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Inculcating Artificial Intelligence in Teaching Methodology Merits, Demerits and the Road Ahead for Indian Higher Education

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Abstract
Artificial Intelligence (AI) is no longer an experimental add-on to the classroom; it is fast becoming a structural feature of how higher education institutions plan, deliver and assess learning. This article examines how AI can be inculcated into teaching methodology, weighs its principal merits and demerits with illustrative examples, situates the discussion within the Indian regulatory context governed by the University Grants Commission (UGC) and the National Education Policy (NEP) 2020, and closes with a set of practical recommendations for university leadership. Drawing on my experience as Registrar of the University of Patanjali and my earlier tenures at Rai University, Jaipur National University and Swami Vivekanand Subharti University, the article also outlines a governance-first approach to AI adoption that Indian universities can adapt to their own context.

1. Introduction: A New Inflection Point in Pedagogy

Teaching methodology has been reshaped repeatedly by technology — from the blackboard to the overhead projector, from the OHP to the smart classroom, and from the smart classroom to the Massive Open Online Course (MOOC). AI represents the next, and arguably the most consequential, of these shifts because it does not merely change the medium of instruction; it changes the relationship between the teacher, the learner and the content itself. Adaptive learning platforms, AI tutoring systems, automated assessment engines and generative AI writing and research assistants are moving from pilot projects to everyday classroom tools.

Industry and academic commentary through 2026 frames this shift as one of the defining EdTech trends of the year, with institutions moving from asking whether AI belongs in the classroom to asking how it can be deployed responsibly and effectively across teaching, learning and administration.

For a university Registrar, this is not merely a pedagogical question but an institutional one — it touches curriculum design, examination integrity, data governance, faculty development and the university's brand as a place of rigorous, ethical scholarship.

2. What "Inculcating AI in Teaching Methodology" Actually Means

Inculcating AI in teaching methodology is broader than installing software. It spans four layers of institutional practice:

1. Content and curriculum layer: AI-assisted content curation, adaptive courseware, and generative tools that help faculty design case studies, quizzes and rubrics faster.
2. Delivery layer: AI tutoring systems, chatbots and virtual teaching assistants that extend instruction beyond the scheduled classroom hour.
3. Assessment layer: automated grading, plagiarism and AI-content detection, and analytics that flag learning gaps early.
4. Administrative layer: AI-enabled admissions counselling, timetable optimisation, attendance analytics and student support — the layer a Registrar's office typically owns.

A coherent AI policy for teaching methodology has to address all four layers together; institutions that treat AI purely as a classroom tool, without governance at the assessment and administrative layers, tend to run into the integrity and equity problems discussed in Section 4.

3. Merits of Inculcating AI in Teaching Methodology

3.1 Personalised and Adaptive Learning

AI systems can continuously assess a learner's progress and adjust the pace, sequence and difficulty of content in real time, rather than confining instruction to fixed classroom moments. This individualisation is particularly valuable in large, diverse classrooms typical of Indian universities, where student preparedness varies widely across a single cohort.

Example: An intelligent tutoring system in an engineering mathematics course can identify that a student consistently struggles with integration by parts, and automatically serve additional worked examples on that sub-topic before the student attempts the next module — something a single faculty member handling 120 students cannot do for every learner simultaneously.

3.2 Improved Learning Outcomes and Engagement

Reported outcomes from AI-powered instruction include measurable gains in test performance and course completion when adaptive systems are used to close knowledge gaps early, alongside higher engagement attributed to instant feedback and round-the-clock availability of support.

Research on large language models in higher education similarly points to gains in personalised learning, tailored student support, teaching efficiency, greater engagement, and improved comprehension and academic outcomes, with the effect said to be strongest in cognitively demanding subjects such as STEM, where AI can help regulate cognitive load and reinforce memory retention.

3.3 Reduced Administrative Load on Faculty

Automated grading of objective and semi-objective assessments, AI-assisted question-paper generation, and analytics dashboards for attendance and performance free faculty time for higher-value activities such as mentoring, research supervision and curriculum innovation. This is especially relevant as institutions face rising teacher workload and burnout, with AI positioned as one practical way to ease staffing pressure and let educators focus on teaching and student engagement rather than paperwork.

3.4 Accessibility and Inclusion

Text-to-speech, real-time translation, and AI-generated simplified summaries widen access for students with disabilities, first-generation learners, and non-native English speakers — a significant consideration for multilingual Indian campuses drawing students from different linguistic backgrounds.

Example: An AI-driven English-language support tool can offer real-time, personalised language instruction to first-year students from vernacular-medium schooling backgrounds, helping level the playing field before they attempt core subject examinations conducted in English.

3.5 Data-Driven Institutional Decision-Making

Beyond the classroom, AI analytics help university administration — including the Registrar's office — with early-warning systems for at-risk students, optimised timetabling, resource allocation, and evidence-based curriculum review, supporting the broader move toward smarter, data-informed learning ecosystems in higher education.

4. Demerits and Risks of Inculcating AI in Teaching Methodology

4.1 Over-Reliance and Superficial Learning

A systematic review of AI tools in programming education found that overreliance leading to superficial learning was reported in roughly two-thirds of the studies examined, alongside implementation barriers noted in the great majority of cases. When students lean on generative AI to produce answers rather than to scaffold their own reasoning, foundational skills such as problem decomposition and independent writing can atrophy.

Example: A student who habitually asks a generative AI tool to draft an entire assignment, rather than to review or critique a draft they wrote themselves, may pass the assignment while failing to internalise the underlying competency it was designed to build.

4.2 Academic Integrity and Authorship Concerns

Indian regulators are already grappling with this. The UGC's 2018 Plagiarism Regulations, built around textual similarity thresholds, were not designed with generative AI in mind, and unacknowledged AI-generated content in theses and assignments is now commonly treated as a form of academic misconduct even when the text is factually accurate and properly cited to its sources. Universities are increasingly expected to require explicit disclosure of AI assistance and to apply similarity or AI-detection screening before submissions are evaluated.

4.3 Accuracy, Bias and “Hallucination” Risk

Generative AI tools can produce plausible-sounding but factually incorrect content, and can encode biases present in their training data. Used uncritically in teaching materials or student research, this creates real risk to both academic quality and institutional reputation, alongside broader concerns around privacy and accuracy that commentators flag as needing thoughtful, ongoing management rather than a one-time policy fix.

4.4 The Digital Divide and Equity Gap

Under-resourced institutions and students from weaker socio-economic backgrounds may lack reliable devices, connectivity or digital literacy to benefit from AI-enabled instruction, which risks widening rather than narrowing existing educational disparities — a concern repeatedly flagged in analyses of AI adoption across differently resourced institutions. Bridging this divide is itself identified as a policy priority for AI in education going into 2026.

4.5 Data Privacy and Cost

AI platforms that track granular student performance data raise questions of data ownership, consent and security that university IT and legal offices are often not yet equipped to answer. Licensing costs for enterprise-grade adaptive learning and proctoring platforms can also be substantial, and recurring, for institutions already working within tight budgets.

4.6 Faculty Readiness and Change Resistance

Many faculty members have not been trained to design AI-integrated pedagogy or to evaluate AI-assisted student work fairly. Without structured training and digital literacy support, adoption tends to be uneven — some departments race ahead while others resist AI altogether, producing an inconsistent student experience across a single university.

5. The Indian Regulatory and Policy Context

India's Union Budget for 2026-27 raised overall education spending to roughly ₹1.39 lakh crore, an increase of about 8.27 percent, with higher education allocated close to ₹55,727 crore and the UGC about ₹3,709 crore, alongside a stated push toward AI-enabled learning, stronger research support and wider access to global academic journals. This signals that AI adoption in Indian higher education is now a funded national priority rather than an optional institutional experiment.

At the same time, the UGC's academic-integrity architecture is being tested by generative AI faster than it is being updated. As of 2026, the operative framework remains the UGC (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018, applied by most universities to treat undisclosed AI-generated text as a form of plagiarism, even though the regulation predates large language models and was written around textual similarity rather than machine authorship. For Registrars and examination authorities, the practical implication is clear: institutional AI policy must currently be built through internal ordinances, examination bye-laws and disclosure requirements, layered on top of the existing UGC framework, rather than waiting for a dedicated central regulation.

6. Recommendations: A Governance-First Approach

Based on my experience administering academic governance across four universities, I would recommend that institutions inculcate AI into teaching methodology through a phased, policy-anchored approach rather than ad-hoc adoption by individual departments:

5. Institute a formal AI-in-Academics Policy, approved by the Academic Council, that defines permitted and prohibited uses of AI in coursework, assignments, theses and examinations, with mandatory disclosure requirements.

6. Establish a Faculty Development Programme (FDP) track dedicated to AI-integrated pedagogy, covering both the use of AI tools and the ethics of evaluating AI-assisted student work.
7. Pilot adaptive-learning and AI-tutoring tools in a small number of high-enrolment, high-attrition-risk courses before scaling institution-wide, with outcomes reviewed each semester.
8. Invest in device and connectivity support for economically weaker students so that AI-enabled learning narrows, rather than widens, the access gap.
9. Align internal ordinances with UGC's plagiarism and academic-integrity framework, updating examination bye-laws to explicitly cover AI-assisted authorship.
10. Set up a data governance protocol, in consultation with the university's IT and legal cells, before any AI platform handling student data is procured.

7. Conclusion

AI in teaching methodology is neither a panacea nor a threat to be resisted; it is a powerful instructional tool whose value depends entirely on the governance wrapped around it. Institutions that pair thoughtful policy, faculty training and equity safeguards with AI adoption stand to gain personalised learning, improved outcomes and administrative efficiency. Institutions that adopt AI without this scaffolding risk academic-integrity breaches, widened inequity and superficial learning. For Indian universities operating within the UGC and NEP 2020 framework, the task ahead is to build that scaffolding deliberately, department by department, rather than leaving it to chance.

About the Author

Dr. Deepesh Kumar Saxena is the Registrar of the University of Patanjali, Haridwar, where he leads academic governance, examination administration and institutional policy — including the university's approach to integrating emerging technologies such as AI into teaching and assessment frameworks in line with UGC norms.

He brings to this role administrative leadership experience as Registrar at three other institutions — Rai University, Ahmedabad; Jaipur National University, Jaipur; and Swami Vivekanand Subharti University, Meerut — giving him a comparative, cross-institutional perspective on how Indian universities of different sizes and academic profiles have approached technology-led reform in teaching methodology and examination systems.

His academic credentials include a Ph.D. in Management, an MBA in Human Resources, a Post-Graduate Diploma in Intellectual Property Rights, and a Diploma in Hotel Management & Catering Technology — a combination that grounds his approach to AI adoption in both academic administration and human-capital development, recognising that technology initiatives succeed or fail on the strength of faculty readiness and change management as much as on the tools themselves.

Dr. Saxena writes and speaks on university governance, academic policy and the responsible modernisation of higher education administration in India.

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