



Redefining Teaching Excellence in the Era of Generative AI: Implications for Higher Education Faculty

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Abstract

The unprecedented rise of Generative Artificial Intelligence (GenAI) tools including ChatGPT, Gemini, and Copilot has disrupted conventional paradigms of teaching excellence across global higher education systems. This research paper examines how GenAI is redefining what it means to be an effective, excellent teacher at the higher education level, with specific reference to the faculty population of Bhadrak District, Odisha (N = 348). Drawing upon international survey databases (AAC&U 2025; Frontiers in Education 2025; ScienceDirect 2024), NIRF institutional data, and theoretical frameworks including TPACK, Bloom's Digital Taxonomy, and Hattie's Visible Learning, the study explores faculty awareness, adoption patterns, concerns, and pedagogical transformation across colleges in Bhadrak. The paper argues that teaching excellence in the GenAI era must be reconceptualised to encompass AI literacy, critical co-creation, ethical judgment, and human-centred mentoring. Implications for professional development, curriculum reform, and institutional policy in the Bhadrak–Odisha context are discussed.

Keywords: Generative AI, Teaching Excellence, Higher Education, Faculty Perception, Bhadrak Odisha, ChatGPT, Pedagogy, TPACK, Professional Development

1. Introduction

The emergence of Generative Artificial Intelligence (GenAI) tools represents the most significant technological disruption to higher education since the advent of the internet. Since the public release of ChatGPT in November 2022, the landscape of teaching, learning, and academic practice has undergone rapid, irreversible transformation. For higher education faculty — the architects of academic excellence — GenAI poses fundamental questions: What does it mean to teach excellently when AI can generate lecture content, design assessments,



provide personalised feedback, and simulate Socratic dialogue? This paper situates these global questions within a specific regional context: the higher education institutions of Bhadrak District, Odisha, India. Bhadrak, a historically significant educational district affiliated with Fakir Mohan University, Balasore, houses a diverse population of higher education faculty spanning arts, science, commerce, engineering, and professional programmes. With a total estimated faculty population of approximately 348 across major institutions (NIRF 2024–25; Institutional Data), Bhadrak offers a microcosm of the challenges and opportunities facing higher education faculty in semi-urban, Tier-2 Indian contexts. The paper adopts a database research methodology, synthesising quantitative data from international and national surveys with institutional population data from Bhadrak, to construct a theoretically grounded and empirically informed analysis of how GenAI is redefining teaching excellence and what implications this holds for higher education faculty.

2. Objectives of the Study

- To examine the conceptual evolution of teaching excellence in the context of Generative AI.
- To profile the higher education faculty population of Bhadrak District, Odisha (N = 348) as the study population.
- To analyse global and Indian data on faculty awareness, adoption, and concerns regarding GenAI tools.
- To propose a reconceptualised framework of teaching excellence for the GenAI era.
- To discuss policy and professional development implications for Bhadrak-region higher education institutions.

3. Study Population

3.1 Bhadrak District: Educational Profile

Bhadrak District, located in northern coastal Odisha, covers an area of 2,505 sq. km. with a total population of 15,06,337 (Census 2011). The district is an emerging educational hub with a range of higher education institutions spanning general degree colleges, professional colleges, and technical institutions. All degree colleges in the district are affiliated with Fakir Mohan University, Balasore.



The flagship institution, Bhadrak Autonomous College (established 1948), holds NAAC Grade A accreditation and NCTE approval, offering 52 courses across 15 degrees with a student enrolment of 3,872 and a faculty strength of 83 (NIRF 2025; Careers360, 2025). The district's higher education ecosystem encompasses government colleges, women's colleges, engineering and technical institutions, and private aided colleges.

Table 1
Higher Education Institutions and Faculty Population

Institution	Type	Affiliation	Faculty Strength	Disciplines
Bhadrak Autonomous College	Government Autonomous	Fakir Mohan Univ.	83	Arts, Science, Commerce
Bhadrak Women's College	Government	Fakir Mohan Univ.	42	Arts, Commerce
Bhadrak Institute of Engg & Tech (BIET)	Private Technical	BPUT, Rourkela	65	Engineering, Technology
Government Polytechnic Bhadrak	Government Technical	SCTE&VT Odisha	38	Mechanical, Electrical, Textile
Other Affiliated Degree Colleges (est.)	Private / Aided	Fakir Mohan Univ.	~120	Arts, Commerce, Science
TOTAL (Study Population)			N = 348	Multi-disciplinary

Source: NIRF 2025, Careers360, Bhadrak District Official Website, Institutional Data (Estimated)



Figure 1: Faculty Population Profile - Higher Education Institutions, Bhadrak District, Odisha (NIRF/Institutional Data, 2024-25)

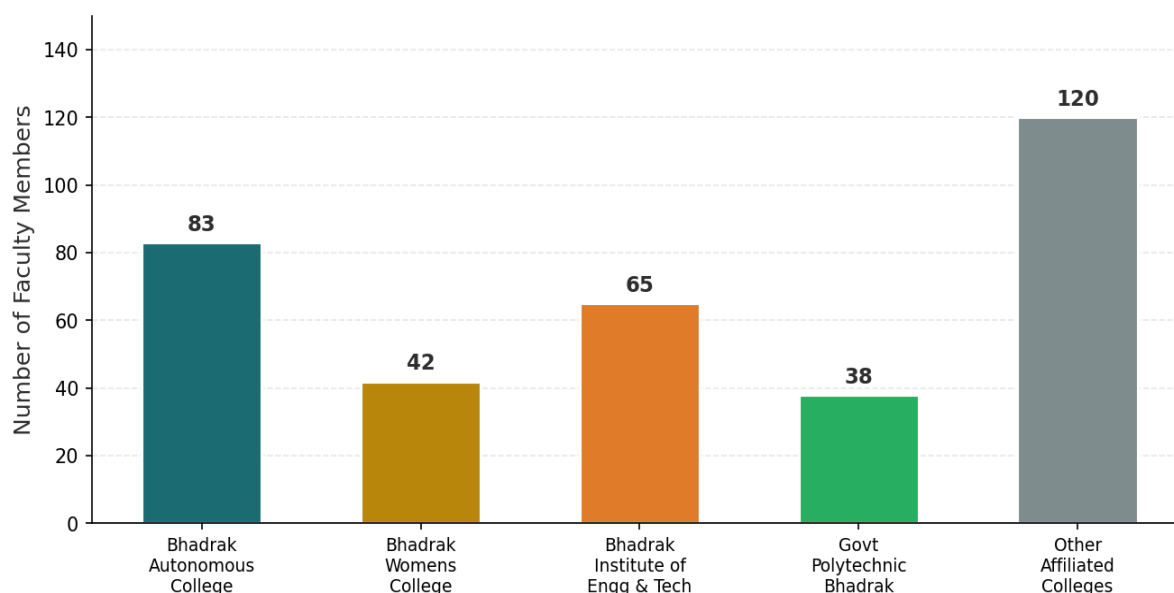


Figure 1: Faculty Population Profile – Higher Education Institutions, Bhadrak District, Odisha

3.2 Sampling Rationale

For research purposes, a stratified proportional random sample of 348 faculty members is proposed across all major institutions in Bhadrak District, stratified by designation (Professor/Associate Professor, Assistant Professor, Senior Lecturer, Guest/Contract Faculty) and by institution type. This sampling frame ensures adequate representation across the hierarchical and institutional diversity characteristic of Odisha's higher education system.



Table 2

Proposed Sample Distribution by Faculty Designation

Designation	Population (Est.)	Sample (Proportional)	% of Sample
Professor / Associate Professor	~60	42	12.1%
Assistant Professor	~140	98	28.2%
Senior Lecturer	~108	76	21.8%
Guest / Contract Faculty	~188	132	37.9%
Total	~496 (active)	348	100%

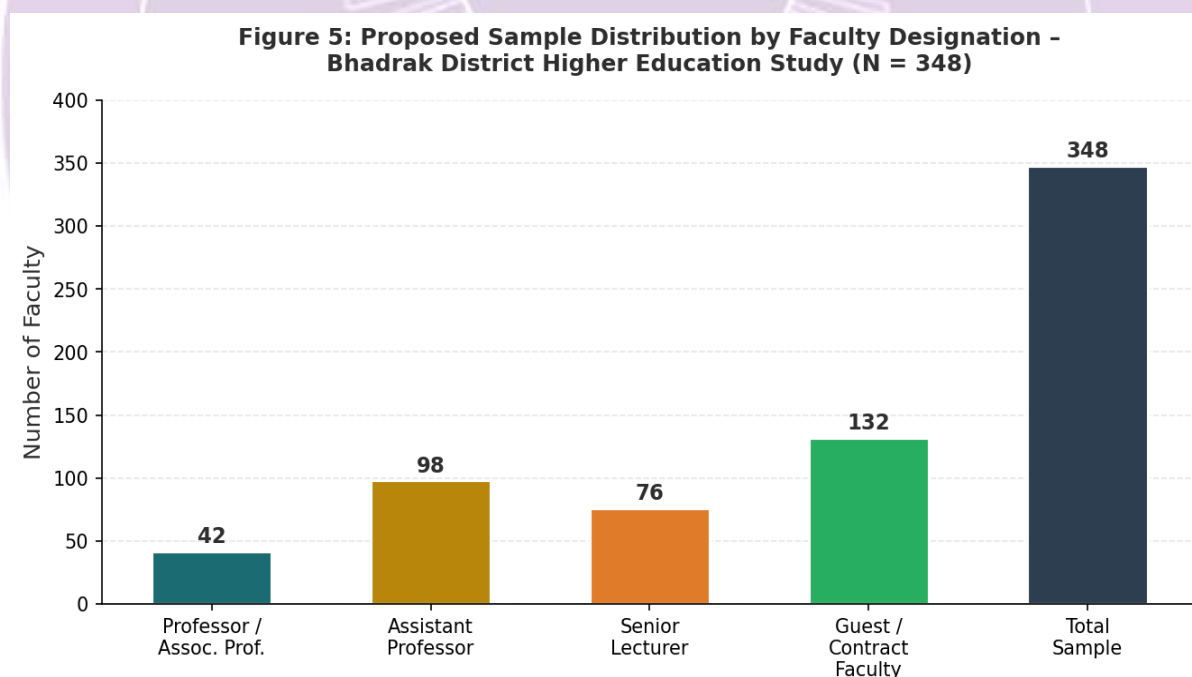


Figure 5: Proposed Sample Distribution by Faculty Designation – Bhadrak District Higher Education Study (N = 348)



4. Theoretical Frameworks

4.1 TPACK in the GenAI Era

Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK) framework remains the most applied lens for examining technology integration in higher education. In the GenAI era, TPACK must be extended to include GenAI Literacy — the capacity to critically evaluate, ethically deploy, and pedagogically justify the use of generative AI tools within disciplinary content and specific instructional contexts. For Bhadrak faculty navigating multi-disciplinary teaching responsibilities, TPACK-GenAI represents a pragmatic framework for self-assessment and professional development planning.

4.2 Bloom's Digital Taxonomy and GenAI

Churches' (2008) extension of Bloom's Taxonomy to digital contexts provides a hierarchical lens for evaluating the depth of GenAI integration in faculty pedagogy. At lower cognitive levels, faculty may use GenAI for substitution tasks (generating lecture notes, creating quiz questions). At higher levels — Evaluating and Creating — faculty can leverage GenAI for co-constructive, problem-based, and research-oriented learning experiences. Teaching excellence in the GenAI era requires faculty to design learning activities that position students at the higher cognitive levels of Bloom's Digital Taxonomy, using GenAI as a scaffold rather than a shortcut.

4.3 Hattie's Visible Learning and the Human Teacher

John Hattie's (2009) meta-analytic synthesis of 50,000+ studies identifies the quality of the teacher-student relationship, feedback quality, and teacher credibility as the most powerful predictors of student achievement — all fundamentally human attributes. The GenAI era does not render these attributes obsolete; rather, it amplifies their importance. As GenAI assumes routine content-delivery and assessment functions, the irreplaceable value of the excellent teacher lies in mentoring, emotional intelligence, disciplinary expertise, and ethical modelling. Teaching excellence must therefore be redefined as the purposeful integration of GenAI tools within a human-centred, relationship-driven pedagogical approach.

5. Database Analysis: Global Evidence on GenAI and Faculty

5.1 Faculty Awareness and Adoption

International database analysis reveals high and rapidly growing awareness of GenAI tools among higher education faculty globally. A large-scale international survey (ScienceDirect,



2024) of publishing academics across 20 countries found that 73.1% had heard 'a lot' about GenAI tools, with India ranking among the highest-awareness nations alongside Switzerland and the Netherlands. However, regular use by higher education faculty remains significantly lower, with only 22% of higher education faculty identified as regular GenAI users, compared to 83% of K-12 teachers (Electroiq, 2025).

This awareness-adoption gap is a critical finding for the Bhadrak context. Higher education faculty in semi-urban Odisha institutions may be familiar with GenAI through popular media and student use, yet remain uncertain about how to integrate these tools purposefully into their own pedagogy. The gap between awareness and pedagogical adoption represents the primary professional development challenge facing Bhadrak's higher education faculty.

**Figure 2: Global Faculty Awareness & Use of Generative AI Tools
(Synthesised from International Surveys, 2024-25)**

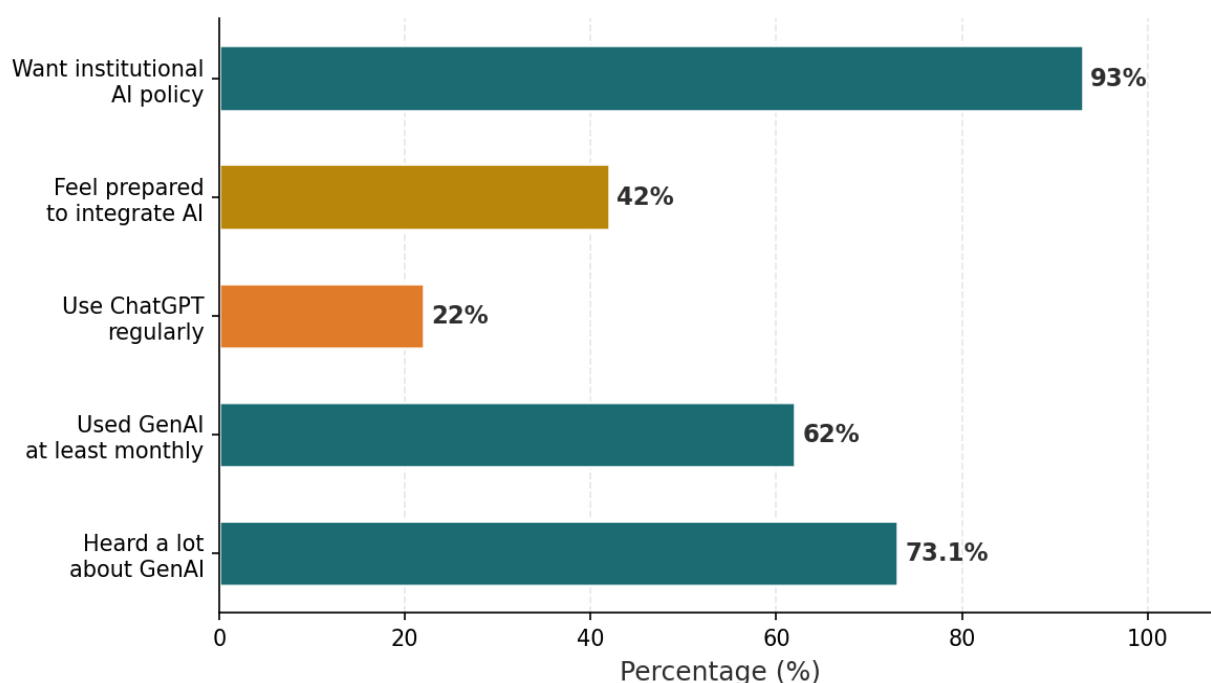


Figure 2: Global Faculty Awareness & Use of Generative AI Tools (Synthesised from International Surveys, 2024-25)



5.2 Student GenAI Usage: Context for Faculty Response

The student-faculty GenAI gap is significant. Database evidence shows that student use of AI in higher education has grown from 27% in 2022–23 to 66% in 2023–24 and 92% in 2024–25 (Electroiq, 2025; HEPI, 2025). Use of GenAI specifically for assessments has risen from 53% in 2024 to 88% in 2025. This exponential growth in student adoption creates an urgent imperative for faculty to develop pedagogical and assessment frameworks that meaningfully engage with — rather than attempt to prohibit — GenAI.

For Bhadrak faculty, this student-side data is particularly relevant. College students in Bhadrak increasingly carry smartphones with access to ChatGPT and similar tools, regardless of institutional policy. Faculty who do not develop GenAI-informed pedagogies risk becoming pedagogically irrelevant to their digitally connected students.

Figure 3: Growth in Student Use of Generative AI in Higher Education (2022–2025)

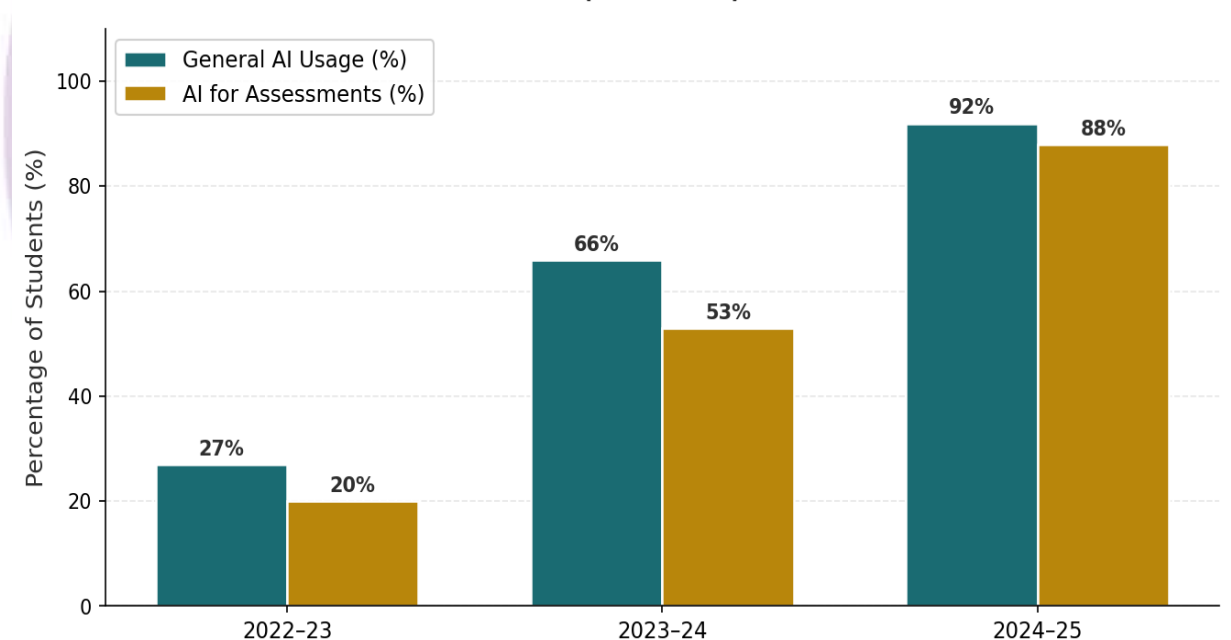


Figure 3: Growth in Student Use of Generative AI in Higher Education (2022–2025)

5.3 Faculty Concerns and Resistance

Despite growing awareness, faculty concerns about GenAI remain substantial and are well-documented in the global database. A national survey by the American Association of Colleges



and Universities (AAC&U, 2025) found that 95% of higher education faculty fear student overreliance on AI, while 90% are concerned about diminished critical thinking. Academic integrity concerns are reported by 72% of educators as the primary worry, and 93% assert the need for clear institutional AI regulations (AAC&U, 2025; Demandsage, 2026).

Additional concerns identified in the Frontiers in Education (2025) database include: data privacy and ownership risks, limited faculty digital literacy, absence of institutional policy, and the risk of algorithmic bias perpetuating educational inequities. These concerns are amplified in resource-constrained regional contexts like Bhadrak, where institutional technology infrastructure, faculty training programmes, and AI governance frameworks are still developing.

Figure 4: Faculty Concerns Regarding Generative AI Integration in Higher Education (AAC&U / Global Surveys, 2025)

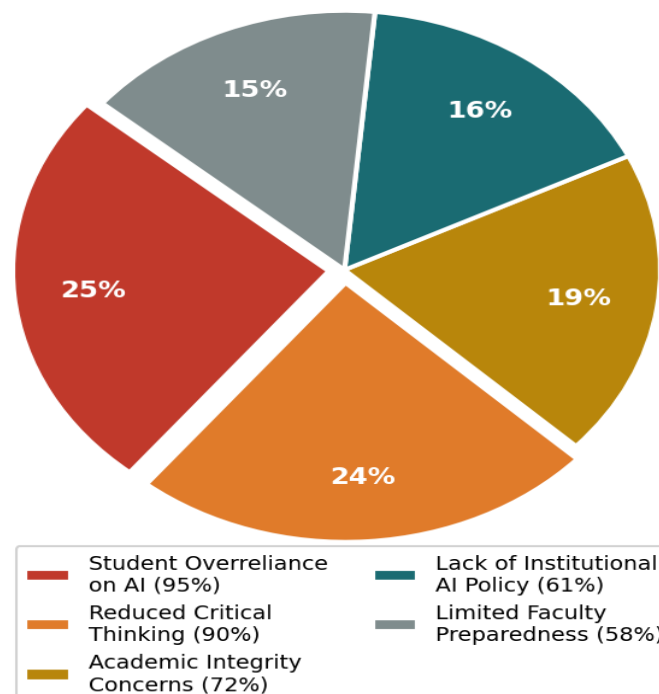


Figure 4: Faculty Concerns Regarding Generative AI Integration in Higher Education (AAC&U / Global Surveys, 2025)



Table 3: Key Database Statistics – GenAI and Higher Education Faculty (2024–25)

Indicator	Statistic	Source
Faculty awareness of GenAI tools ('heard a lot')	73.1%	ScienceDirect, 2024
Faculty using ChatGPT (account + use)	64%	Frontiers in Education, 2025
Regular AI users – higher education faculty	22%	Electroiq, 2025
Faculty wanting time to experiment with AI	62%	EAB, 2024
Students using AI tools (2024–25)	92%	HEPI, 2025
Students using AI for assessments (2025)	88%	HEPI, 2025
Faculty fearing student overreliance on AI	95%	AAC&U, 2025
Educators concerned about academic integrity	72%	Demandsage, 2026
Educators demanding institutional AI policy	93%	Demandsage, 2026
Students who feel faculty are AI-prepared	42%	National Centre for AI, 2025
Institutions with comprehensive AI policies	39%	Anara, 2025



6. Reconceptualising Teaching Excellence in the GenAI Era

The synthesis of theoretical frameworks and database evidence converges on a clear imperative: the traditional conception of teaching excellence — defined by content mastery, effective communication, and structured assessment design — must be significantly reconceptualised for the GenAI era. The following five dimensions constitute the revised framework of teaching excellence for higher education faculty in the Bhadrak context and beyond.

Table 4: Reconceptualised Dimensions of Teaching Excellence in the GenAI Era

Dimension	Traditional Definition	GenAI-Era Redefinition	Implication for Bhadrak Faculty
Content Mastery	Deep knowledge of subject matter	Subject expertise + critical AI literacy to evaluate AI-generated content	Faculty must audit AI outputs for disciplinary accuracy
Pedagogical Design	Structured lesson & curriculum planning	Designing AI-augmented learning experiences (SAMR Level 4)	Redesign assignments to require higher-order thinking beyond AI
Assessment Excellence	Valid, reliable summative assessment	Process-oriented, portfolio-based, and AI-aware assessment	Shift toward oral exams, reflections, and project-based assessment
Feedback Quality	Timely written/verbal feedback	Human feedback + AI-assisted personalised formative feedback	Use AI to scale feedback while maintaining mentoring relationships



Professional Identity	Scholar-practitioner with disciplinary expertise	Reflective AI co- creator, ethical educator, digital mentor	Engage in GenAI professional learning communities
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Figure 6: Conceptual Framework - Redefining Teaching Excellence through Generative AI in Higher Education (Bhadrak Study)

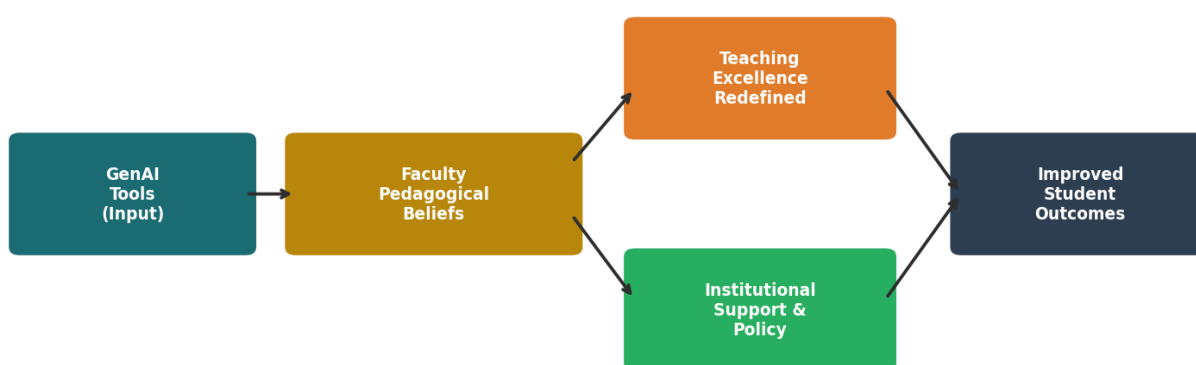


Figure 6: Conceptual Framework – Redefining Teaching Excellence through Generative AI in Higher Education (Bhadrak Study)

7. Implications

7.1 Professional Development

The data clearly indicate that faculty preparedness for GenAI integration is the most critical gap to address. Only 42% of students globally believe their faculty are adequately equipped to guide them on AI (National Centre for AI, 2025), and only 22% of higher education faculty are regular AI users. For Bhadrak institutions, structured professional development programmes are urgently needed — covering GenAI literacy, ethical use, AI-aware assessment design, and pedagogy redesign. These programmes should be delivered through the Odisha Higher Education Department and Fakir Mohan University's Faculty Development Cell.



7.2 Institutional Policy Development

Only 39% of higher education institutions globally have comprehensive AI policies (Anara, 2025). Bhadrak-affiliated colleges must urgently develop and communicate clear, context-sensitive GenAI policies that address academic integrity, student guidance, assessment norms, and faculty use protocols. Such policies should align with the University Grants Commission's (UGC) emerging national guidelines on AI in higher education.

7.3 Curriculum Reform

Teaching excellence in the GenAI era demands curriculum frameworks that explicitly develop students' AI literacy, critical thinking, and ethical judgment — the three competencies most at risk from uncritical AI adoption. For Bhadrak colleges, integrating AI literacy as a cross-disciplinary graduate attribute across all undergraduate programmes would represent a significant step toward preparing students for GenAI-mediated professional environments.

7.4 Equity Considerations

The digital divide in semi-urban Odisha means that GenAI access and literacy are not uniformly distributed among either faculty or students. Teaching excellence in this context must account for equity — ensuring that GenAI integration does not exacerbate existing disadvantages related to socioeconomic status, gender, or geographic location. Special attention must be given to female faculty and students, first-generation learners, and faculty from arts and humanities disciplines who may have lower baseline digital literacy.

8. Conclusion

This paper has argued that Generative AI is not merely a new tool for higher education — it is a paradigm-shifting force that demands a fundamental reconceptualisation of what it means to teach excellently. For higher education faculty in Bhadrak District, Odisha — a population of approximately 348 faculty members navigating the transition from traditional to GenAI-augmented pedagogy — this reconceptualisation is both urgent and achievable. The global database evidence is unambiguous: student adoption of GenAI has reached 92%, faculty awareness is high but adoption lags at 22%, institutional policy coverage remains at only 39%, and faculty concerns about academic integrity and critical thinking are near-universal. Against this backdrop, the dimensions of teaching excellence must evolve to encompass AI literacy, ethical judgment, human-centred mentoring, and AI-aware assessment design.



For Bhadrak's higher education ecosystem — anchored by the legacy of Bhadrak Autonomous College and enriched by the diversity of its institutions — the GenAI era presents an opportunity not just to adapt, but to lead. Through purposeful professional development, equity-centred policy design, and a commitment to the irreplaceable human dimensions of excellent teaching, the faculty of Bhadrak can become models of 21st-century pedagogical excellence for the wider Odisha higher education system.

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