language—and a lack of mechanisms for iterative improvement remain pervasive. The long-term viability, cost-effectiveness and adequacy of funding arrangements—especially in the wake of disruptive changes in delivery modality, work setting and learner modalities—are the subject of increasing speculation.

Digital education has been a prominent area of policy interest in India since the 1990s; yet, despite the significant advancement of infrastructure, the digitisation of resources, and the introduction of new educational platforms, the quality and effectiveness of new digital initiatives remain under-explored in the available scholarship. A systematic and rigorously periodic overview of developments since the establishment of a separate digital education mission and associated National Educational Technology Forum in 2020—alongside the contextualisation of initiatives within the broader digital strategy, survey of ongoing activities, scrutiny of implementation arrangements, assessment of emerging outcomes, identification of hindrances and the delineation of prospective future trajectories—therefore represent a useful contribution to the literature.

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