

# Reframing Indian Education: Digital Learning and Critical Thinking Post-NCF 2023

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**Abstract:** This paper analyses how the National Curriculum Framework for School Education (NCF 2023) reconceptualises digital learning towards the promotion of critical thinking in Indian classrooms. The rapid proliferation and penetration of digital platforms like DIKSHA, PM eVIDYA in the era of COVID-19 led to their expanded accessibility but also brought to sharp focus issues of equity, quality and privacy. Inspired by NEP 2020, NCF 2023 aims to take teaching mode from mere access. This paper systematically reviews policy documents, platform statistics, UNESCO and government reports, as well as recent research in order to (1) add to the emerging perspective on digital teaching of NCF 2023 (2) evaluate the best practices and likely pitfalls that existing high tech tools afford for practicing critical thinking within technology-based assessment paradigms for Nigerian classroom context and (3) suggest classroom interventions so as to have teacher development highlighted with use of technology for CT. The results suggest that the national platforms (in particular: their reach and teacher coach training) contains rich content, but that there are still digital divides and varying quality of educational resources – along with weak formative assessment practice – acting as bottlenecks to further reasoning/inquiry breakthroughs. The paper suggests for curriculum development, changes to assessment, adaptive digital resources and long-term teacher support that can harness the power of digital tools to make inquiry-based reasoning through evidence-based reasoning and metacognition shapes how they work rather than simply being a mere transmitter of factual information.

**Keywords:** NCF 2023, digital learning, critical thinking, DIKSHA, PM eVIDYA, NEP 2020, teacher professional development

## Introduction

NCF 2023 results in a shift of emphasis from sharing the content to developing inquiry, reason and spirit of learning throughout one's life. This was motivated by NEP 2020, which emphasised the need to foster critical thinking. Govt. Initiatives for COVID -19 Pandemic In the time frame of covid- 19 pandemic, the Govt of India had initiated multiple digital programmes like DIKSHA and PMevidya, which led to higher learner engagement, but learning outcomes were not promising enough to guarantee the efficacy of these programmes. This paper discusses Measuring Critical thinking in the Digital environment and how it can enhance Digital learning, as reiterated by NCF2023 in Indian classroom settings. In this debate, the paper analyses policy papers, platform data, international reports, and recent studies to establish evidence-based principles of curriculum implementation, assessment and teacher training module shaping

## Background/Rationale

Digital educational platforms in India, Diksha and PM evidya have multiple modalities of content delivery and access for learning. These were particularly helpful during COVID-19, and are available online – giving students and teachers access to rich content and videos. “But despite all these efforts, what the platforms are facing is that there are challenges with quality of content and with technical issues; accessibility in terms of the dividing line between rural and urban people. One other beyond these biggies is data security, which is a concern for many students. As a result, large numbers

of government schools do not have reliable access to the Internet – or even access at all (57% of schools have operational computers and 53% are connected to the Internet according to UNESCO and official statistics). These are the problems that indicate that in order to foster critical thinking in the classroom, policy should not only be ready from a technical and infrastructural challenge point of view, but also on training per se regarding an aspect of pedagogy, i.e. training digital teaching at the classroom level so that it would deliver.

### Literature review:

Three areas of literature were reviewed in this research.

- a) Emphasis on higher-order cognitive skills highlighted in the curriculum policy and NEP/NCF document.
- b) India: Studies of the efficacy and equity of digital platforms
- c) Research on of pedagogical method in developing critical thinking skills.
- d) Reports Based on DIKSHA and other government digital initiatives, including use of DIKSHA in field: In studying studies based on DIKSHA and other such digital learning ventures, it clearly showed the vast differences between design for content.

Some and few are in the increased access but with less quality of enhancement for the development of analytical skills. Teachers do not come forward according to UNESCO Medium Success “Curriculum alignment with teachers’ capacity building for an effective digital transformation. These findings emphasise the importance of policy and infrastructure that is integrated with high-order skill supporting pedagogies

### Theoretical framework”

Model used for social-technical curriculum in which competencies are assumed to derive from sound social construction of the interaction between curriculum goal and assessment, digital content linked to access policy, teachers’ resourcefulness at creatively appropriating the content and latest practices viz., support for metacognition, adaptive sequencing and formative analytics. In this platform-based framework, the function of a platform is here being as a mediator in learning, and its design features (feedback, interaction, assessment form, etc.) have an impact on learning outcomes. From the above, it is obvious that technology won’t come with critical thinking if there’s no curriculum alignment and trained/skilled teacher in place.

### Methodology

This was secondary concept research. The approach includes

- a) Go through the NCF 2023 and NEP 20202 piece, and what the digital teaching or result may come out of it.
- b) Scrutinise the national platform dashboard and government surveys for understanding scale and usage.
- c) Consolidating the collected peer-reviewed literature on digital learning, digital divide and critical thinking interventions.
- d) Validation of national survey and UNESCO connectivity and school facilities data.

This study uses thematic coding of policy documents and compares these findings with other studies. The major limitations are related to public dataset and limited empirical studies.

### Findings

NCF 2023 has also recommended incorporation of CBL & supportive FA in the curriculum which will foster HOC” (p.34). The policy prescriptions show that it is platforms and schools that need to focus on evidence and context-based activities, like open-ended problems, projects – not just passive video consumption.

National digital platforms offer OERs, teacher modules, but quality of content is inconsistent and little ‘interactive’, not tailored for differentiated learning. These types of tools have proven useful for the provision of better content, but they are not suitable for complex learning processes.

The UNESCO data, combined with a very recent national survey, shows that the most learners are indeed offline or under-resourced thanks to absence of infrastructure in many government schools. These gaps are regional, socio-economic, linguistic and that between teachers’ digital fluencies. This means that policy also has to focus on low-tech and blended pathways so we do not make inequality worse.

Teachers can effectively facilitate the digital content in their pedagogy fostering higher-order thinking. But there are invaluable lessons that point to the fact it’s not just one teacher, but continuous peer-learning and mentoring that keep them effective in class. Furthermore, AS assesses not only examination but also higher-level skills and its use of digital teaching and learning methodologies.

Applying NCF2023 for the Classroom: On Synthesis For synthesis, 5 maxims are recommended

Co-design of curriculum and technology: Digital components need to be deliberately linked to competency descriptions (inquiry; evaluating evidence, argumentation) and work in conjunction with formative tasks.

Adaptive content anchored in assessment: The well-designed systems of platforms would include low-stakes adaptive activities with immediate feedback and reflection cues to foster metacognition.

10.1 Mode Combos Offline Package, Broadcast PM eVIDYA and In-class Facilitation Hybrid blended access packages will be made available to address low connectivity areas.

Continuous Teacher Growth: Move beyond one-time training and support to ongoing coaching, peer learning, and evaluation against explicit critical thinking rubrics.

Data Governance and Equity Protections: Improve privacy, content moderation, and multiple language-support features to ensure safe learning spaces. These principles are also working documents that operationalize many of NCF 2023’s aspirations and address some of its greatest challenges. (PM e-Vidya) constraints. (PM e-Vidya)

### **Practical and Theoretical Implications**

In reality, this paradigm means re-centring budgets and program objectives on teacher mentoring, formative assessment systems, and a mosaic of offline and digital materials. For EdTech platforms, it signals a demand for adaptive, rubric-based content and teacher dashboards focused on reasoning rather than task completion. In terms of theory, it has provided some insights as to how the various aspects of the platform, pedagogy and assessment system enable or hinder the development of critical thinking within a sociotechnical curriculum theoretic framework.

### **Recommendations**

For policymakers: incorporate critical thinking and formative assessments into state curricula Enough funding for the mentorship of teachers Platform quality standards or a privacy review. For platform owners & developers: Add adaptive question sets, peer review tasks and moderation tools for teachers; Internationalise / add lower-bandwidth options. For schools and teachers: Design inquiry cycles that “mix” digital prompts with classroom discussions, evidence-based projects and portfolios scored through reasoning rubrics. Access to cognitive empowerment. Realizing that promise requires coordinated action in curriculum design, platform engineering and teacher preparation and equity-centered infrastructure. By designing/ scaffolding inquiry into platforms, when assessments capture reasoning and teachers are supported to mediate digital affordances: Digital learning can shape its destiny to be a powerful force in developing the type of critical thinkers that India needs for its complicated future.

### **Discussion**

From this viewpoint, the study attempted to consider what is an appropriate way to utilise digital learning (as proposed under the National Curriculum Framework for School Education, NCF 2023, in India) of critical thinking among Indian classrooms. The findings suggest that the philosophy behind the policy dovetailed with contemporary attitudes towards competency-based and inquiry learning, although not always at the classroom level. Indian tech-enabled learning

programmes have upturned the accessibility and instructional continuity, but we should remember that its cognitive potential is less a factor of technological presence than pedagogical integration.

These results are consistent with past studies that have shown that technology alone may not result in higher-order thinking unless it is integrated with learner-centred teaching pedagogies and formative assessment. The digital platforms largely are not serving as learning devices, but more as information transfer or preparation exam vehicles - a rote-based environment in the majority of cases. This pattern is also in line with larger limitations such as the classroom-based assessment structure, teacher freedom to choose which programme they should use and a CPD pedagogy of thinking critically.

One such major difference between NCF2023 and these takes is that of privileging inquiry, reflection and concept understanding. But the analysis implies reconciling those goals might lead to new ways of thinking about digital learning design. The platform is not meant to be confined to static resources, but should contain activity-based and discussion-based structures that facilitate feedback, triggering the scaffolding process for reasoning and metacognition. No less significant is the teacher as a “broker” in digital courseware. Skill differences between teachers on the digital and pedagogical frontier could be a more pressing factor in implementing technology, signalling a need for ongoing policy-focused PD (rather than generic tech training).

There are also levels of inequality that confuse the connection between DL and critical reflection. Continuous infrastructure deficits in rural and poor regions lead to unequal digital media usage. The extent to which this can occur may end up reinforcing educational inequalities if digital pedagogies that support critical thinking are only sporadically spread within higher-resourced schools. The first thing that transcends the findings is their reminder of the significance of low-integrated and low-tech pedagogical patterns, which chime well with NCF’s determination to provide context flexibility and content inclusivity.

**Theoretical contribution** This paper contributes to the theoretical framework of digital education as a changing socio-technical network which will prove decisive over the actual educational attainment on the site of policy environment, technological affordances or teacher practice and exam geography. A lens like this is essential by explaining why better technology access doesn’t become a parallel improvement in skills of critical thinking, and where we should be looking for levers of systemic change.

## Conclusion

It is the contention of this paper that digital learning can play a transformative role in fostering critical thinking in Indian classrooms, provided it works through strategic alignment with curricular focus, pedagogic practice and assessment reform. The NCF 2023 provides a converged and futuristic perspective that reframes digital technologies as tools for exploration, reasoning, and conceptualisation (and not just transmission devices for content). That’s not to say there is no digital equipment on the ground, and no orders from above; it’s just that they often work poorly or inconsistently.

The analysis contends that to reach key objectives under digital education, no less than three correlated shifts are needed. To begin with, curricula and digital environments should be developed on the basis of a detailed granular description of competencies and formative assessment items which focus on reasoning and problem-solving. Second, teachers should be empowered through ongoing professional development to adapt connections, mediated by digital technologies, between inquiry and reflection to the specificity (and singularity) of their own classroom. Three equity-informed approaches (blended learning, offline digital content) could be mandated in order to prevent a worsening of exclusion for learners in low connectivity settings.

This article attends to debates around ICTs for education reform in the global South through the synthesis of policy analysis with its literature. It also notes the importance of pedagogical coherence, rather than technological scale, as well as institutional capacity to succeed in a reformed digitalised learning environment. “NCF 2023, which is about how ‘Move on greener pastures in education’ cannot but ask that questions but within the frameworks of some kind of structures and processes informed by a spirit of rechannelling an ethical mood that emanates from a competence stance. That’s what we are going to get with this policy.” For higher education researchers, this research suggests the need for empirical evidence of in-class student impacts over time with various digital pedagogies on students’ critical thinking abilities.

In sum, what the restructuring of Indian education for a post-NCF 2023 era would entail is a shift from digital scale to digital depth. Carefully planned within strong curricula and pedagogies, digital learning can help to develop critically engaged learners who can work with complexity, interrogate evidence and contribute responsibly to a fast-moving world.

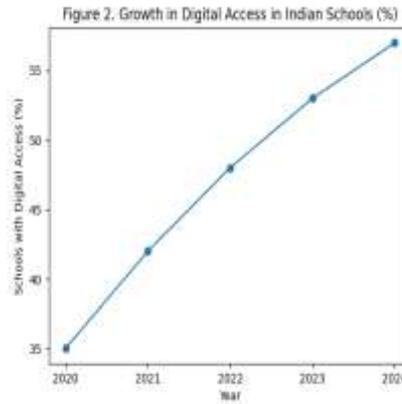
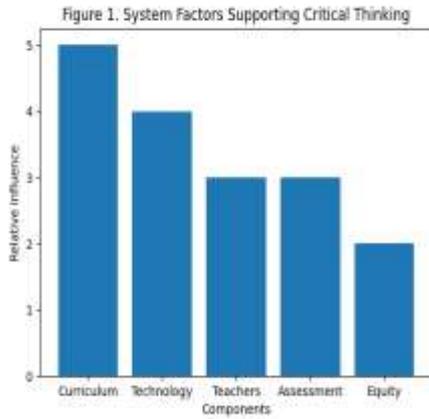


Table 1. Alignment of NCF 2023 with Digital Learning and Critical Thinking

NCF 2023 Focus Area	Digital Learning Implication	Critical Thinking Outcome
Competency-based curriculum	Inquiry-oriented digital content	Problem-solving and reasoning
Experiential learning	Project-based digital tasks	Application of knowledge
Formative assessment	Digital feedback tools	Metacognitive awareness
Teacher agency	Communities of practice	Reflective pedagogy

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