

AI as a catalyst for education delivery



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Foreword



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Chairman
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Artificial Intelligence is set to be the defining force of the 21st century, and its influence on education is both inevitable and immense. As India aspires to build a future-ready education ecosystem, it becomes imperative to explore how AI can be integrated thoughtfully to improve learning outcomes, bridge equity gaps, and empower educators.

This report comes at a critical juncture. It explores not just the transformative potential of AI in education, but also the risks it poses including bias, data privacy, ethical misuse, along with the urgency to establish responsible frameworks. It provides a timely roadmap on how we can navigate these challenges and create scalable, ethical AI governance models aligned with our national priorities and values. We must ascertain that our approach to AI in education is inclusive, context-sensitive, and rooted in equity. It is also vital that educators, students, policymakers, and industry work together to define how AI can serve human development rather than replace it.

This report provides comprehensive and forward-thinking analysis and offers practical recommendations that can help us realize the full potential of AI while safeguarding the integrity of education—our most powerful tool for social transformation.



Vikas Aggarwal

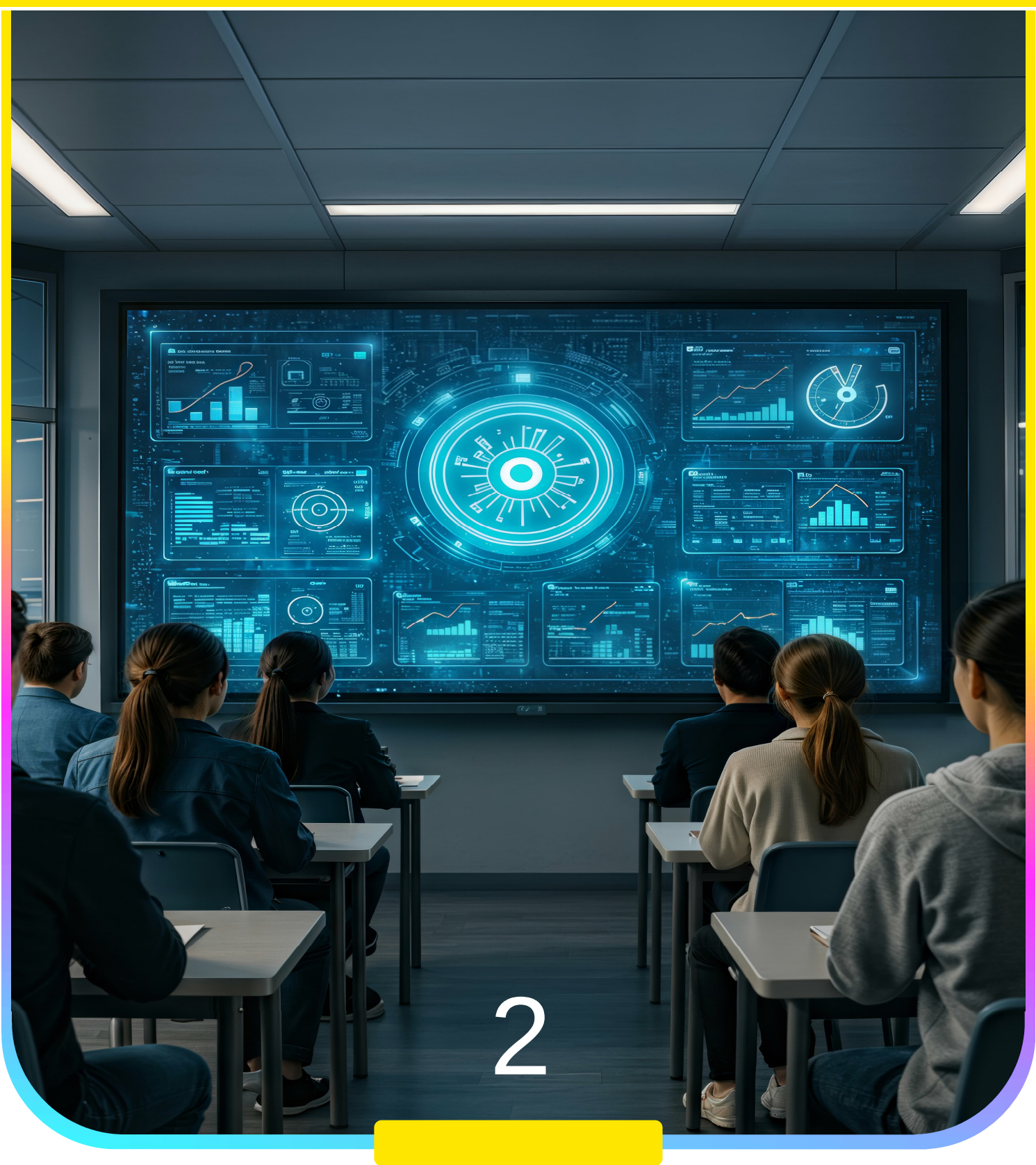
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As India advances with determination toward the vision of Viksit Bharat @2047, AI stands at the forefront of national transformation, not merely as a technological milestone, but as a defining force in reimagining our education system. It presents a unique opportunity to build an education system that is future-ready, inclusive, and grounded in equity. But with this opportunity comes the responsibility to embed AI ethically, strategically, and at scale.

AI is already beginning to reshape how learning is designed, delivered, and experienced. From personalising classroom instruction to improving accessibility in remote regions, its potential is immense. The AI paradigm shift is opening new pathways across geographies in education, particularly in regions like Eastern and North-Eastern India where capacity-building, infrastructure support, and innovation scaling are vital. But meaningful transformation demands investment in connectivity, access to devices, and localised, multilingual AI tools, such as voice-enabled and low-bandwidth applications. This transformation requires collective action.

Educators, industry, government, and civil society are already collaborating in various ways, and this momentum can be strengthened through platforms like a national EdTech consortium to set standards, support teachers, and co-create solutions. This potential must be harnessed responsibly. The integration of AI in education must be visionary, ethical, and firmly aligned with public interest. Fragmented experimentation must now give way to strategic, system-wide adoption, guided by robust governance frameworks such as the National Digital Education Architecture (NDEAR) and the Digital Personal Data Protection Act.

This report offers a timely perspective on India's AI journey in education, not as a mere technology upgrade, but as a catalyst for equity, inclusion, and systemic reform. With the right choices, AI can help unlock the full potential of every learner and educator in a truly empowered India.



2

Executive summary

Artificial Intelligence (AI) is revolutionizing the landscape of education delivery, revealing transformative possibilities across school education, higher education, and vocational training. This collaborative report by EY and ASSOCHAM highlights AI's crucial role in creating a more equitable, excellent, and future-ready education system in India, supporting the national goal of Viksit Bharat@2047.

While challenges such as digital divides and ethical concerns persist, AI offers tangible opportunities to personalize learning experiences, automate routine tasks, empower educators, and enhance access for diverse geographies and learner demographics. Through thoughtful integration, India can evolve from conventional educational frameworks to more adaptive, inclusive, and intelligent learning ecosystems.

Key highlights from the report



School education

AI is supporting adaptive learning, early interventions, and personalized teaching tools. Case studies, such as the CBSE AI Curriculum and Kerala's KITE pilot, underscore scalable models for integrating AI in classrooms. The Eastern and North-Eastern regions offer unique opportunities to use AI for vernacular learning and low-tech accessibility.



Higher education

Institutions are leveraging AI for admissions, predictive analytics, and student support services. Examples like IIT Madras' personalized MOOCs and Singapore's NUS AI Strategy demonstrate global benchmarks. Eastern institutions like Jadavpur University and IIM Shillong can benefit from capacity-building and AI+X interdisciplinary programs.



Skilling and vocational training

AI is helping personalize skill development and job matching, especially for India's youth and informal workforce. Platforms like NSDC's Skill India Digital Hub exemplify how AI can drive employment linkages. Targeted interventions in underserved Eastern states can bridge skills gaps at scale.



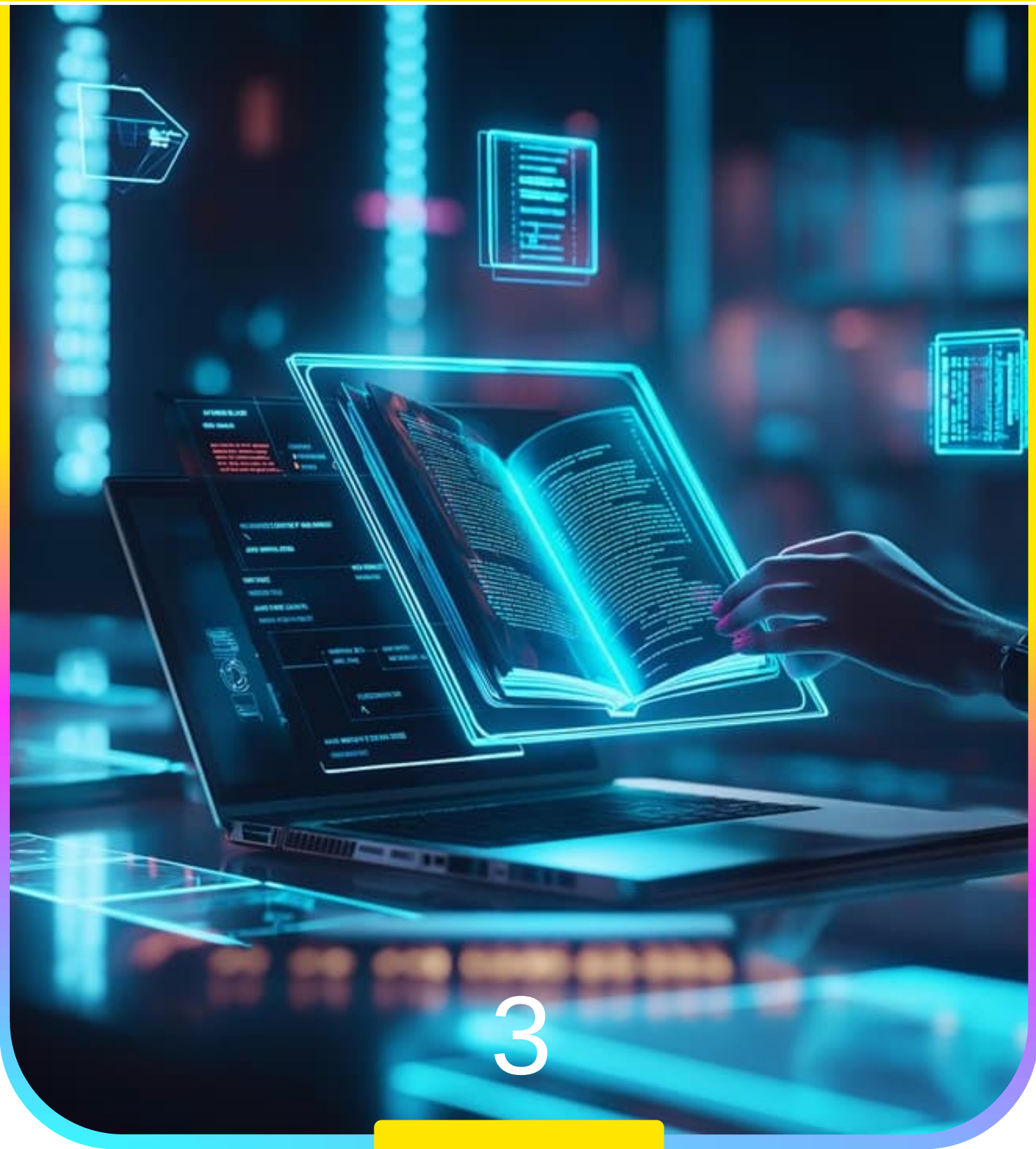
AI risks and ethical use

The report outlines privacy, surveillance, and bias concerns. It advocates for ethical AI use, transparency, and localized policy frameworks. The UNESCO and NITI Aayog guidelines offer foundational principles for responsible adoption.



Strategic actions

A set of actionable, sector-specific recommendations are provided, ranging from regional AI CoEs and curriculum reforms to grassroots pilots and AI readiness indices. The roadmap aligns with Viksit Bharat@2047, positioning AI not as an add-on, but as a strategic lever to make inclusive, equitable, and future-facing education accessible for all.



3

Unlocking AI's transformative potential in education

The integration of AI in education must serve dual objectives: improving educational delivery and ensuring that learners are empowered to navigate AI tools responsibly and with confidence.

1 Unlocking the transformative potential of AI in education

When thoughtfully implemented, AI has the power to significantly enhance education systems by:

- Personalizing learning experiences to meet diverse student needs
- Empowering teachers with intelligent tools that boost productivity and instructional quality
- Streamlining administrative processes, enabling institutions to operate more efficiently

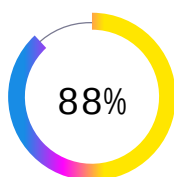
This effort brings the entire ecosystem together effectively and efficiently to enhance learning outcomes of students.

2 Building future-ready learners

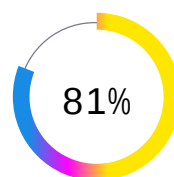
Embedding AI education from an early age is essential to:

- Foster AI literacy across future workforces
- Develop critical skills and competencies in AI technologies
- Equip students to engage with AI tools safely, ethically, and responsibly

However, findings from a recent US-based survey of parents with Gen Alpha and Gen Z children indicate that¹:



of parents see AI as a crucial
component of their children's
education



of parents doubt whether AI is currently
integrated into their children's
curriculum

¹ <https://news.samsung.com/us/88-percent-us-parents-gen-alpha-gen-z-students-say-ai-crucial-to-childs-future-success-samsung-solve-for-tomorrow/>



How can we position AI as a catalyst for equitable and improved education outcomes globally?



Artificial intelligence can be a catalyst for faster progress toward achieving SDG 4—inclusive and equitable quality education and lifelong learning opportunities for everyone.

1 For multilateral actors invested in systemic transformation, AI can serve as a scalable enabler to bridge critical equity gaps across the education ecosystem. In K–12 education, AI-powered tools can help mitigate teacher shortages, enhance instructional delivery, and alleviate administrative burdens—particularly in low-resource settings. In higher education, AI-driven models offer cost-efficient avenues to expand access to flexible, remote learning, especially for marginalized populations and regions facing infrastructure constraints.²

2 Realizing this potential, however, necessitates a responsible, rights-based approach to adoption that prioritizes learners, upholds academic integrity, and ensures ethical, transparent data use.

3 As stewards of global cooperation and development finance, multilateral organizations are uniquely positioned to shape policy frameworks, convene cross-sector collaboration, and identify that AI advances do not deepen digital divides, but instead foster inclusive, future-ready learning ecosystems.³



2. OECD: [potential impact of Artificial Intelligence on equity and inclusion in education](#) (EN);

3. Global Trends in AI Governance: [Evolving:](#)

<https://documents1.worldbank.org/curated/en/099120224205026271/pdf/P1786161ad76ca0ae1ba3b1558ca4ff88ba.pdf>



AI in school education: Laying the foundation for intelligent classrooms

1 Where schools stand with respect to AI

Artificial Intelligence (AI) is gaining significant ground in K–12 education globally, with India witnessing a gradual but visible shift, especially in private schools and select government-led pilots. While some institutions are embedding AI in assessments and planning, others are still experimenting or lack the digital infrastructure required.

According to the EdWeek Research Center (2023)⁴, nearly half of K–12 teachers in the U.S. are already using AI tools for basic instructional tasks. These insights, reveal:

- 49% of teachers use AI for quiz generation
- 48% for grading
- 37% for lesson planning

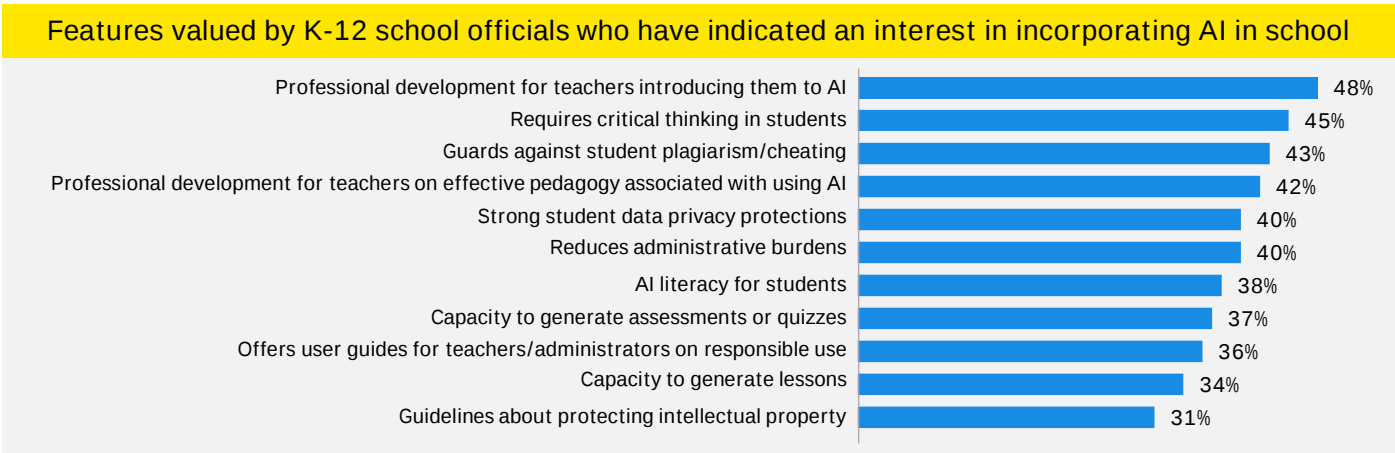


Figure: Teacher-level AI usage for core instructional functions in U.S.
Source: EdWeek Research (2023)

2 What AI can enable in schools

AI in K–12 education promises significant uplift across content, pedagogy, assessment, and inclusion⁵. Key opportunity areas include:



Personalized learning paths
Adaptive learning tools tailor content to each child's pace and performance



Assessment automation
Auto-grading and feedback tools speed up teacher workflows and reduce subjectivity..



Learning gap analytics
Early warning systems enable proactive tools to identify students at risk of falling behind academically, disengaging in class, dropping off, or not graduating in time.

4. EdWeek Research Center, (2023) – Teachers and AI: Use Cases in the Classroom: <https://www.edweek.org/technology/teachers-are-using-ai-tools-and-these-are-their-favorites/2023/05>
5. (ICRIER Policy Brief, 2022) – AI Curriculum Outline Grades VI–XIII in School Education: https://icrier.org/pdf/AI_in_School_Education.pdf



Teacher support tools

AI-driven planning assistants and content generators simplify lesson prep.



Holistic learning

AI chatbots and games help integrate social-emotional learning.



Digital divide in North-East India:

Unified District Information System for Education Plus (UDISE+) data shows that less than 25% of schools in states like Arunachal Pradesh and Meghalaya have internet access, with similarly low computer availability. This limited digital infrastructure restricts equitable access to AI-driven education in the region^{6,7,8}.



Regional language content on DIKSHA:

DIKSHA usage indicates Assamese content makes up about 3%–5% of total consumption, while Bodo content is under 1%, reflecting the scarcity of vernacular AI resources and the need for localized educational content^{9,10}.

3 National and global use cases

Initiative / Institution		Brief description	Impact / focus area
CBSE AI Curriculum (Grades VI–XII)		Developed with global IT majors, this aims to improve AI awareness and responsible use among youth	Early AI literacy, ethical awareness
Kerala – KITE AI Learning Pilot ¹¹		Over 200 public schools use AI platforms for adaptive multilingual content delivery	Content personalization, remote student inclusion
Rajasthan – Mission Buniyaad and Mindspark ¹²		AI-based diagnostics and targeted remediation in foundational literacy and numeracy	Learning recovery post-COVID
Khanmigo – Khan Academy (US) ¹³		Socratic AI assistant supports learning and provides teachers with classroom insights	Higher student engagement, formative feedback
GIGA School (Japan) ¹⁴		National-level initiative ensures 1 device per student and integrates AI-based apps	Digital equity, inclusive content design

4 Spotlight on Eastern and North-Eastern India

Eastern and North-Eastern parts of India represent both a challenge and an opportunity. While infrastructure is uneven, several digital learning pilots exist under DIKSHA and PM e-Vidya.

Tailored AI possibilities:

- Language localization: NLP-backed translation in Assamese, Bengali, and tribal dialects. Tripura has adopted state-of-the-art text-to-speech AI technology under the BHASHINI initiative¹⁵ which holds significant potential for integration into mainstream education systems
- Low-tech chatbots: For low-connectivity environments (social media, IVR-based AI tutors)
- AI-based teacher training: Micro-PD tools for contextual lesson planning and assessments
- Cross-state pilots: States can replicate Kerala and Rajasthan's public AI learning models

6. DEF India, 2023: Digital Connectivity in North-East India - <https://www.defindia.org/north-east-development-foundation/#:-:text=DEF%20believes%20in%20a%20multi,being%20conserved%20using%20digital%20tools>

7. UDISE+ Report 2022-23: UDISE+ Booklet

8. Education for All in India, 2024: UDISE+ Analysis

9. DIKSHA Portal: <https://diksha.gov.in>

10. Mim et al., 2023; Narzary et al., 2022 – NLP Research on Bodo and Assamese (academic sources)

11. (Kerala KITE, 2023) – KITE ICT & AI Pilot Program: <https://kite.kerala.gov.in>

12. (Brookings Institution, 2022) – Mission Buniyaad: Adaptive Learning in Rajasthan: <https://www.brookings.edu/articles/personalized-learning-in-india/>

13. (Khan Academy, 2023) – Khanmigo AI Tutor Tool: <https://www.khanacademy.org>

14. [GIGA School, Japan] - <https://giga.global/>

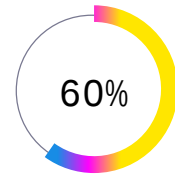
15. <https://indianexpress.com/article/india/tripura-bhashini-initiative-digital-inclusion-north-east-9804447/>

Reimagining higher education in the age of intelligence

1 Current landscape and emerging trends

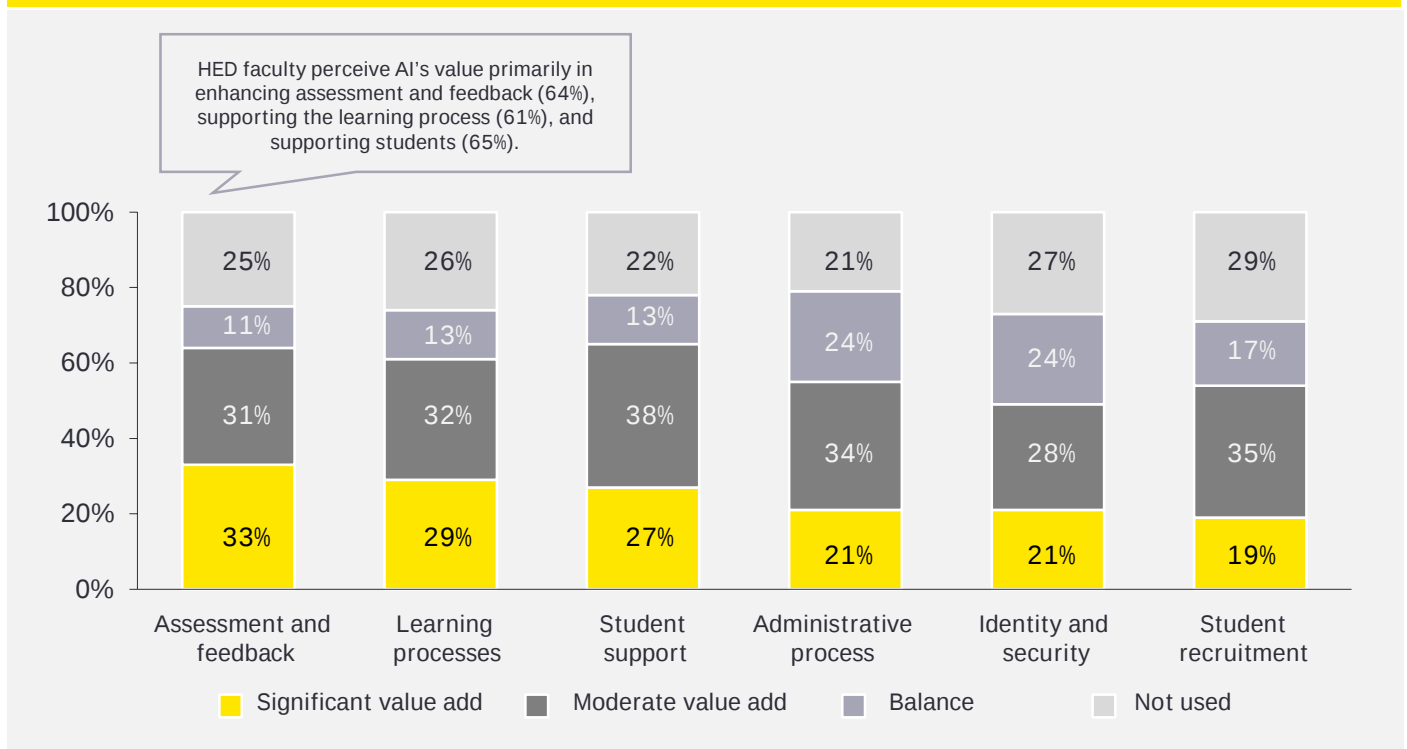
Artificial Intelligence (AI) is rapidly transforming how universities operate, teach, and support learners. Globally, institutions are embedding AI into academic services, campus operations, and research functions. In India, AI integration is being nudged through NEP 2020 and UGC's evolving guidelines for digital education and autonomy.

Higher Education Department (HED) faculty recognize the potential of AI to enhance student services, including personalized support, timely feedback, and effective recruitment strategies¹⁷



Global universities have embedded AI into learning and research infrastructure according to the Stanford Human-Centered AI Index 2024¹⁶

Higher education faculty beliefs regarding amount of value created by AI across different areas % of respondents, 2022



Source: HoloniQ 2022 survey

¹⁶ (Stanford HAI AI Index, 2024) – Stanford HAI AI Index 2024: <https://hai.stanford.edu/research/ai-index-2024>

¹⁷ (EY-Parthenon, 2025) – EY-Parthenon Generative AI in EdTech Landscape, Jan 2025: https://www.ey.com/en_in/education/generative-ai-in-edtech-landscape-january-2025

2 What AI can enable

Area ¹⁸	AI opportunity
Academic Personalization	AI-driven learning paths via platforms like Moodle AI, Coursera Coach
Assessment and Evaluation	Smart proctoring, auto-grading, AI-based feedback
Student Support	AI chatbots for advising, mental wellness, and placement counseling
Research Acceleration	Literature review automation, trend prediction, and data modeling tools
Campus Admin Optimization	AI for timetabling, resource allocation, admissions filtering

3 National and global use cases

Institution / Initiative	Description	Impact / Outcome
IIT Madras – Personalized AI in MOOCs ¹⁹ 	AI algorithms tailor learning pathways and assessment in SWAYAM courses	Increased course completion and learner retention
Coventry University – NLP-based feedback ²⁰ 	AI tools generate personalized comments and grading insights	30% improvement in faculty-student feedback turnaround
NUS AI Strategy 2025 ²¹ 	Institution-wide AI roadmap for curriculum, talent development, research	Scaled interdisciplinary learning and innovation labs

4 Spotlight on Eastern and North-Eastern India

Despite being home to key institutions such as Jadavpur University, Assam University, and IIM Shillong, Eastern and North-Eastern regions face significant infrastructure, digital literacy, and faculty exposure gaps in AI adoption.^{22,23}

- Use NLP tools for Bengali, Assamese, and tribal language interfaces
- AI-assisted digital labs in STEM for remote or flood-prone areas
- Foster AI capacity through State Knowledge Missions
- Partner with EdTech organizations for pilot programs on inclusive AI

18 (NEP 2020 – GoI) – National Education Policy 2020 – Government of India: <https://www.education.gov.in/en/nep-2020>

19 (SWAYAM Platform, 2023) – IIT Madras – Personalized AI in MOOCs: <https://swayam.gov.in>

20 (Coventry EdTech Initiative, 2023) – Coventry University – NLP-Based Feedback: [slow moving study in a fast moving environment](https://www.coventry.ac.uk/news/slow-moving-study-in-a-fast-moving-environment) | Coventry University

21 (NUS Newsroom, 2024) – NUS AI Strategy 2025: <https://news.nus.edu.sg/ai2025-strategy-unveiled>

22 Digital Dreams, Real Challenges: Key Factors Driving India's AI Ecosystem

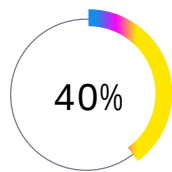
23 What's Driving the Demand for Artificial Intelligence in Guwahati? - DataMites Official Blog



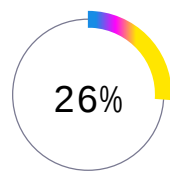
Skilling in the age of AI – Building a future-ready workforce

1 AI and the evolving skills paradigm

Artificial Intelligence (AI) is reshaping the global skilling ecosystem, offering scalable solutions to meet evolving industry needs. In India, where over 50% of the population is below the age of 25, leveraging AI for skilling is both a necessity and an opportunity. As new-age roles emerge, AI serves not only as a disruptor but also as an enabler of personalized, modular, and inclusive training.



“By 2030, workers in India may need reskilling due to AI and automation.”
– World Economic Forum Future of Jobs Report, 2023²⁴



“India's youth reported AI awareness in vocational institutions.”
– NSDC-ILO India Youth Report, 2024²⁵

2 How AI can accelerate skilling

Area	AI-enabled opportunity ²⁶
Personalized Training	Recommender engines tailor courses to individual profiles (e.g., SID, Skill-Lync)
Microlearning Modules	Gamified and voice-led modules simplify learning for blue/grey-collar user
Multilingual Access	NLP tools offer training in regional languages like Odia, Assamese, and Hindi
Skill Prediction Models ²⁷	AI predicts high-demand job roles and maps training pathways accordingly
Job Fitment Engines	Behavioral and psychometric tools match learner profiles to relevant job roles

SID Platform (NSDC): The Skill India Digital platform, launched by NSDC, integrates multiple AI/ML models to provide²⁵:

- AI-powered career recommendation engines
- Persona clustering using behavior and psychometric data
- NLP-based resume builders and job matching
- Regional content via gamified bots (including social media messaging tool + IVR) for low-literacy learners

24. World Economic Forum – The Future of Jobs Report 2023 - <https://www.weforum.org/publications/the-future-of-jobs-report-2023/>

25. NSDC Skill India Digital Hub - <https://www.skillindiadigital.gov.in/home>

26. NSDC Annual Report 2023-24 - <https://www.asdc.org.in/ASDC-annual-report-23-24.pdf>

27. India Skills Report 2024 (Wheebox)- https://wheebox.com/assets/pdf/ISR_Report_2024.pdf

3 National and global use cases

Initiative / Platform	Description	Focus / Outcome
Skill India Digital (SID) 	Unified AI-driven platform offering user profiling, job matching, and adaptive content	88L registered, 9.6L downloads, 7.6L enrollments, 752 courses, 7.4L mins content ²⁸
Career Edge ²⁹ 	AI-curated modular programs for early professionals	Self-paced learning with 1M+ users
L&T Edutech ³⁰ 	Simulation-based vocational training for infra and engineering sectors	Enhanced workplace readiness
Pymetrics (USA) ³¹ 	Behavioral-AI career alignment via neuroscience tools	Reduces recruitment bias, supports diverse learners
Skilled (WB, Kenya, India) ³² 	AI-enabled vocational training aligned to future digital economy jobs	Public-private impact model adoption

4 Spotlight: Eastern and North-Eastern India

States like Odisha, Jharkhand, Assam, and Tripura have high youth populations but limited access to industry-aligned skilling pathways. AI can play a pivotal role here by offering personalized, multilingual, and low-tech learning solutions. ^{33,28,25}

- Gamified microlearning in tribal languages (SID's bot-based vernacular learning)
- Community-based female skilling via AI-led lessons and SHG integration
- Offline-first digital tools for tribal belts with poor network penetration
- Regional skilling dashboards using persona mapping + job clusters

This report highlights the transformative potential of AI in education, offering unprecedented levels of personalization, broader access, and enhanced institutional flexibility. However, this promise is accompanied by significant concerns regarding integrity, safety, and fairness. If not properly managed, the very systems designed to personalize learning may reinforce biases, jeopardize privacy, and undermine trust.

The education sector is at a pivotal moment. Transitioning from ambition to action necessitates a proactive approach to address these emerging threats with clarity and foresight. We must consider critical questions: Who is responsible for designing these tools? Who bears accountability? Who is safeguarded?

The following chapter explores the essential risks - ranging from surveillance and algorithmic bias to the erosion of human agency - and emphasizes that establishing ethical AI frameworks is not merely a regulatory obligation but a strategic necessity.

In a diverse and intricate ecosystem like India's, our capacity to anticipate harm and protect learner rights will ultimately determine whether AI becomes a catalyst for equity or inadvertently exacerbates existing disparities.

28 DEF India (2023). https://www.defindia.org/wp-content/uploads/2023/07/The-State-of-Access-Digital-Connectivity-and-Inclusion-in-North-Eastern-Region-of-India-2023_PRINT-1.pdf

29 Career Edge <https://www.tcsion.com/courses/career-edge-young-professional/>

30 L&T Edutech - <https://lntedutech.com/>

31 Pymetrics - <https://www.pymetrics.com/>

32 Skilled - <https://www.worldbank.org/en/topic/skillsdevelopment#:~:text=Adaptability:%20The%20rapid%20pace%20of,substantially%20by%20specialization%20and%20institution.>

33 <https://www.pib.gov.in/PressReleaseDetail.aspx?PRID=2039515>



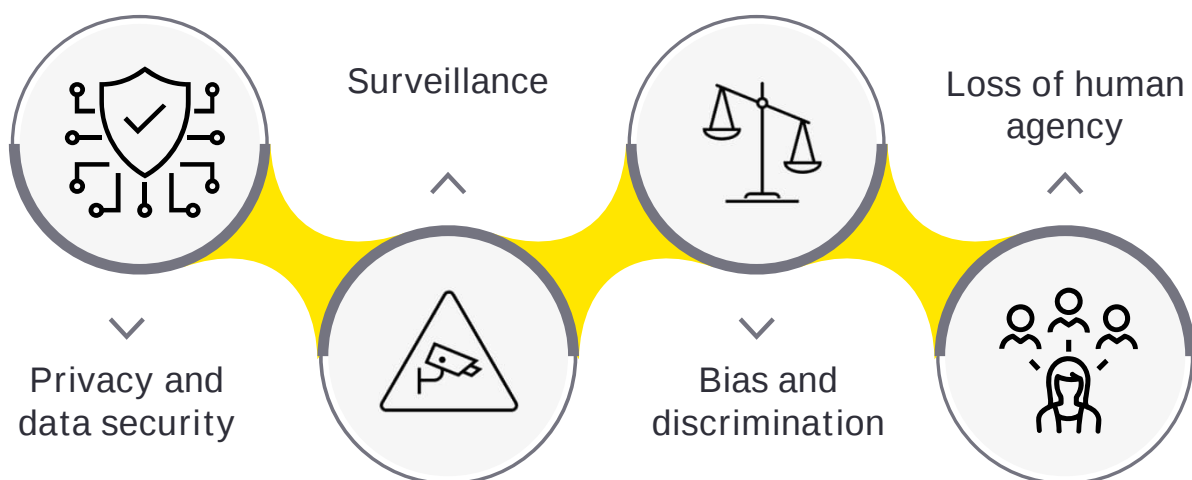
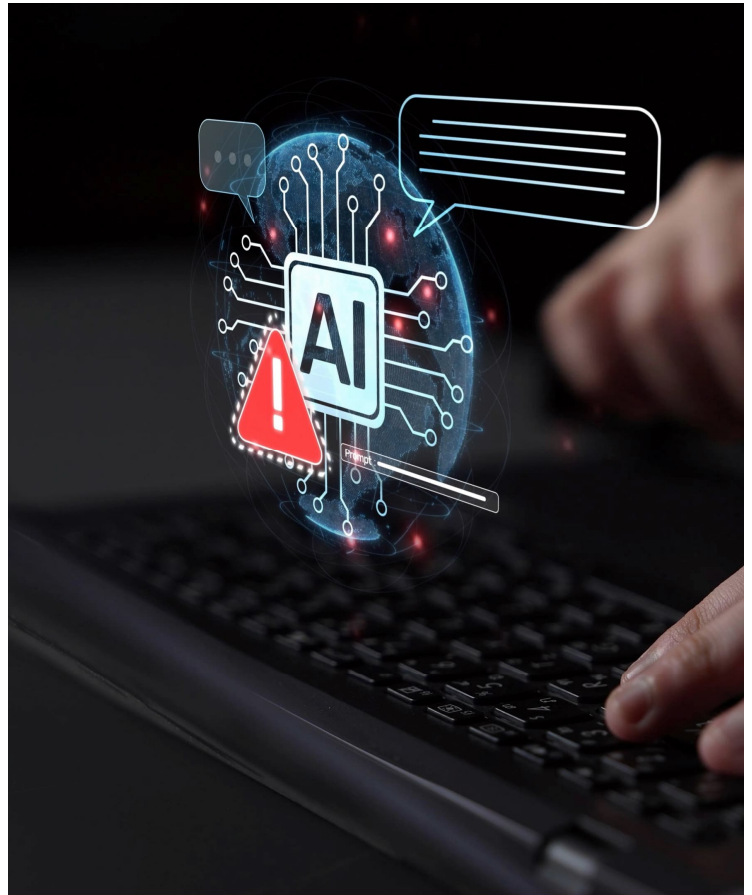
Navigating risks and establishing guardrails

Risks of AI use in classrooms

Understanding the risks of AI use in education

The Government of India's education vision for Viksit Bharat 2047 is to create an inclusive, high-quality education system for skill development and life abilities. India has around 1.5 million schools, 8.5 million primary and secondary teachers, and 260 million enrollments in the school system. In the higher education space, around 40 million students enroll in around 1,000 universities and 42,000 colleges. However, the Indian education system is characterized by fixed curriculums, archaic education delivery models, and static testing concepts. This has caused a gaping chasm between education and contemporary work skills.

The advent of AI, however, has changed things. It is helping the system move away from standardized to personalized, making it relevant and effective for the present. Increasing integration of AI into education presents both transformative opportunities and complex challenges, reshaping pedagogies, curricula, and education governance while raising critical questions about equity, ethics, and human agency. While AI has disruptive potential for enhancing educational outcomes, the integration with education systems demands navigation through concerns, including the implications of digital surveillance, systemic biases, and the potential erosion of human accountability in decision-making to recalibrate positive new directions for education futures.



Privacy and data security

Data privacy is a significant concern that complicates the integration of AI in educational settings. Privacy and data security are foundational for building confidence in AI-powered educational tools, promoting technology that enhances learning without compromising the safety and rights of students. In education, AI tools often rely on substantial amounts of student data to deliver personalized learning experiences, track progress, or adapt to individual needs. Collecting and storing sensitive information, including academic performance and behavioral patterns, raises concerns about who has access to this data and how it can be used.³⁴ Instances of cybercrimes in India against minors have surged by 32% in 2022 from 2021.³⁵

- **Violation of privacy and safety :** Academic institutions hold large amounts of sensitive data, such as student records, faculty details, research work and intellectual property. This sensitive information could be compromised or misused violating student privacy rights. To keep this important information safe, strong data protection measures are essential.
- **Consent:** AI tools are trained on massive datasets comprising text, audio, code, and images—often scraped from the internet without the content owners' permission. This raises serious intellectual property concerns for researchers, educators and learners whose work may be used without consent. In India, where digital literacy remains uneven, these risks are further amplified. Many users may not fully understand how AI systems collect and process their data, leading to the unintentional sharing of sensitive information or acceptance of privacy-invasive practices without informed consent.
- **Lack of transparency:** Many AI tools operate with ambiguity in how they collect and process data, often rely on unexplainable models, and lack mechanisms for inspection. This non-transparency blurs lines of accountability in data-driven decision-making and is a major source of trust deficits. Without clear insight into how these systems function, users are unable to question privacy practices—potentially leading to adverse consequences, such as limiting future employment opportunities for students.

Bias and discrimination

- **Gender bias:** Women's underrepresentation in Generative AI usage leads to systems trained on data that inadequately sample women's preferences and needs, ultimately widening existing gender disparities in technology adoption and economic opportunity. Even when women gain access to these tools, their effectiveness may be limited, as generative AI systems are often trained on biased data (Guilbeault et al., 2024)—much of it sourced from predominantly male users. This can reinforce gender gaps, as the systems continue to learn from and adapt to male-dominated inputs.³⁶
- **Digital disparity:** AI tools especially GenAI tools, depend on vast data, advanced AI architectures, and immense computing power—resources concentrated in major tech companies and wealthier economies like the US, China, and parts of Europe. This excludes most countries, particularly in the Global South, from developing or controlling GenAI. As data becomes critical for economic growth, those lacking access face data poverty. The imbalance in data and computing access intensifies inequality, reduces the diversity of training data and further marginalizing already marginalized voices. Additionally, low levels of technology penetration in several regions further limit access to these tools. As a result, students from underserved communities may be excluded from the benefits of AI, reinforcing existing educational and digital divides.
- **Social disparity:** Artificial Intelligence mirrors the biases that are present in our society based on gender, age, race and many other factors. AI-based educational tools have the potential to enhance learning outcomes, but they also risk widening existing social disparities if local contexts are not adequately addressed. A key challenge is the limited availability of tools in regional languages and the lack of localized datasets that align with cultural, contextual and regional needs of the Indian education system.

34. EY Analysis; [Navigating the future of AI in education and education in AI](#)

35. [National Crime Records Bureau \(NCRB\) Report 2022](#)

36. [Global Evidence on Gender Gaps, Harvard Business School](#)

Surveillance

EdTech organizations routinely collect and control children's digital educational records, including data on cognitive traits, learning progress, engagement levels, response times, reading habits, video consumption, device identifiers and location. This data is often shared with third parties, including advertising partners. An analysis of 163 education technology products recommended during the COVID-19 pandemic revealed that 89% could or did track children, both within educational settings and beyond school hours. Tracking technologies embedded in learning platforms transmitted children's data to third-party companies—most commonly ad tech firms—that then targeted them with behavioral advertising.³⁷ Student data should not be used by either education technology providers or advertising companies for marketing purposes.

Loss of human agency

The growing use of AI in education is reshaping how students and teachers make decisions and carry out tasks. While AI tools offer efficiency and personalized support, they are increasingly making choices on behalf of users—ranging from lesson planning to solving problems—often without requiring human input. This shift can reduce the autonomy of both teachers and students by encouraging reliance on automated systems rather than independent thinking. As a result, critical decision-making, problem-solving, and creative exploration are being outsourced to algorithms, which may hinder the development of essential cognitive and professional skills. Over time, this over-dependence on AI risks eroding human agency and the ability to reflect, question, and grow through experience and effort—cornerstones of meaningful learning and teaching.

The role of the teacher is not simply to provide information and assess its absorption but to inspire students to think, question and discover for themselves. AI lacks the nuanced understanding and empathy of human educators, making it less effective in addressing complex, context-dependent learning needs. Younger students, in particular, rely on direct interaction with teachers to achieve meaningful learning. Hence, AI should be used to augment and not replace human teaching.



Biases in AI can stem from societal structures, data collection methods, or inherent limitations within the AI technologies themselves. When organizations deploy AI systems in real-world scenarios, these biases may become more pronounced due to user interactions, demographic representations, and misconceptions about AI neutrality. Data scientists, AI developers, educational leaders, and regulators must recognize and address these biases to develop fair and effective AI tools.

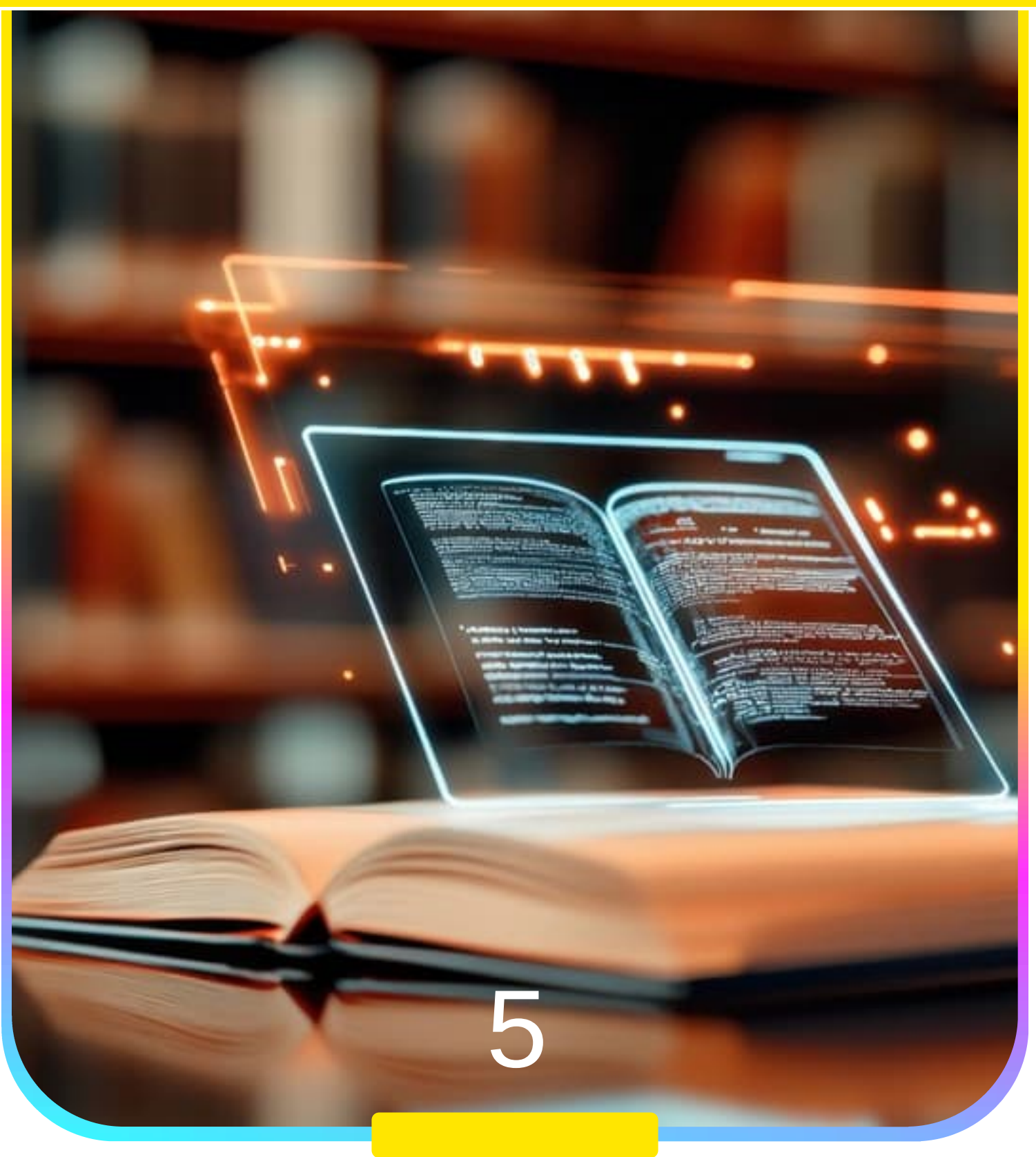
Damaris Fynn
EY Americas Risk Data and AI Leader

Recognizing the risks is merely the initial step in effectively managing AI in education. The true challenge lies in integrating accountability, ethics, and a human-centered approach into the design and implementation of AI systems. This requires more than piecemeal efforts or reactive compliance; it necessitates a cohesive and forward-looking governance framework that harmonizes innovation with institutional protections.

As we move into the next section, the emphasis shifts from understanding the reasons to exploring the methods—specifically, how national and subnational entities can develop governance models that not only mitigate risks but also actively foster trust. Whether through voluntary codes of conduct, collaborative regulation with the private sector, or enforceable legislative frameworks, India's governance structure must adapt in parallel with technological advancements.

Drawing on both global and local examples, the upcoming section examines how well-designed governance mechanisms can serve as catalysts for scalability, legitimacy, and resilience in India's AI-driven educational transformation.

37 [Guidance for generative AI in education and research - UNESCO Report 2023](#)



Building ethical and scalable AI Governance

Regulating the risks of AI in education

Education is a crucial policy area for governments that are focused on improving socioeconomic outcomes and reducing inequalities. Policymakers have an important role to play in facilitating the safe, ethical and productive adoption of AI to improve education outcomes and prepare the future workforce.

“The growing use of novel AI technologies in education will only benefit humanity if, by design, it enhances human centered approaches to pedagogy and respects ethical normal and standards.

AI and Education Guidance for Policy-Makers,
UNESCO, 2021³⁸

India needs robust AI and data governance frameworks for education, with clear guidelines on the safe, ethical and responsible development and use of AI tools in education.

Across the globe, three approaches to AI regulation have been adopted so far:

Self regulation



- Group of firms in a particular industry, or the entire industry or sector agrees to act in prescribed ways, according to a set of rules or principles³⁹
- Generally organized around principles of privacy, security, transparency, fairness, accountability, and trust⁴⁰
- Examples - Voluntary commitments, self-certifications, and impact assessments

Co-regulation



- The government or regulators develop, recognize, endorse, or implement standards
- Represents a midpoint in the continuum between self-regulation and full government regulation⁴¹
- Examples - Codes of practice and risk management frameworks

Binding regulation



- Policymakers enact a law or some other binding framework that makes them legally enforceable⁴²
- Example - Artificial Intelligence Act, 98

India's AI regulatory approach spans self-regulation by industry, co-regulation through public-private collaboration, and binding laws like the DPDP Act. It promotes ethical AI through voluntary principles, co-created standards, and emerging legal frameworks, aiming to balance innovation with accountability, user safety, and inclusive governance across sectors, especially education and digital platforms.

38 AI and Education Guidance for Policy-Makers, UNESCO, 2021

39 "Industry Self Regulation: Role and Use in Supporting Consumer Interests," OECD Digital Economy Papers, no. 247 (OECD, March 1, 2015), 11, <https://doi.org/10.1787/5js4k1fjqkwh-en>.

40 "AI Principles," Organisation for Economic Co-operation and Development (OECD)

41 Florence G'sell, "Regulating under Uncertainty: Governance Options for Generative AI," October 6, 2024, <https://doi.org/10.2139/ssrn.4918704>

42 The EU AI Act, Regulation (EU) 2024/1689 (Enforced on June 13, 2024)

1 Self-regulation

Industry-led initiatives based on agreed-upon ethical principles, without direct government enforcement.

Initiative	Details
NITI Aayog's Responsible AI Principles (2021)	Promotes voluntary adoption of principles like privacy, fairness, transparency, and safety by AI developers and startups.
Tech industry ethical AI charters	Internal AI ethics guidelines covering fairness, non-discrimination, transparency, and explainability.
Self-certifications by EdTech/AI companies	Companies voluntarily commit to data privacy, safe design, and ethical use, often aligned with international frameworks (like OECD, IEEE).
Impact assessments by AI developers	Encourages developers to conduct ethical impact assessments voluntarily to demonstrate alignment with global AI ethics standards.

2 Co-regulation

Government and industry jointly shape standards or practices; not legally binding but officially recognized or endorsed.

Initiative	Details
IndiaAI (Ministry of Electronics and Information Technology) Programs	Ministry-supported initiatives involving co-design of Responsible AI tools, research hubs, and educational frameworks with private sector and academia.
National Educational Technology Forum (NETF)	Autonomous body proposed under the NEP 2020 to facilitate the exchange of ideas on the use of technology to improve learning, assessment, planning, and administration, capacity-building, promoting innovation and research, and setting standards and benchmarking.
AI standards development by BIS (Bureau of Indian Standards)	Government-backed effort to define AI quality and safety standards, developed in consultation with industry stakeholders.
AI curriculum in education	National education boards collaborating with private EdTech players and academia to create guidelines and safe-use frameworks for AI in schools.
Draft National Strategy for AI (NITI Aayog)	Includes guidelines and proposed models for risk management and Responsible AI governance, developed with industry consultation.
Model codes of practice for AI use in education (emerging)	Advisory practices co-created by regulators and EdTech/academic bodies for safe AI use in assessments, content delivery, etc.

Legally enforceable laws or mandates issued by government or regulators.

Initiative	Details
Digital Personal Data Protection Act, 2023 (DPDP Act)	Legally binds all entities, including AI developers and EdTech firms, to obtain consent and safeguard user data—particularly sensitive educational and biometric data.
(Upcoming) National AI Legislation (Expected 2025–26)	India has yet to pass a dedicated AI Act like the one in EU, but consultations are underway for a binding framework aligned with the Digital India mission.
IT Rules (Intermediary Guidelines), 2021 (Applicable where AI is used in digital platforms)	Legally binding rules on user harm, transparency, and grievance redressal which indirectly apply to AI-based recommendation systems and platforms.

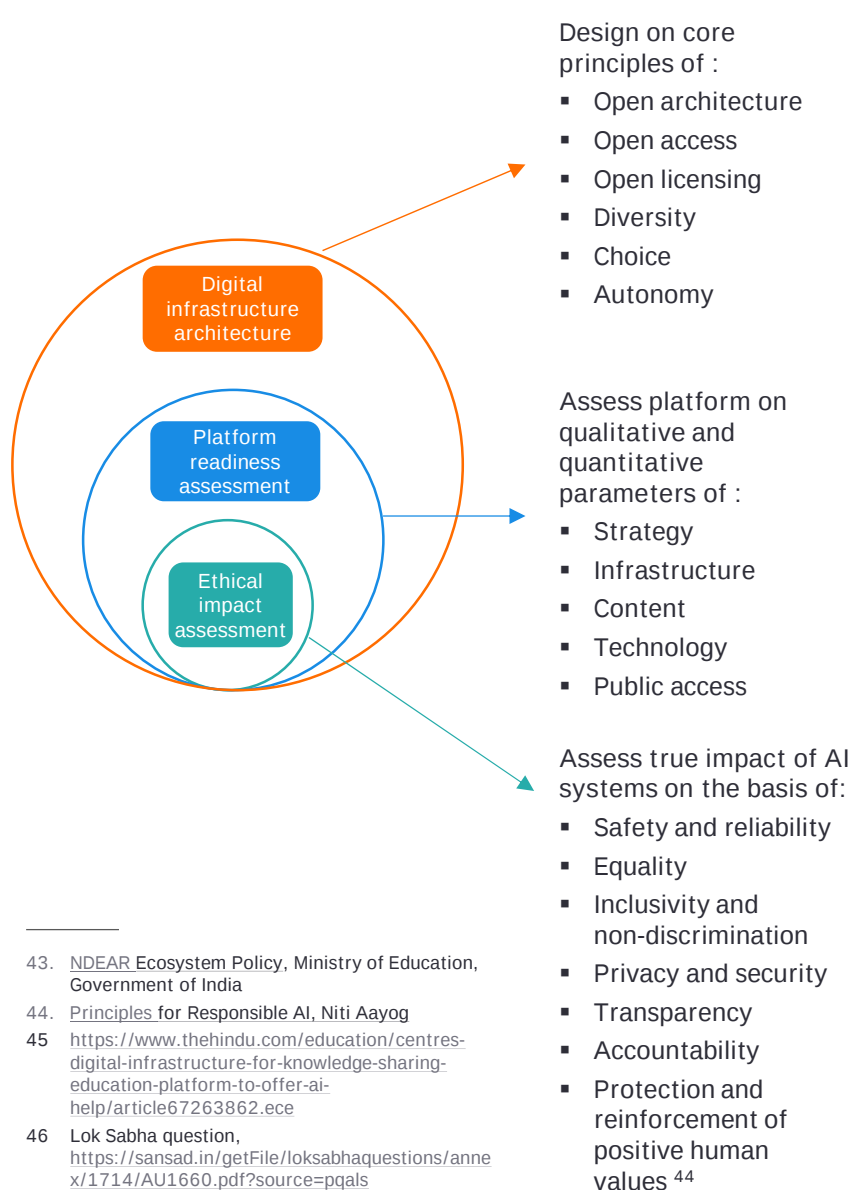


How the government can prepare to catalyze AI for quality education

The objective is to facilitate AI in enhancing learning experiences without compromising safety or privacy or exacerbating inequities. Important areas for consideration include:

1 Policy development and governance

The frameworks and policies adopted in India, including NEP 2020, National Curriculum Framework for the Foundational Stage (NCF-FS), National Digital Education Architecture (NDEAR), and India Enterprise Architecture (InDEA) 2.0., keep the interests of the teachers and students at their core. Learning platforms designed to be student and teacher centric and accessible to public use should comply to the blueprint of NDEAR.



Example

NDEAR was launched in India on 29 July 2021, with a vision to create a unifying national digital infrastructure to energize and catalyze the education ecosystem. It is a technological framework that aims to enable a set of interoperable building blocks which are contributed and used by ecosystem players that help create and deliver diverse, relevant, contextual, innovative solutions benefiting students, teachers, parents, communities, administrators alike resulting in timely implementation of policy goals.⁴³

Example

The Digital Infrastructure for Knowledge Sharing (DIKSHA) platform and applications are NDEAR compliant as they use open-source code and specifications from Sunbird - an MIT-licensed open-source initiative following the core principles of open architecture, open access, open licensing with diversity, autonomy, and choice.⁴³

Example

Personalized Adaptive Learning's software-based approach in DIKSHA will allow each student to have an individualized learning experience over the course of the curriculum based on their unique needs and abilities.⁴⁵ NCERT and Digital India Corporation (DIC) are conducting workshops in reference to Personalized Adaptive Learning (PAL).⁴⁶ The Andhra Pradesh government has tied up with Microsoft to address the complex challenge of bringing down the school dropout rate. Based on specific parameters, an application powered by Azure Machine Learning processes the data pertaining to all students to find predictive patterns. With these data insights, the district education officials can intervene and help students who are most likely to drop out. A variety of programs and counselling sessions could be conducted for these students and their parents.⁴⁷

43. NDEAR Ecosystem Policy, Ministry of Education, Government of India

44. Principles for Responsible AI, Niti Aayog

45. <https://www.thehindu.com/education/centres-digital-infrastructure-for-knowledge-sharing-education-platform-to-offer-ai-help/article67263862.ece>

46. Lok Sabha question, <https://sansad.in/getFile/loksabhaquestions/anne/x/1714/AU1660.pdf?source=pqals>

47. National Strategy for AI, Niti Aayog - <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf>

Investment in infrastructure, human resources and professional development of educators

India as an emerging economy has seen a rise in infrastructure with 57% schools having computers and 53% schools having internet in 2024, in comparison to 39% and 22%, respectively.⁴⁸ However, the Eastern and North-Eastern parts of India have lower access to internet than the national average. To facilitate inclusive access to AI in education, governments must invest in reliable internet connectivity, digital devices, and secure data systems across all schools and universities. Alongside infrastructure, funding is needed for AI tools, platforms, and educator capacity-building and professional development. Strategic planning and collaboration with civil society, global technology partners, and alliances like the Edison Alliance can help bridge the digital divide, reduce costs, and scale innovation. A unique opportunity exists for India to leapfrog traditional models and adopt AI-powered systems that drive better, more equitable learning outcomes.

In the Indian context, establishing a central government task force on AI in education can play a vital role in accelerating curriculum and pedagogy reforms. This task force should bring together representatives from academia, EdTech firms, industry, and government to co-develop AI-integrated curricula, digital tools, and infrastructure aligned with future workforce demands. It can also drive research, innovation, and capacity-building in AI-driven education practices. While India has taken strides through national AI initiatives like the National AI Strategy (NITI Aayog), Principles of Responsible AI (NITI Aayog) and Digital India, there is a pressing need for a dedicated body focused specifically on the application of AI in education. In March 2023, Australian education ministers established a National AI Schools Taskforce to promote the advancement of AI in education, including a draft framework for using AI in schools.

In India, only 39% of female and 30% of male teachers currently teach using computers, highlighting a pressing need for system-wide digital and AI literacy.⁴⁹ As AI becomes embedded in classrooms, all educators—not just those teaching computer science—require structured training to understand and apply AI tools safely and ethically. Drawing lessons from global examples like the UK, where AI-related teacher training is gaining momentum, India must prioritize professional development programs. Government-private sector collaborations can play a key role in designing AI-focused teacher training, aligned with sound pedagogy and future workforce needs.

Pedagogy and curriculum reforms

Teachers spend less than half the time in student interaction⁵⁰, which creates significant scope for AI-enabled automation in non-instructional duties, allowing educators to focus more on student engagement, mentoring, and learning support. As EdTech continues to transform education delivery, it is critical to prepare teachers for an AI-integrated future. Including AI in professional education, especially in B.Ed and Teacher Training, with courses in AI pedagogy such as how to teach AI in classrooms, ethical AI use in schools, and AI-based personalized learning, can provide all teachers platforms to understand the impact of AI.

In line with NEP 2020, the education department should integrate AI ethics education across all levels of the education system, encouraging cross-disciplinary learning that connects technical AI skills with ethical, humanistic, and social dimensions, for example integrating psychology with AI, ethics with data science, AI in diagnostics, robotic surgery, and healthcare analytics, etc. It is essential to develop courses and digital resources on AI ethics in local and indigenous languages, ensuring cultural relevance and accessibility. Training must also emphasize using AI to automate routine tasks while enabling teachers and students to focus on developing critical thinking and higher-order skills.

In school education, CBSE introduced AI as a subject for students in classes IX to XII and has also partnered with an IT major to launch the SkillsBuild Program, which includes orientation sessions on generative AI. In collaboration with another IT major, CBSE has also developed an AI Facilitator Handbook which provides educators with comprehensive training materials and real-life examples. From the 2025-26 sessions, the Council for the Indian School Certificate Examinations board has introduced robotics and AI as part of its curriculum.⁵¹

48 <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2097864>

49 UDISE Dashboard, <https://dashboard.udiseplus.gov.in/#/>

50 Artificial Intelligence and the Future of Teaching and Learning, Dept of Education, USA, <https://www.ed.gov/sites/ed/files/documents/ai-report/ai-report.pdf>

51 EY analysis, https://www.ey.com/en_in/insights/education/how-ai-is-activating-step-changes-in-indian-education

To strengthen the EdTech ecosystem, the government could consider establishing a national EdTech consortium that brings together startups, established players, academic institutions, and policymakers on a common platform. This body can facilitate dialogue, co-create quality standards, support interoperability, and identify alignment with NEP 2020. Public-private partnerships should be encouraged to scale digital infrastructure, develop vernacular content, and invest in teacher training. Clear regulatory guidelines and sandbox environments for innovation can boost trust and innovation. A unified effort can determine if EdTech solutions are inclusive, pedagogically sound, and capable of delivering equitable and impactful learning across India.

IndiaAI, a MeitY initiative, is a knowledge portal, a research organization, and an ecosystem building initiative. It stands to unite and promote collaborations with various entities in India's AI ecosystem. It is structured around seven foundational pillars designed to establish a robust and inclusive AI ecosystem in India.

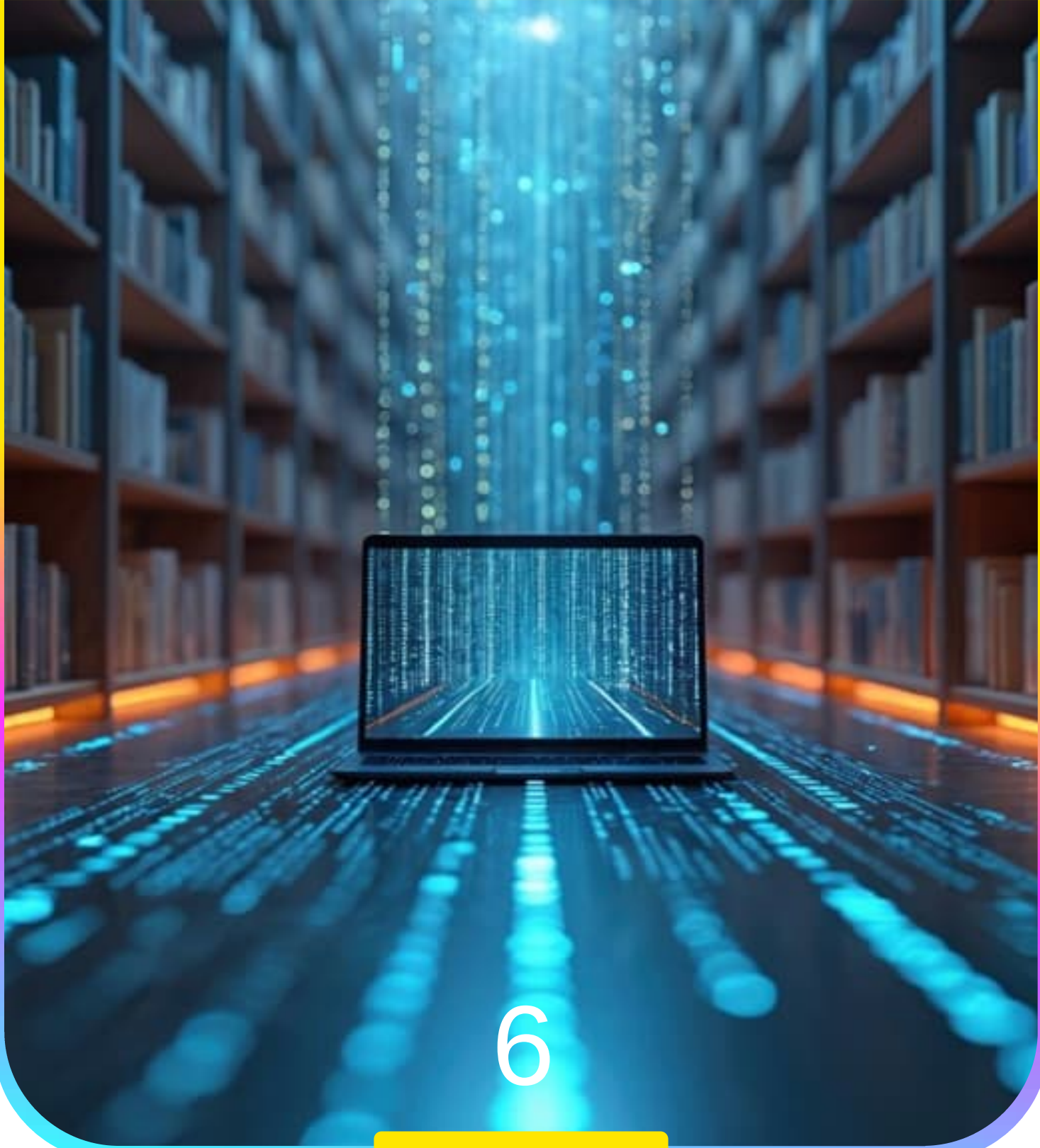
IndiaAI pillars	Mapped to education stack	Purpose
IndiaAI Compute Capacity Availability of 18,000+ affordable AI compute units	Digital infrastructure in schools / higher education institutes	Facilitate affordable compute access for AI labs in schools and colleges; support low-bandwidth AI solutions
IndiaAI Innovation Centres (CoEs)	AI Centres of Excellence in academic institutions	Create CoEs focused on AI in education to develop EdTech tools and curriculum and pedagogy research
IndiaAI Datasets Platform	Learning analytics and student data systems	Enable anonymized or minimized education datasets for research ensuring bias-free, inclusive data repositories
IndiaAI Application Development Fund	EdTech startups and AI-enabled learning platforms	Offer grants for inclusive, multilingual AI learning tools
IndiaAI FutureSkills & Talent	AI integrated mainstream curriculum in schools and colleges	Embed AI across disciplines; develop sector-specific AI education pathways
IndiaAI International	Global collaborations on AI in education	Localize best practices from global partners and multilateral forums
IndiaAI Skilling & Capacity Building	Teacher training and digital readiness of infrastructure	Train educators in AI tools, ethics, and pedagogical integration

Effective governance serves as the foundation, but true transformation occurs only when this foundation is translated into targeted, context-sensitive actions. As India strives to realize its vision of *Viksit Bharat @2047*, the next critical phase is implementation: empowering institutions, educators, and ecosystems to incorporate AI not only safely but also effectively and equitably.

In the final section, the report presents a bold and actionable roadmap that prioritizes regional equity, empowers frontline educators, invests in multilingual and inclusive technologies, and ensures that ethical AI becomes a tangible reality in classrooms, campuses, and skill centers throughout India. It underscores the importance of adapting global best practices to local contexts, enhancing institutional capabilities, and developing digital public infrastructure that reflects India's federal, multilingual, and demographically diverse landscape.

This is not merely a call for incremental change; it is a call for strategic commitment—supported by investment, partnerships, and collective determination—to ensure that AI serves as a lasting engine of educational advancement, innovation, and empowerment for all.



A futuristic library with tall bookshelves filled with books. The floor is dark and reflective, showing glowing blue data streams that converge towards a laptop in the center. The laptop screen displays a digital path leading into the distance. The overall atmosphere is high-tech and digital.

6

Priorities and recommendations

Building an AI-ready education ecosystem

Why does it matter?

India's Viksit Bharat @2047 vision lays out an ambitious trajectory to become a developed nation—marked by social inclusion, innovation-led growth, digital sovereignty, and skilling at scale. AI's role is no longer optional—it is foundational.⁵²

This roadmap offers a sector-specific, action-oriented plan to empower learners, educators, and institutions to responsibly integrate AI into the Indian education landscape—bridging divides, amplifying impact, and enabling transformation at scale, particularly in the Eastern and North-Eastern regions.



School education: Laying the AI foundations for future citizens⁵³

Empowering teachers, expanding access, and nurturing responsible AI users must be central to our K–12 strategy

A

Mainstream AI literacy in school curricula

- Introduce AI as part of digital and computational thinking from Grades 6–12
- Use project-based models (AI for sustainability, SDGs) to build relevance

B

Bridge the digital divide through AI interfaces in Indian languages

- Co-create voice-enabled, multilingual bots for under-resourced regions (e.g., Jharkhand, Assam)
- Enable inclusion of girls and learners with disabilities via AI accessibility layers

C

Empower teachers with AI-enhanced tool

- Implement AI-enabled lesson planners, grading automation, and performance tracking dashboards
- Provide structured training aligned to IndiaAI's "Responsible AI" principles

D

Launch 'AI for All' labs in Aspirational Districts

- Set up co-learning spaces with support from CSR, B.Ed colleges, and EdTech partners
- Build state-level innovation leagues to foster teacher-student innovations

⁵² AI in Indian Education: Key Steps for Growth | EY – India

⁵³ Guidance for generative AI in education and research - UNESCO Report 2023

Higher education: Elevating institutions to lead with intelligence

AI is India's chance to reimagine its academic institutions – not just for students but for systems

A Establish regional AI CoEs

- Prioritize Tier-II/III cities in Eastern India (e.g., Bhubaneswar, Siliguri)
- Encourage thematic specialization (AI + agriculture, AI + healthcare, AI + ethics)

B AI-powered academic systems

- Encourage adaptive teaching-learning systems (LMS), plagiarism detection, mental health monitoring
- Use AI for campus ops: Predictive admissions, dropout early warning, faculty workload balance

C Launch interdisciplinary AI+X programs

- Offer dual-track degrees (e.g., AI + Law, AI + Sociology) at UG/PG levels
- Mandate AI ethics modules in all technology/engineering programs

D Launch 'AI for All' Labs in Aspirational Districts

- Link academic research to missions like IndiaAI, NDEAR, Gati Shakti, and SDGs
- Fund transdisciplinary journals and student research grants in GenAI applications

Skilling and vocational education: Precision, scale, and pathways to employment

AI allows skilling to shift from standardized to personalized - especially critical for first-generation learners

A Scale AI-driven career guidance platforms

- Expand Skill India Digital's diagnostic engines across states with regional employment trends
- Integrate AI tools to suggest courses, jobs, and local apprenticeships

B Personalized, mobile-first learning

- Use microlearning powered by AI (e.g., bots, nudges) in local languages
- Focus on job roles in demand (logistics, healthcare, green energy, digital retail)

C AI for skilling of marginalised populations

- Enable community-driven learning models via NGOs, CSCs, and self-help groups
- Promote GenAI for rural livelihoods (e.g., crop advisory, e-commerce onboarding)

D Stackable micro-credentials

- Recognise modular AI-enhanced training that builds toward NSQF-certified credentials
- Align with industry-recognised standards (e.g., NASSCOM FutureSkills Prime)

Moreover, education systems must address key implementation challenges before they can fully realize the transformative potential of AI.⁵⁴



Limited AI and digital skills among educators and students

While AI holds immense promise to enhance teaching and learning, most educators have yet to incorporate it into their daily practice - largely due to a lack of awareness, training, and hands-on support. Without targeted capacity building, this skills gap risks leaving both teachers and learners underprepared for an AI-driven future.

Equipping educators with the competencies to use AI responsibly and effectively is no longer optional - it is urgent. Strategic investments in professional development, practical toolkits, and ongoing mentorship are essential to facilitate AI adoption, which would lead to improved pedagogy and help avoid confusion or dependence.



Insufficient digital infrastructure and tools remain a critical barrier to inclusive AI adoption in education

To unlock the transformative potential of AI in education, every learner and teacher must have access to connected devices, high-speed internet, and secure digital platforms. Without this, AI risks exacerbating, and not alleviating, the digital divide, leading to deeper inequities in learning outcomes.

Bridging this divide demands sustained and strategic investment in reliable internet connectivity, affordable digital devices, and, in many regions, basic infrastructure such as stable electricity. Equally critical is the development of safe digital ecosystems, including robust cybersecurity frameworks, privacy-preserving data systems, and platforms designed with inclusion and safety at their core.

Ensuring AI-enhanced education benefits all, not just the digitally privileged, must be a global priority—and a shared responsibility.

Vidya Samiksha Kendra (VSK) serves as a pioneering model for AI-enabled education governance, integrating data from millions of schools and learners to provide real-time, actionable insights. Its use of big data analytics and machine learning to identify district-level learning gaps, teacher support needs, and dropout risks exemplifies the transformative potential of AI in education monitoring and policy-making⁵⁵



VSK data for enhanced education outcomes⁵⁶

- Data integration: Aggregate anonymized data from VSK covering attendance, academic performance, teacher training, infrastructure, and enrollment across districts and schools.
 - AI models:
 - Detect district/school-level learning deficits and dropout risks.
 - Recommend personalized learning plans and teacher support.
 - School clustering: Group schools by performance and context to guide targeted interventions.
 - Real-time nudges: Provide actionable insights via dashboards and chatbots to educators and administrators.
 - Pilot deployment: Implement in select districts for 12 months, measure impact, and refine models.
- Benefits: Enables data-driven, localized decisions aligned with NEP 2020, improving learning outcomes and resource allocation.

54. EY Analysis; Navigating the future of AI in education and education in AI

55. Vidya Samiksha Kendra Overview, Education For All in India, 2024

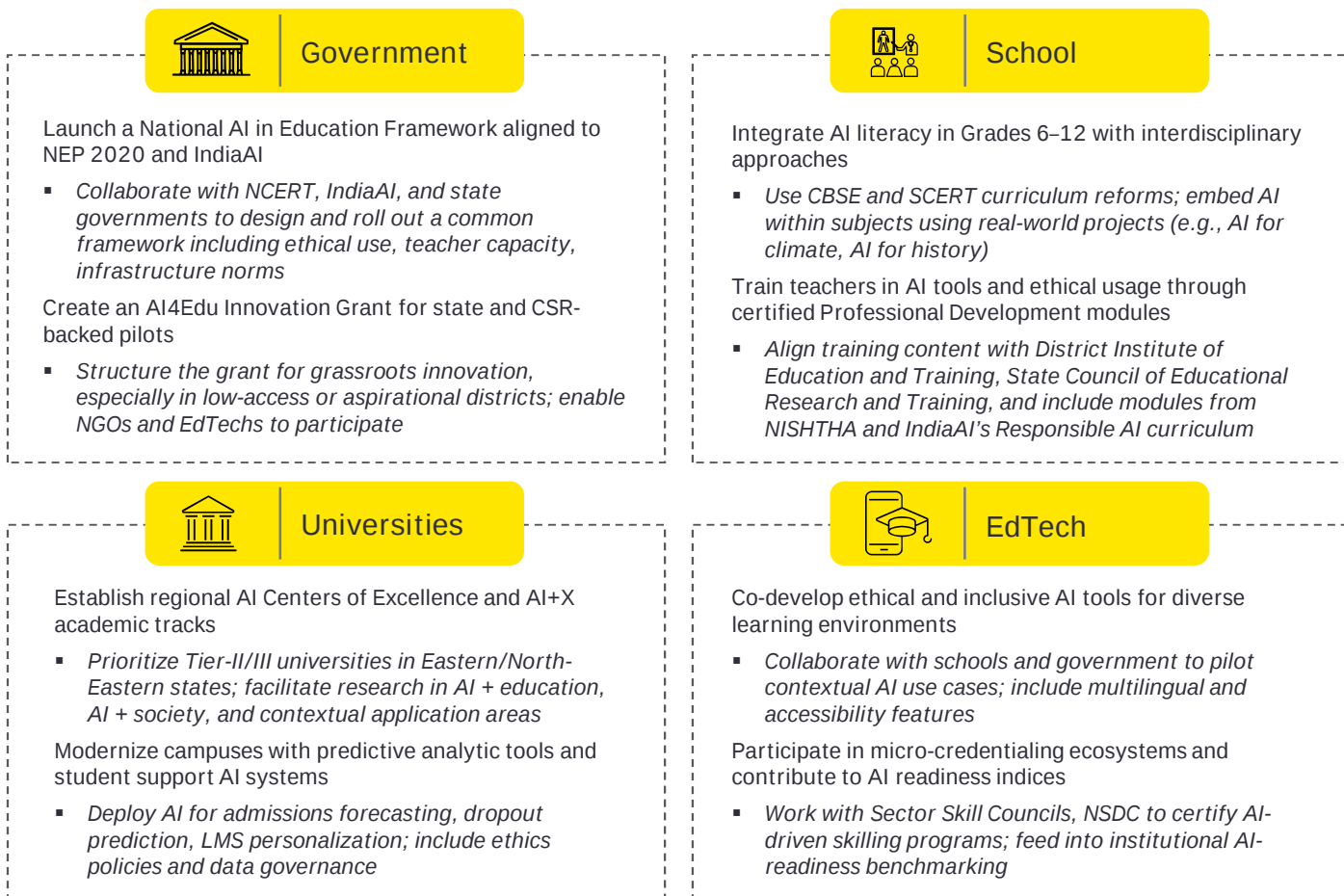
56. Vidya Samiksha Kendra Overview, Vajiram & Ravi, 2023, <https://vajiramandravi.com/current-affairs/vidya-samiksha-kendra/>

India 2047 Vision: From possibility to policy

AI is a crucial part of transforming how India learns, teaches, and grows.

Through coordinated action, particularly across underserved regions of Eastern and North-Eastern India, AI can become an instrument of social equity, productivity, and global competitiveness.⁵⁷

A Viksit Bharat is not just a prosperous India—it is a learning India, an ethical India, and an empowered India. AI in education is not a luxury; it is the engine that can take us there—if we build it right, build it fair, and build it for all.



To identify ethical and effective AI integration in education, stakeholders should adopt UNESCO's Readiness Assessment Methodology (RAM)⁵⁸, which provides a holistic framework to evaluate and strengthen national capacities across technical, educational, legal, and societal dimensions. Utilizing RAM will enable targeted interventions to address gaps in AI governance, infrastructure, and skills, fostering an AI-ready education ecosystem aligned with global ethical standards.

Ethical considerations highlighted in UNESCO's AI Readiness Assessment Methodology (RAM)⁵⁸:

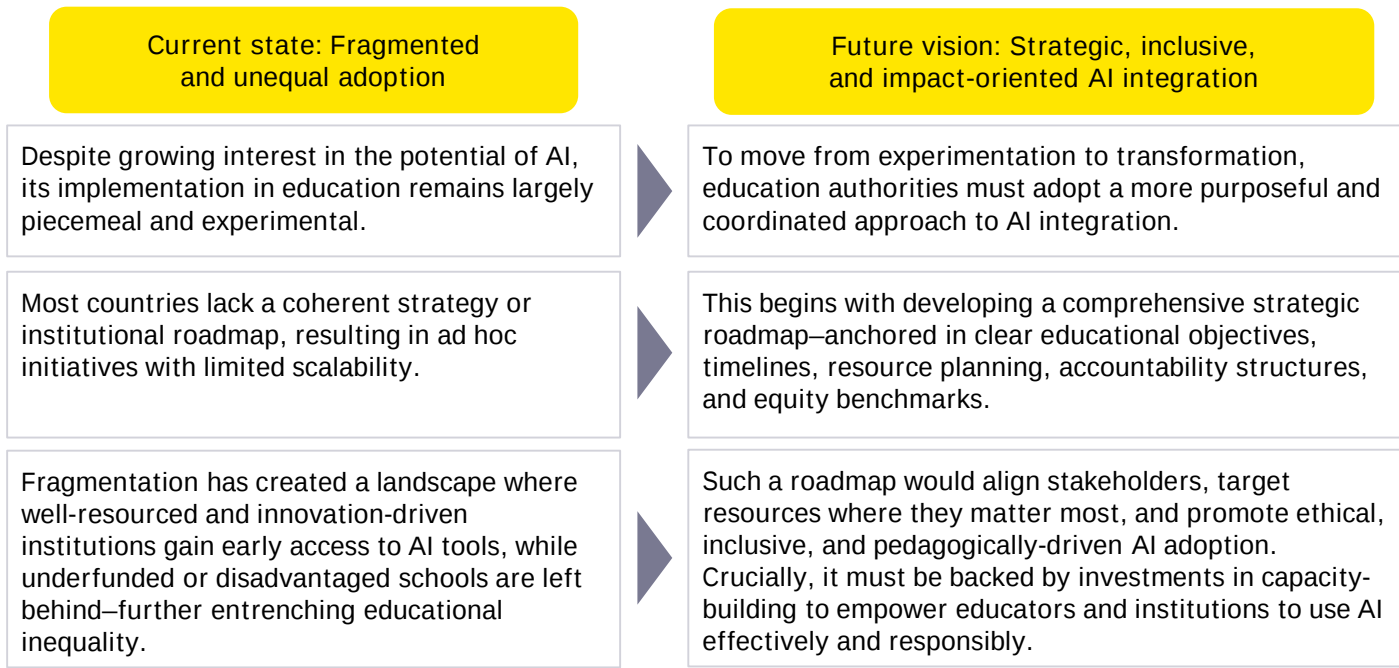
- Human-centered ethics: RAM is based on UNESCO's Recommendation on the Ethics of AI, emphasizing transparency, fairness, accountability, inclusiveness, and non-discrimination to protect human rights throughout AI deployment.
- Holistic governance: It assesses legal, social, cultural, economic, educational, and infrastructural readiness to facilitate AI adoption is ethically sound and socially responsible.
- Stakeholder engagement: RAM promotes multi-stakeholder collaboration to build transparent and accountable AI frameworks that mitigate risks like bias, misinformation, and rights violations.
- Continuous ethical oversight: It complements Ethical Impact Assessments to maintain ongoing evaluation of AI systems' societal impacts.

⁵⁷ AI in Indian Education: Key Steps for Growth | EY – India

⁵⁸ UNESCO, *Readiness Assessment Methodology: A Tool of the Recommendation on the Ethics of Artificial Intelligence*, 2023. <https://unesdoc.unesco.org/ark:/48223/pf0000385198>



A well-designed strategic roadmap provides clarity, coordination, and direction for scalable, equitable AI integration.



Example



The UAE has positioned itself as a global frontrunner in harnessing AI to reimagine the future of education.⁵⁹

With a bold vision to equip its youth with future-ready skills for an AI-driven world, the UAE was among the first nations to institutionalize its ambitions through the launch of a National AI Strategy in 2018, anchored by a cabinet-level Ministry of Artificial Intelligence. Education has remained a core pillar of this strategy, with targeted initiatives to embed AI into classrooms, build AI-powered learning solutions, and cultivate digital fluency among both students and educators.

Beyond integration, the UAE is also investing heavily in AI research and innovation across its education sector, fostering a robust ecosystem that supports public-private partnerships, talent development, and scalable EdTech deployment. By aligning policy, infrastructure, and innovation, the UAE is not just adopting AI in education; it is shaping a global blueprint for AI-led learning transformation.

59 EY Analysis; Navigating the future of AI in education and education in AI



Conclusion



The priorities and recommendations outlined in this report are not merely tactical measures; they signify a fundamental reimagining of how education systems can evolve in an AI-enabled landscape. AI is reshaping the essential functions of learning, transforming how knowledge is delivered and assessed, how institutions operate, and how individuals navigate lifelong learning pathways. This transformation must be grounded in purpose, ethics, and equity.

A significant shift is occurring, from fragmented initiatives and reactive adoption to a more intentional, system-wide movement that positions AI as a core driver of educational value. This movement is not about replacing human intelligence but enhancing it; it is not merely about digitization, but about creating intelligent systems that are inclusive, responsive, and prepared for the future.

The added value is evident:

- Learners receive personalized, flexible experiences tailored to their pace, potential, and passions.
- Educators are equipped with intelligent tools that enable them to focus on mentoring, creativity, and impactful teaching.
- Institutions and systems gain real-time insights, optimize resource allocation, and engage in predictive planning.
- The education ecosystem evolves from a reactive stance to one that is resilient, data-informed, and globally competitive.
- To fully realize this value, a collective commitment is essential—from policymakers, educators, technologists, and learners; to ensure that AI acts as a tool for empowerment rather than exclusion.

The path forward requires bold leadership, ethical foresight, and collaborative action. With strategic investments in people, platforms, and policies, AI can serve as the catalyst that not only enhances educational delivery but also drives educational transformation.

Let us transition from isolated innovations to systemic impact. From potential to momentum. From today's initiatives to tomorrow's promise.



Appendices

Appendix A: Glossary of Key Terms

Term	Definition
Artificial Intelligence (AI)	The simulation of human intelligence processes by machines, particularly computer systems, including learning, reasoning, and self-correction.
Adaptive Learning	An educational method using technology and data analytics to tailor learning experiences to the needs of each learner.
EdTech	Short for "Educational Technology," referring to digital tools and platforms used to support teaching and learning.
Generative AI	A subset of AI capable of generating new content (e.g., text, images, code) using deep learning models such as GPT or DALL-E.
Virtual Labs	Online platforms that simulate laboratory experiments and enable learners to conduct practical tasks remotely.
MOOCs	Massive Open Online Courses—web-based courses available to a large number of participants, often free or low-cost.
AI+X Framework	A curricular and strategic approach that embeds AI concepts into non-technical disciplines (X) such as economics, education, or humanities.
NLP (Natural Language Processing)	AI technology that enables computers to understand, interpret, and generate human language.
Learning Analytics	The collection and analysis of learner data to improve teaching strategies, student support, and outcomes.
Digital Divide	The gap between individuals or communities with access to digital technologies and those without.
Responsible AI	The practice of developing and using AI in ways that are ethical, transparent, and respectful of human rights.
AI Readiness Index	A benchmark framework assessing the capacity of educational systems or institutions to adopt and integrate AI.

Appendix B: Acronyms and Abbreviations

Acronym	Full Form
AI	Artificial Intelligence
NEP	National Education Policy
UGC	University Grants Commission
NSDC	National Skill Development Corporation
MoE	Ministry of Education (India)
NITI Aayog	National Institution for Transforming India
CBSE	Central Board of Secondary Education
HEIs	Higher Education Institutions
LMS	Learning Management System
NLP	Natural Language Processing
MOOCs	Massive Open Online Courses
NDEAR	National Digital Education Architecture
DPDP Act	Digital Personal Data Protection Act
NETF	National Educational Technology Forum
SID	Skill India Digital (Platform)
AI+X	AI integrated with cross-disciplinary domains
DIKSHA	Digital Infrastructure for Knowledge Sharing
PAL	Personalized Adaptive Learning
VSK	Vidya Samiksha Kendra
CoE	Centre of Excellence
SHG	Self Help Group
CSC	Common Service Centre
B. Ed	Bachelor of Education
CSR	Corporate Social Responsibility
NGO	Non-Governmental Organization
NASSCOM	National Association of Software and Service Companies
NSQF	National Skills Qualifications Framework
RAM	Readiness Assessment Methodology (UNESCO)
DIC	Digital India Corporation



About ASSOCHAM

ASSOCHAM initiated its endeavor of value creation for Indian industry in 1920. It brings in actionable insights to strengthen the Indian ecosystem, leveraging its network of more than 4,50,000 members, of which MSMEs represent a large segment. With a strong presence in states, and key cities globally, ASSOCHAM also has more than 400 associations, federations and regional chambers in its fold.

Aligned with the vision of creating a New India, ASSOCHAM works as a conduit between the industry and the Government. The Chamber is an agile and forward-looking institution, leading various initiatives to enhance the global competitiveness of the Indian industry, while strengthening the domestic ecosystem. With more than 100 national and regional sector councils, ASSOCHAM is an impactful representative of the Indian industry. These Councils are led by wellknown industry leaders, academicians, economists and independent professionals. The Chamber focuses on aligning critical needs and interests of the industry with the growth aspirations of the nation.

ASSOCHAM is working hand in hand with the government, regulators and national and international think tanks to contribute to the policy making process and share vital feedback on implementation of decisions of far-reaching consequences. In line with its focus on being future-ready, the Chamber is building a strong network of knowledge architects. Thus, ASSOCHAM is all set to redefine the dynamics of growth and development in the technology-driven 'Knowledge-Based Economy'. The Chamber aims to empower stakeholders in the Indian economy by inculcating knowledge that will be the catalyst of growth in the dynamic global environment.

Vision

Be the knowledge architect for the Indian economy, with a focus on strengthening India's domestic ecosystem and enhancing global competitiveness.

Vision

Be the knowledge architect for the Indian economy, with a focus on strengthening India's domestic ecosystem and enhancing global competitiveness.

Mission

Its mission is to impact the policy and legislative environment so as to foster balanced economic, industrial and social development.

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