



DIKSHA as the Digital Backbone of NEP 2020: Transforming School Education in India

Dr. Mary Kamolina Ekka

Lecturer in Education

College of Teacher Education (CTE) Balangir, Odisha

Email id-marryekka2026@gmail.com

Abstract

DIKSHA (Digital Infrastructure for Knowledge Sharing) is the core digital infrastructure for the National Education Policy (NEP) 2020, which aims to establish an equitable, inclusive and technologically advanced educational system across India under the 'One Nation, One Digital Platform' concept of the PM e-Vidya initiative. As a tool during India's G20 Presidency, DIKSHA is a scalable, open-source public digital asset that enables equal access to technology-driven education and advances Sustainable Development Goal 4 (SDG 4). DIKSHA offers more than 100,000 digital resources in more than 30 Indian languages for students, educators and school administrators. This study explores how DIKSHA is implementing the strategic foundations of NEP 2020 by introducing Energised Textbooks (ETBs) to promote multilingual, competency-oriented curricula; implementing Continuous Professional Development (CPD) through online NISHTHA modules; and aggregating quality educational resources through the VidyaDaan framework. It also explores the platform's accessibility features, such as Universal Design for Learning (UDL), Indian Sign Language (ISL), DAISY formats, and the AI-enabled TARA chatbot. This study considers all of these barriers as well as others including digital divides between rural and urban areas, infrastructure issues, application user friendliness, and teacher preparedness, in order to provide tangible recommendations on how to use DIKSHA as a vehicle for national education reform.

Keywords: DIKSHA, NEP 2020, PM e-Vidya, Digital Education, SDG 4, Teacher Professional Development, Inclusive Learning

1. INTRODUCTION

The NEP 2020 has been a revolutionizing change in the school education system of India through its innovative outlook for education that is inclusive, interdisciplinary, and learner-centered, utilizing digital assets judiciously. The NEP 2020 does not look at technology as a mere addition but regards it as a vital public asset that has the ability to remove barriers of socio-economic inequity, language barriers, and geographic barriers. The NEP's focus is entirely in alignment with the theme of "One Earth, One Family, One Future through Education" which was presented by India in its G20 Presidency (SDG 4). DIKSHA (Digital Infrastructure for Knowledge Sharing) is at the core of this reform. DIKSHA is the national repository connecting central and state educational institutions, including NCERT, NIOS, and SCERTs. It is an open-source platform that operates under the PM e-Vidya framework as One Nation, One Digital Platform. The platform provides multilingual electronic resources, Energised Textbooks (ETBs) and open-access educational repositories to help make quality education accessible to urban and rural classrooms. However, to understand NEP 2020's high ideals, one needs to analyse DIKSHA's current educational practice, operational successes and the infrastructural challenges that must be overcome to enhance its national educational impact.

2. LITERATURE REVIEW

The literature related to digital education platforms in India points to the alignment of national policy directives, specifically the National Education Policy (NEP) 2020 and Sustainable Development Goal 4 (SDG 4), with the need for technology-enabled learning in the face of disruptions such as COVID-19 (Verma et al., 2024). Verma, Dash and Purohit (2024) examine this relationship empirically using the DIKSHA platform with 100 educators and 100 secondary pupils in 30 villages in Rajasthan. The study shows a high level of platform awareness (96% among educators, 95% among learners) and higher enrollment rates, confirming DIKSHA's role in maintaining educational continuity during emergency school closures (Verma et al., 2024).

The literature describes different user behaviours between stakeholders: educators mainly use mobile apps for content creation (59%) and revision of instruction (47%), whereas learners mostly use web interfaces to access the portal for test preparation (99%), practice homework (99%) and digital textbooks (95%) (Verma et al., 2024). However, recent research shows that digital access remains very unequal. Structural barriers such as slow internet speeds and connectivity issues (reported by 52% of participants), lack of hardware (affecting 41% of learners), and lack of technical training for educators (19%) hinder ongoing integration in classrooms (Verma et al., 2024). Therefore, researchers suggest that targeted online literacy programs and improved digital infrastructure in rural areas are essential to realising the full capacity of digital repositories (Verma et al., 2024).

3. OBJECTIVES

- To study the implementation of key pedagogical and structural instructions of NEP 2020 through the DIKSHA platform, like dissemination of content in multilingual languages, Energised Textbooks (ETBs) and Continuous Professional Development (CPD) through NISHTHA.
- To assess the current usage patterns, level of adoption and impact of DIKSHA on educators, learners and school administrators in different educational contexts.
- To Identify structural, technical and pedagogical barriers in the nationwide rollout of DIKSHA and recommend feasible policy interventions for sustainable educational change.

4. ARCHITECTURAL FOUNDATIONS: "ONE NATION, ONE DIGITAL PLATFORM"

India's diverse educational landscape calls for a framework that acknowledges regional socio-cultural contexts while adhering to strict national educational standards. DIKSHA achieves this balance by becoming an integral part of the "One Nation, One Digital Platform" framework of the PM e-Vidya initiative. DIKSHA is an open-source, scalable digital public infrastructure based on an interoperable digital conduit rather than a static centralised repository. It brings together the educational resources of national- and state-level organisations such as NCERT, NIOS, e-Pathshala, NROER, and various SCERTs into a single, low-bandwidth, coherent framework.

Dimension / Pillar	Core Platform Features on DIKSHA	Strategic NEP 2020 Mandate Supported
Foundational & Multilingual Content	Over 100,000 e-contents mapped across Grades 1–12 in 32+ Indian languages.	Promoting mother-tongue/regional instruction and foundational literacy and numeracy (FLN).
Energized Textbooks (ETBs)	Physical-to-digital QR-coded textbook integration unlocking multimedia worksheets, audio, and visual aids.	Bridging traditional pedagogy with blended, experiential, and inquiry-led learning modes.
Teacher Professional Growth	Self-paced, multilingual online NISHTHA certification courses spanning early childhood to secondary cadres.	Institutionalizing 50 hours of mandatory Continuous Professional Development (CPD) per year.

Competency & Diagnostic Assessment	Interactive quiz formats, HOTS practice questions, Aryabhata Ganit Challenge, and Discover Gandhi modules.	Moving away from rote memorization toward formative, 21st-century competency assessments.
Open & Crowdsourced Co-creation	VidyaDaan nationwide contribution workflow sourcing verified donations from private and public experts.	Fostering cross-sector collaboration, open educational resources (OER), and community ownership.
Equitable & Inclusive Access	Universal Design for Learning (UDL), Indian Sign Language (ISL) videos, audiobooks, DAISY text formats, and TARA AI assistant.	Eliminating barriers for Divyang/Children with Special Needs (CWSN) across equitable learning tracks.
Decentralized School Leadership	State-driven Micro-Improvement Projects with automated data analytics tracking reading and infrastructure tasks.	Transforming school governance, localized capacity building, and school-based performance improvement.

One important component of this technical framework is the use of Energised Textbooks (ETBs). The platform uses Quick Response (QR) codes in physical textbook chapters to create an accessible hybrid model that links traditional print content with interactive digital content, such as animations, audiobooks, and assessment activities. It has been developed to capture the true essence of the classroom in India where technology goes hand-in-hand with conventional learning rather than replacing it. DIKSHA, which works on cloud technology, enables millions of transactions in education using various forms. This move breathes life into the NEP 2020 mandate for open-source digital public goods to democratise high-quality, continuous, and equitable education across the country.

5. FOUNDATIONS OF DIKSHA IN REALISING NEP 2020

5.1 Foundational & Multilingual Content

The NEP 2020 emphasises the need for primary education in the mother tongue to prevent learning disconnect. DIKSHA provides rich learning resources in 32 Indian languages, thereby making them culturally relevant and strengthening foundational literacy and numeracy (FLN).

5.2 Energised Textbooks (ETBs)

Energised Textbooks (ETBs) are moving classrooms away from rote learning by linking physical chapters to simulations, animations, and practice exercises via QR codes, thereby promoting inquiry-led and skill-oriented education.

5.3 Teacher Professional Growth

DIKSHA is the digital NISHTHA initiative to meet the NEP requirement of 50 hours of Continuous Professional Development (CPD) annually. They are self-paced, available in 11 languages, and teach instructors experiential teaching methods and socio-emotional development.

5.4 Competency & Diagnostic Assessment

DIKSHA has replaced high-stakes assessments with formative assessments. Problem sets, tests, and competitions for diagnostic purposes, such as the Aryabhata Ganit Challenge, provide real-time performance analysis and help focus on mastery assessment.

5.5 Open & Crowdsourced Co-creation

VidyaDaan is a platform for organisations, the private sector, and individual educators to contribute open educational resources (OER). “Submissions are verified by central and state authorities to ensure quality and prevent commercial exploitation.

5.6 Equitable & Inclusive Access

As per the Universal Design for Learning (UDL), DIKSHA also offers Indian Sign Language (ISL) videos, DAISY resources and audiobooks for children with special needs. The platform also includes “TARA,” an AI-powered chatbot that helps users navigate and discover content.

5.7 Decentralized School Leadership

DIKSHA has also initiated micro-improvement initiatives in more than 26,000 schools in underperforming districts to conduct localised reading campaigns and advance institutional goals, promoting leadership at the school level.

6. IMPACT, AND REALITIES

Conducting field studies has indicated both pros and cons of the implementation of digital learning material from the perspective of its impact on education. On the one hand, there is something to be happy about because well-planned digitalization was very useful for underprivileged learners who demonstrated better knowledge retention, while teachers reported satisfaction with multilingual digital CPD programs such as NISHTHA. Moreover, the use of interactive digital media in classrooms ensures increased student involvement, discussions, and better formative assessments. On the other hand, there were several significant challenges that have prevented educational benefits from being achieved in practice, and they included the presence of a second-level digital divide due to unequal distribution of learning devices among learners. It became even more complicated due to the inconsistent implementation during which teachers got their digital certification but did not use Energized Textbooks (ETBs). Furthermore, there have been some issues related to technical skills of teachers concerning the creation of content using software, as well as with usability of platforms.

7. CHALLENGES

However, there are going to be many operational issues related to the successful implementation of digital educational platforms that begin with such factors as infrastructure limitations and connectivity issues associated with the low bandwidth, unstable energy supply, and the absence of devices that contribute to poor application of the digital tools in education and hence the rise in disparity of education in these regions. This issue is compounded by insufficient training in digital pedagogy since existing professional development programs only include knowledge about basic usage of the platform and not its application in teaching. Another important issue is the issue of the balance between standardization and dynamism of the content since updating multimedia content in 32 languages in accordance with new curricula becomes increasingly difficult. Finally, implementing this program on a nationwide level will mean handling large amounts of data that have to be carefully protected.

8. ACCELERATE DIKSHA'S IMPACT

In order to provide more effective impact of online education resources, there must be a strategic policy that allows increasing offline caching and asynchronous features by means of installing local intranet servers and caching at schools which would give rural students access to multimedia educational materials even without reliable broadband connectivity and allow synchronization of data when it is possible. Furthermore, professional development should change its focus from digital literacy to digital pedagogy which would allow transition towards the flipped-classroom model where the independent learning will be done using videos and solving cooperative problems during class time by means of using formative diagnostics and differentiating remediation and practitioner communities in order to create lessons based on proved frameworks. Along with this, the government should increase the use of dynamic assessment by means of creating comprehensive collections of higher-order thinking skills (HOTS) questions, interactive worksheets, and peer reviews in order

to stop using standardized tests. Finally, institutionalizing structured feedback systems through continuous, in-app user experience evaluations will empower software teams to rapidly eliminate bugs, remove obsolete content, and refine platform interfaces based directly on teacher and student insights.

9. CONCLUSION

Following the idea to revolutionize the Indian education system by means of an equitable procedure according to the NEP 2020, DIKSHA is regarded as the basic digital platform in accordance with “One Nation, One Digital Platform” via PM e-Vidya. Through Energized Textbooks, NISHTHA training for teachers, and more than 30 languages, DIKSHA implements the NEP 2020. Nevertheless, tackling problems with rural connectivity, creating a common device interface, and improving training programs for teachers are key steps to ensure success for DIKSHA as a digital tool.

10. REFERENCES

- Access and use of DIKSHA for school teachers and students amid COVID-19: An assessment of rural Rajasthan. (2025). [Research Article]. *Indian Journal of Educational Technology*, 1–1, 138–140.
- Altaf, F., Anees, S., Maulana Azad National Urdu University, & Central University of Kerala. (2025). DIKSHA: SHAPING THE SCHOOL EDUCATION ECOSYSTEM IN INDIA. In *Peer Reviewed and Refereed International Journal*. Sucharitha Publication, India. [https://ijmer.s3.amazonaws.com/pdf/volume14/volume14-issue2\(1\)/5.pdf](https://ijmer.s3.amazonaws.com/pdf/volume14/volume14-issue2(1)/5.pdf)
- Rezat, S., Fan, L., Pepin, B., & The Author(s). (2021). Mathematics textbooks and curriculum resources as instruments for change. In *ZDM – Mathematics Education* (Vol. 53, pp. 1189–1206). <https://doi.org/10.1007/s11858-021-01309-3>
- Verma, R., Dash, D. N., & Purohit, M. (2024). A Study on Access and Use of Diksha for School Teachers amid Covid-19 in Rajasthan. *International Journal of Research and Scientific Innovation*, XI(VI), 21–37. <https://doi.org/10.51244/ijrsi.2024.1106003>