



TOWARDS A NEW RESEARCH PARADIGM IN INDIAN EDUCATION: THE TRANSFORMATIVE VISION OF NEP 2020

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ABSTRACT

Educational research in India is in the middle of a major shift. New theories, digital tools, and the National Education Policy 2020 (NEP 2020) are all pushing things in new directions. In the past, most research here focused on numbers—quantitative stuff. Now, more work looks at power, capability, and how institutions really work. This paper places NEP 2020 in a bigger intellectual context, drawing on thinkers like Kuhn, Bourdieu, Foucault, Bernstein, and Sen. By analyzing policy documents and national data (AISHE, 2022; Pratham, 2023), the study argues that NEP 2020 is not just another policy update. It's a deep shift in who gets to decide what counts as real knowledge in Indian education. But the road isn't smooth. Old inequalities, new digital challenges, and big differences between institutions make these changes tough to implement. If India wants real transformation, research, rules, and fairness all have to work together.

This analysis centers on a few big questions:

- 1. How does NEP 2020 change the way knowledge, institutions, and capabilities are shaped in Indian education?*
- 2. How do old power structures and new digital systems shape what happens with NEP 2020 in practice?*
- 3. What do these changes mean for equity, teacher power, and who gets access to knowledge in Indian schools and colleges?*

1. INTRODUCTION

1.1. Educational Research as a Field of Power

The National Education Policy enacted in 2020 is changing the way schools operate in India. It's not only about moving away from rote memorisation—currently, there is a strong drive for students to truly grasp the material they are studying and acquire skills that are applicable in everyday life (Govt. of India, 2020). However, there is more involved than only new teaching methods. This approach is really an effort to break away from outdated frameworks that have held back equal access and blocked social mobility, especially in schools where inequality runs deep (Sen, 1999; Bourdieu, 1986).

One of the major changes is the transition away from the traditional 10+2 framework to a new 5+3+3+4 setup. This modification aligns better with how children develop and acquire knowledge, particularly in the early stages, and allows for greater emphasis on playful, tactile, and learning through experience (as per Government of India, 2020; NCERT, 2021). With an emphasis on developing fundamental literacy and numeracy from the very beginning, the policy aims to equalize opportunities ahead of differences between students widening excessively (NITI Aayog, 2021).

However, the National Education Policy 2020 isn't just about changing frameworks. Schools are encouraged to look past exam results and notice the different ways students can do well (Government of India, 2020). There is a strong focus on blending topics and broadening the definition of success. Rather than only large, anxiety-inducing tests, the policy seeks continuous feedback and evaluations that evaluate students' real abilities (UGC, 2022). Besides academic skills, the policy emphasizes the significance of social and life skills, so that school seems more linked to the real world and less like a place focused solely on exams (Biesta, 2010).

Naturally, bringing all this to fruition is not easy. The technology gap remains a reality—many students and educational institutions lack sufficient technology to stay current (according to UNICEF India, 2022, and the World Bank, 2021). Providing each child within such a vast and diverse nation an equal opportunity to succeed in quality evaluations



is challenging. Educators require as well significant additional training and assistance to modify their teaching methods (Das & Mohanty, 2022). Government initiatives and recent structures are intervening, aiming to assist through improved resources, digital tools, and more efficient methods to monitor progress (Govt. of India, 2020).

In the midst of everything, the research presents a model for AI-driven educational transformation. It considers the effectiveness of NEP 2020 based on the standard of AI management and the condition of the digital infrastructure. This link is influenced by the preparedness of schools and the extent to which they modify their teaching, plus the local social and economic environment. It represents a model that is consistent with worldwide tendencies—there is widespread discussion about applying data to promote meaningful transformation in educational contexts (OECD, 2020; Luckin et al., 2016).

1.2. Curriculum, Classification, and Pedagogic Control

Bernstein's theory is pretty handy for sorting through all these changes in the curriculum. He talks about "classification"—how tightly subjects are kept apart—and "framing," which deals with who actually runs the show in the classroom. In old-school Indian schools, subjects were walled off from each other, and teachers called all the shots. Now, NEP 2020 is starting to soften those divisions. The new direction is all about flexible learning and sharing classroom authority.

This push for multidisciplinary education is breaking down barriers. Students and teachers are stepping into new fields, and things like flexible undergrad programs and the Academic Bank of Credits are shaking up the old hierarchy. When you blur these lines, though, it gets messy. Institutions with deep traditions aren't always onboard; people who feel strongly connected to their discipline don't want to see the boundaries disappear. The Culture around Systemic Change Survey captures reactions from faculty and staff, revealing just how tricky it is to actually make interdisciplinary education work—especially in the science departments that have been around forever.

Education framing is shifting, too. Competency-based models and AI-powered platforms are letting students set their own pace, taking some control away from teachers. Foucault might remind us: just because the control isn't obvious now doesn't mean it's vanished. Digital platforms collect a ton of behavioral data, changing what oversight looks like. Governance hasn't disappeared—it's just moved from exam halls into algorithm dashboards.

1.3. Capability, Equity, and Multilingual Reform

Amartya Sen's capability approach turns old ideas about development upside down. It's not about stockpiling resources—it's about expanding real freedoms. In education, that means we should care less about how many kids are enrolled or how many degrees are awarded and more about whether students actually get a shot at the kinds of lives they value.

The NEP focuses on foundational literacy, teaching in multiple languages, and life skills. In theory, that's broadening what students can genuinely do (Government of India, 2020). But, capability depends on whether social, economic, and institutional factors let people turn those resources into actual freedom. ASER's latest findings (Pratham, 2023) show learning is still uneven—digital access is patchy and often mirrors old inequalities (Chakrabarti & Sanyal, 2017). So, even strong policy doesn't always deliver for everyone.

Bourdieu's take adds layers. Teaching in a child's mother tongue helps learning—Vygotsky said it decades ago—but languages with real power in higher ed and jobs still dominate. Multilingual reforms have to balance recognition with fairness.

1.4. Digitalisation, Algorithmic Authority, and Epistemic Reordering

Going digital changes power and knowledge in ways we're only beginning to notice. AI-driven systems shape how students are taught, with algorithms making choices about what and how they learn—call it algorithmic pedagogy.

AI gets used in three main ways:

1. Directive AI: Students mostly just do what the algorithm says. It's efficient, but they have little say.
2. Interactive AI: There's some back-and-forth—students give input, get feedback. More engagement, but still guided.
3. Agentic AI: Here, students really drive their learning and AI is a helper, not a boss.

These approaches tie back to Bernstein's ideas about control in learning. But all this technology creates new ways to keep tabs on students. Selwyn (2016) notes these systems often come loaded with assumptions about what



matters. If the workings aren't transparent, AI can end up concentrating power instead of sharing it.

India's digital push aims to reach more people and cover more languages (Government of India, 2020), but scaling up presents challenges. Ethical oversight needs to tackle privacy, bias, and transparency. If people don't understand how decisions get made, holding someone accountable is tough.

1.5. Institutional Restructuring and Organisational Logic

AISHE (2022) shows higher education enrollment is on the rise. NEP wants to bring scattered institutions together, creating multidisciplinary environments. From a Bourdieusian view, this reshuffling changes who has influence—some fields get a boost, others risk being left behind.

Varghese (2015) highlights the tension between university autonomy and state control. Some universities slap on "multidisciplinary" labels but barely change their practices. Real change needs more than new structures; it needs a culture shift.

The National Research Foundation (Government of India, 2020) plans to centralize research funding and boost research culture. Its success depends on avoiding political meddling and spreading resources fairly.

1.6. Professional Agency and Reflexivity

Teacher education still faces stubborn hurdles that block its transformative promise. Pandey (2019) points out the shortage of research training for educators. When teachers aren't equipped in research methods, their ability to push for real reforms is limited. A Foucauldian lens shows teacher agency isn't just about personal motivation—it's shaped by the way policies construct and position teachers. This creates a paradox: policies promote innovation and creative teaching, yet demand more accountability, surveillance, and compliance. Teachers end up stuck between trying to innovate and feeling compelled to follow rigid standards. True professional growth needs institutions to trust teachers and give them time to reflect critically on their practice. Otherwise, all the talk of reform just stays at the surface, never cutting through the realities of compliance-heavy work.

2. INNOVATIONS IN EDUCATIONAL RESEARCH: RECENT DEVELOPMENTS

2.1. Artificial Intelligence-Driven Adaptive Assessment

Educational research is leaning into AI to move past fixed testing models. Adaptive systems adjust question difficulty in real time, tracking learner skills more precisely and lowering test anxiety (Heffernan & Heffernan, 2014). The ASSISTments platform, for example, uses machine learning to tweak future tasks based on how students perform, building detailed learner profiles that guide personalized instruction. This goes past the limits of formative assessment, creating feedback loops powered by data—helping researchers understand cognitive growth and craft targeted interventions.

2.2. Learning Analytics for Predictive Modeling and Equity Monitoring

Learning analytics is changing research from just describing outcomes to predicting them. It gathers behavioral and performance data to flag at-risk students, predict dropouts, and measure teaching effectiveness. Siemens and Baker (2012) note how clickstream data can forecast performance and drive interventions. Researchers use these tools not only to improve teaching, but to spot equity gaps—like engagement differences by socioeconomic status—so the focus expands to justice-oriented outcomes.

2.3. Blockchain for Credentialing and Academic Integrity

Blockchain's making waves in education as a fix for verification, portability, and trust in credentials. Decentralized ledgers provide tamper-proof records, opening doors for research into micro-credentials, portfolios, and verifiable lifelong learning. Studies on Ethereum-based micro-credential platforms show blockchain can break down barriers in professional certification (Sharples & Domingue, 2016). Early research is digging into how blockchain shifts power among learners, institutions, and employers—where tech literally reshapes who controls knowledge.

2.4. Neuroscientific Methods and Neuroeducation Correlates

Advances in neuroeducation are blending cognitive neuroscience tools with real classroom studies to reveal the brain's role in learning. Tools like NIRS and EEG track attention, memory, and concept learning in real time (Howard et



al., 2019). For example, EEG studies on problem solving link brain patterns to cognitive load and learning transfer, giving instruction designers concrete evidence. These shifts push the field towards biological and cognitive frameworks, redefining what it means to teach.

2.5. Multimodal Learning Analytics and Embodied Cognition

New studies highlight multimodal learning analytics, capturing physical movements, gestures, speech, and emotions. Combining eye tracking, motion capture, and facial analysis lets researchers explore dimensions regular test scores miss (Ochoa & Worsley, 2016). For example, studies on gesture-speech synchrony during math problem solving link non-verbal actions with concept understanding, opening fresh ways to see how meaning gets built. These methods widen research techniques and push past simple divides between thought, emotion, and the body.

2.6. Participatory and Co-Design Research with Learners and Teachers

A big innovation is participatory approaches that treat learners and teachers as research partners—not just subjects. Co-design, rooted in design research and critical education, involves stakeholders in every step: defining problems, analyzing data, and refining practice. Research in participatory classroom tool design (Luckin et al., 2016) shows how practitioners' expertise and local knowledge matter. This approach pulls power from researchers, producing findings that fit local contexts and still offer theoretical insights. It nudges educational research toward a more liberated, practical direction.

2.7. Open Science and Reliability Initiatives

Educational research is tackling big questions about reliability by adopting open science practices. Pre-registering studies, sharing data, and using registered reports helps boost transparency and build solid knowledge. The Learning and Instruction Pre-Registration Initiative (LIPI), for instance, sets protocols to prevent cherry-picking results and encourages reporting null outcomes (Nosek et al., 2018). These moves mark a shift toward methodological responsibility—helping education research meet global standards for rigor and reliability.

3. METHODOLOGICAL ORIENTATION

This study takes a pragmatic-interpretive approach—blending qualitative synthesis with policy analysis. The PRISMA 2020 framework shaped document selection for transparency and reliability.

3.1. Data Selection (PRISMA Process)

Initial searches across academia and policy repositories turned up 90 documents. After removing duplicates, 80 records were left. Screening for relevance to NEP 2020 cut it to 50 documents. Full-text review landed a final sample of 30: a mix of policy docs, national datasets, and peer-reviewed studies (ASER Centre, 2023; AISHE, 2022).

3.2. Coding and Analysis

Data analysis unfolded in three stages. Open coding surfaced basic categories—assessment reform, digital access, and institutional restructuring. Axial coding grouped these into bigger clusters, while selective coding pinpointed four main themes: assessment transformation, digital inequality, multilingual access, and institutional restructuring.

This back-and-forth coding gave depth and kept the analysis tied to the evidence. Still, relying on secondary data means missing direct observation of classrooms and institutions, so some realities might be underrepresented. The coding framework boosts transparency, but interpretive bias isn't fully erased—especially when aligning categories with theory. Manual coding deepened engagement but may have held back scalability compared to software-assisted methods.

4. CONCEPTUAL-THEORETICAL FRAMEWORK MODEL

The model puts educational capability outcomes at the center—covering both achievement and equity. It pulls together structural, discursive, and capability-driven angles for a testable framework, examining how tech interventions interact with institutional and social forces to shape educational change in India.

The study uses five key theoretical constructs:

1. **Paradigm Theory (Kuhn):** This lens captures the broad shift in educational thinking—from traditional, measurement-centred approaches to more open, interdisciplinary, pluralistic ways of understanding knowledge.

2. **Power–Knowledge (Foucault):** Focuses on how exams, digital platforms, and policy shape people in the system—determining what they think and do.
3. **Cultural Capital and Field Theory (Bourdieu):** Helps unpack how reforms like multilingualism and interdisciplinarity bump up against deep social hierarchies, sometimes reinforcing or reshuffling who benefits.
4. **Pedagogic Discourse (Bernstein):** Tracks shifting boundaries between disciplines and changes in classroom control, highlighting how curricula and communication are being redefined.
5. **Capability Approach (Sen):** Looks at whether reforms actually expand real freedoms and opportunities—beyond just offering access or credentials.

4.1. Integrated Model Structure

Level 1: Epistemic Shift

There's a move from measurement-based knowledge to capability-centred, interdisciplinary perspectives.

Level 2: Power Structures

Power shifts away from old exam-driven control and surveillance to algorithmic governance and models that value shared authority and participation.

Level 3: Institutional Mediation

Examines how teacher skills, infrastructure, and institutional autonomy work together.

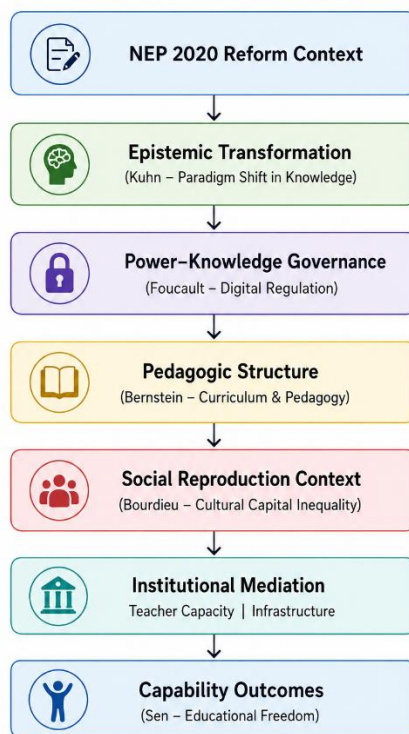
Level 4: Capability Outcomes

Frames outcomes in terms of foundational literacy, language inclusion, digital empowerment, and better employability.

Overall, the model claims that NEP's bigger dreams only happen when shifts in how we know things (Level 1) align with fair power systems (Level 2), strong institutional support (Level 3), and equal opportunities (Level 4).

4.2. Conceptual Framework Diagram (Text Structure)

Flow Chart – 1
Conceptual Framework Diagram





4.3. Conceptual Proposition of the Study

The framework proposes that educational transformation under NEP 2020 occurs when epistemic change interacts with institutional capacity and equitable governance structures. When these elements remain misaligned, reform may reproduce existing inequalities despite progressive policy design.

4.4. Synthesis

NEP 2020 represents a significant departure from historically rigid educational structures, signaling a move towards greater flexibility and pluralism. However, deep-seated inertia, persistent digital divides, and enduring social hierarchies continue to impede the realization of these goals. Educational research, therefore, must play a dual role: diagnosing the realities of implementation and envisioning pathways for normative change.

Paradigm shifts in education are never just about adopting new tools or methods; they entail a fundamental reconfiguration of what is recognized as legitimate knowledge and who holds the authority to define it. Whether NEP 2020 catalyzes genuine democratization or simply reinforces existing inequities will depend on the architecture of governance, the ethical conduct of institutional actors, and an ongoing commitment to rigorous research and critical self-examination.

5. POLICY RECOMMENDATIONS FOR IMPLEMENTATION

If we truly desire artificially intelligent systems to transform education positively, high-minded policy discussions are insufficient. We must have explicit and enforceable regulations regarding how educational institutions and others employ these tools. That begins on the ground, with real oversight. Educational institutions ought to establish mechanisms to regularly review and monitor their artificial intelligence tools, not only to verify if the technology functions but also to explore more profound issues—like, which premises are embedded in these algorithms? Are they equitable? And can we figure out what's really going on under the hood? Nothing here is possible in the absence of genuine transparency. Educational institutions must understand the way these models were constructed, what data went in, and the reasons the system produces specific outcomes. Failing that, Artificial intelligence could eventually decide behind the scenes, influencing educational settings without any responsibility.

Bias and fairness can't be afterthoughts, either. We have to test AI tools with lots of different students—across languages, regions, and backgrounds—to catch unfair outcomes early. Even with the best intentions, these systems can repeat old patterns of inequality if the data or logic are flawed. That's why audits need to check for fairness on a regular basis and compare who wins and losses under the system. We shouldn't measure success just by technical accuracy but by whether the AI's decisions fit solid educational standards and judgment. And let's be honest—human review isn't just a backup; it's a permanent, necessary part of the process.

Looking beyond individual schools, we need big-picture rules, too. A national registry that lists all the AI systems in use—what they do, what data they use, how risky they are—could help policymakers and researchers actually understand how AI functions in education as a whole. It would also let us track long-term effects. But we can't just file paperwork and call it done. Real rules mean keeping human oversight in every decision that matters, especially when it comes to grading or moving students ahead. If we hand over all that power to machines, we lose what makes education flexible and human.

For any of this to work, teachers and staff need to know how AI operates. Training can't just be about clicking buttons or following scripts. Educators have to grasp how these systems function, where they fail, and how they relate to teaching goals. Professional development needs to focus on data literacy, ethics, and big-picture thinking about how AI shapes education. Otherwise, we risk slapping new tech onto old routines without making real progress.

Handling student data responsibly is another hurdle. AI relies on loads of data, much of it personal and sensitive. That raises tough questions—who actually owns this data, and how long can institutions keep it? Schools need strict, clear rules: gather only what they must, anonymise wherever possible, and lock down storage securely. Off-the-shelf privacy policies aren't enough; education needs its own data governance standards that recognise how vulnerable students are.

One thing we can't ignore is equity. Spreading technology around doesn't automatically make schools fairer. In fact, if we're not careful, AI could deepen gaps—especially where there's weak internet, few devices, or limited digital skills. Closing these divides demands real investment in the areas and communities that tend to get left behind. Language matters too. AI interfaces need to support India's full range of languages, not force everyone to fit some generic mould.



Rolling out AI in education isn't a one-time fix. It's a process that keeps changing. We need ways for teachers and students to give feedback and flag problems as they come up, so the system can adapt. This is extra important because technology just doesn't stand still.

Last but not least, there's a strong case for making educational technology more of a public good. Depending on private, black-box platforms limit transparency and puts institutional control at risk. Building open-source AI systems—through partnerships among universities, research institutes, and public agencies—provides an improved approach. It maintains innovation transparently and connects it with public aims and responsibilities. Ultimately, embedding AI within educational systems means reconsidering how we create, share, and govern knowledge—rather than merely adding a new tool.

6. CONCLUSION

Addressing educational reform in India proves difficult without looking at the wider context—questions about who may access education, those who decide what matters, and individuals who actually are admitted. The National Education Policy 2020 goes big on concepts such as adaptable education, removing disciplinary boundaries, and focusing on what student's need as individuals. Certainly, it's grounded on the most recent studies. However, once you move beyond the vision and begin working with actual schools and colleges, you encounter obstacles—what happens in practice does not always conform to the provisions set out in policy documents. Administrative obstacles, social and financial disparities, and resource shortages influence how change appears, regardless of the guidelines' ambition.

Thinkers such as Thomas Kuhn highlight that once you begin to talk about paradigm shifts, you are not depicting a gradual change. Transformation involves disturbance and considerable resistance. Established routines and frameworks resist change stubbornly, and merely exchanging models in theory doesn't mean daily practice flips overnight. And if you listen to Bourdieu, the problem runs deeper. Power, privilege, and the way resources are distributed shape everything. So, changes that appear innovative or daring can end up protecting advantage instead of breaking it down, unless they focus explicitly on the fundamental disparities. You see that clearly with things like digital resources—if some students are barely online or lack support, buzzwords don't fix that.

Michel Foucault, as usual, takes it in another direction. His angle on power and knowledge suggests reforms usually arrive with their own forms of control. Bringing digital platforms or AI into classrooms isn't just about efficiency; it hands over a lot of influence to administrative systems and creates new routines. Data starts making the decisions—who is acquiring knowledge, how well, what gets tweaked—and that's power in a very modern wrapper. Indeed, you receive fresh tools and opportunities, although there is added scrutiny, additional measurements, and possibly less room for actual teaching.

So, when you look at the moral or normative side, Amartya Sen's capabilities approach comes in. It's not enough to give people resources; you have to make sure reforms actually open new doors for students and help them do more with their lives. Policies like offering education in several languages or letting students shape their own learning paths could really change things, but only if they're real and flexible in everyday reality, not just in official announcements.

National datasets keep bringing us back to the basics: policy means nothing if infrastructure, day-to-day governance, and what actually happens in classrooms aren't pulling in the same direction. AI and digital tools have real potential for innovation—but only if schools are ready, and students and teachers all have access and know how to use them. And you can't ignore teachers themselves; their beliefs, training, and support will make or break any reform, no matter how visionary.

This study tries to bridge ideas and reality, making sense of how NEP 2020's vision might play out. It connects the dots from big goals to measurable change, tracking what helps and what gets in the way. But you have to recognize the limits—a document review only gets you so far, and until you talk to people on the ground and watch what happens over time, you're always missing important pieces. The real work needs field visits, long-term tracking, and some hard data.

The insight of education reform here is messy, never neat or automatic. Any serious progress means dealing with the constant push and pull between policy dreams and the complex reality inside institutions. NEP 2020 opens a path for reimagining education, but everything hangs on how those ideas play out in the messiness of real life—whether reforms listen to context, recognize inequality, and stay open to feedback. Digital tech and AI won't guarantee good outcomes by themselves. If you manage them well, with transparency and a firm eye on equality, they can spark real change. If not, they just make old divisions worse. That's the heart of it—it's not just "let's innovate," but "how do we set things up so



innovation actually means learning for everyone?"

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