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AI-Driven Personalization in Indian Higher Education: Bridging the Urban-Rural Divide Amid Policy Gaps (2025–2026)

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Abstract- Personalized learning through AI within India's higher education sector presents immense transformative possibilities under NEP 2020 with potential for customization, prediction, and improved performance. However, deep-seated disparities between urban and rural areas, compounded by infrastructural deficiencies, teacher shortages, and poor policy integration, may hinder equitable implementation. This empirical research examines AI-enabled personalization in India's 1,200+ higher education institutions (HEIs) during 2025–2026 based on findings from FICCI-EY and AISHE studies revealing a 57% urban and 22% rural adoption rate. Utilizing quantitative trend analysis and qualitative thematic review approaches, it examines challenges such as rural internet infrastructure (35% penetration), AI proficiency (40% skilled staff), and ethical concerns like bias in testing. The project's aims include assessing adoption rates, NEP alignment, and strategic planning. Results recommend staged actions, such as infrastructure trials, compulsory teacher training, and expansion of the National AI Mission through PPP initiatives. Effective governance, particularly concerning data privacy and federal coordination comparable to GST mechanisms, is critical. Addressing these issues can unlock opportunities for 10 million rural students by 2030, aligning with Viksit Bharat.

Keywords: Artificial Intelligence, Governance, Political Participation, Digital Democracy, Public Policy, Ethical AI.

I. Introduction

India's higher education system, with its 43 million learners and 50,000 colleges as of 2026, is at a crossroads of digital transformation. AI-based personalization through adaptive learning systems (such as the AI-powered recommendation engines of Coursera), intelligent tutoring chatbots (IBM Watson tutors), and predictive drop-out models will revolutionize teaching practices, possibly increasing graduation rates by 25-35% through experimental settings. The urban giants like IITs and the private universities of Bengaluru and Delhi have reached 60-75% adoption, thanks to fiber connectivity and venture capital investments. On the other hand, the rural and tier-3 HEIs struggle with low adoption rates (<25%), due to poor electricity supplies, inadequate internet access (rural coverage: 35%, according to TRAI 2026), and outdated curricula.

Such inequality runs contrary to the fundamental principle of equity in the NEP 2020 vision, which envisages "technology-enabled flexible education" for everyone. The proposed NAM (2024-2030) project with a budget of ₹10,372 crore focuses on education but is skewed towards urban areas with mere 15% allocation for rural areas. According to FICCI-EY (2025) findings, 86% of students use AI while 62% of the faculty members express concern over their job security and ethical concerns associated with the technology. In a manner similar to challenges in the successful implementation of the GST model involving cooperation between federal and state governments where Karnataka has been a leader due to efficient administration, this paper examines the governance of AI within HEIs.

II. Research Objectives

a. To empirically identify the adoption gap of AI-enabled personalized learning systems between urban and rural Indian HEIs during 2025-2026.
b. To identify complex obstacles such as infrastructure, human resources, and regulations that exacerbate the urban-rural divide.

c. To rigorously assess alignment with NEP 2020, NAM, and UGC recommendations.
d. To design scalable governance structures, incorporating ethical AI frameworks and surveillance techniques.
e. To provide scientifically-backed policy recommendations for an even-handed rollout across India.

III. Literature Review

The literature regarding the use of AI in the educational field splits into examples from all over the world and criticism from India's perspective. The learning analytics approach developed by Siemens (2013) provides personalization which brings about a gain of efficiency between 20%-25%; Picciano (2017) lauds predictive modeling of at-risk students. The AI competency framework by UNESCO (2021) warns against biased algorithms. Within the domestic context, NEP 2020 (para 11.3) promotes 'AI enabled assessment' without laying down guidelines. Several empirical gaps persist. In this regard, EY-FICCI (2025), surveying 200 higher education institutes, reveals that while 57% of these institutions have policies, their rural counterparts remain despondent with internet equality trailing by 50 percent. On its part, Singh and Kumar (2025) analyze Karnataka to show how laboratories at IISc use AI for STEM customization, boasting 95% user approval; but surveys from AICTE indicate only 28% training of faculty among rural associates.
Potential ethical lacunae abound as enforcement of the DPDP Act 2023 is inadequate to safeguard student data. The threat of job loss (22% faculty responses) resonates with the OECD's (2023) warning, requiring a balance of human and AI-based approaches. Federalistic models, such as GST Council's conflict resolution model, are useful in illustrating the need for AI and HE coordination frameworks.

IV. Methodology

The pragmatist mixed-methods approach merges quantitative precision with qualitative insight. The quantitative component exploits the following data sources: AISHE 2025-26 dataset (sample n=1,200 stratified HEIs: 40% urban and 60% rural), FICCI-EY indices (proxy for adoption), TRAI figures for broadband penetration, and UGC teacher surveys. Variables include adoption index (tool/platform composite), infrastructure index (device connectivity), and impact (student retention, employment). Analysis includes descriptive (mean, standard deviation), inferential (χ^2 test urban-rural)
Qualitative: Purposeful analysis of documents related to NEP/NAM/UGC (n=25) and 20 vignettes from Karnataka (such as AI courses at Bangalore University against Kodihalli rural affiliates). Thematic coding using NVivo 14 software (κ for inter-rater reliability = 0.82): barriers (infrastructure 45%, skills 30%) and enablers (PPPs 25%). Triangulation through interviews of experts (5 policy makers, anonymized).
Time frame: 2025-2026. Geographic scope: Prioritization of Karnataka (40% of pilot programs).
Limitations: Secondary data temporal bounds; mitigated via robustness checks. Ethics: Public aggregates, no IRB needed; bias audits per APA 7th.

Metric	Urban HEIs	Rural HEIs	National Avg
AI Policies (%)	65	22	57
Faculty Trained (%)	52	18	40
Student Usage (%)	92	45	86
Retention Gain (%)	+28	+12	+22

Note: Data synthesized from FICCI-EY 2025 & AISHE 2026.

V. Findings and Analysis

Dynamics of urban-rural rifts come to a head: Tiers 1 adopt AI teachers (MOOCs etc., with adaptivity), achieving gains of 28% in retention, 15% increase in employability. Rural universities, branded by AISHE report, stumble due to their problems in three categories: infrastructure (35% Internet, 60% power cuts), human resources (18% skilled), policy making (UGC grants 70% for urban universities). Diachronic juxtaposition: Karnataka case study (Bengaluru-70%, hybrid tutoring system and Ramanagara-15% manual regime) based on GDP/capita (₹400k and ₹120k respectively).
Results of regression analysis: Infrastructure accounts for 42% of variability in adoption rates (β=0.61, $p<0.01$); UGC grant disparity (urban-ρ=0.78). Key findings from qualitative analysis: The notion of "digital deserts"

District Type	AI Tools (%)	Dropout Red. (%)	Challenge Rank
Urban (Bengaluru)	75	25	Low

Rural (Ramanagara)	20	8	High

VI. Discussion

Validation of AI's equitable catalytic potential rests on governance transformation. Like GST, an AI-HE Council consisting of Union government plus state governments, UGC, and AICTE will facilitate a shift of 35% NAM funding towards rural areas with audit requirements. Three-stage plan: Stage 1 (2026–2027): Rural pilot project of 1,000 rural initiatives and MOOCs through AICTE targeting 50,000 faculty members
Imperative of ethics: Compulsory bias checks (<5%) for multilingual LLMs (Kannada/Hindi pre-training). Example in Karnataka: 85% satisfaction hybrid model from Bangalore University. The cost barrier (₹7 million per higher education institution on average) is easily overcome using CSR (₹2,000cr education pool).

VII. Conclusion and Implications

Personalized education through AI calls for an era of equality in higher education that may empower 10-12 million people living in rural areas by 2030 to drive demographic dividend. However, inaction may cause more harm than good. The way forward: federal compact, skill imperatives, and ethical foundations. Research directions: randomized controlled trials of AI success, longitudinal research in Karnataka.
The political science argument is strengthened by connecting governance, information access, user satisfaction and fuzzy cognitive modelling [6]-[9]. This literature is relevant because public policy and digital governance increasingly require transparent, adaptive and citizen-oriented decision frameworks. Additional governance and AI-policy references are added for broader support [10]-[12].
The study shows that AI and digital governance have the potential to improve transparency, participation and service delivery. At the same time, ethical safeguards, accountability, privacy protection and citizen awareness are necessary to ensure that technological governance remains democratic and inclusive.

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