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Lead, Guide, Step Back: Redefining the Teacher's Role in an AI-Dominated World

Neeraj Saxena*

Artificial Intelligence (AI) is fundamentally redefining the educational landscape, necessitating a paradigmatic shift in the role of teachers from traditional knowledge providers to mentors, facilitators, and consciousness catalysts. This comprehensive analysis explores the transformation imperative in the age of AI, examines systemic dysfunctions plaguing current educational frameworks, highlights AI's simultaneously *disruptive* yet enabling role, and proposes a sophisticated three-stage model—Sage on the Stage, Guide by the Side, Pack at the Back—for strategic teacher repositioning. Drawing insights from extensive global and Indian case studies, longitudinal research data, and emerging pedagogical frameworks, this article outlines comprehensive policy recommendations aligned with the National Education Policy – 2020 (NEP 2020) and *Viksit Bharat* 2047, emphasising heutagogy, ethical AI integration, and transformative faculty development as critical enablers for an educational renaissance.

From Knowledge Gatekeepers to Wisdom Catalysts

The dawn of the 21st century has witnessed an unprecedented acceleration in technological advancement, fundamentally altering the fabric of human society. Perhaps nowhere is this transformation more profound than in the realm of education, where Artificial Intelligence (AI) is not merely introducing incremental changes but orchestrating a complete paradigmatic revolution. For centuries, teachers have been the primary custodians of knowledge, their authority firmly rooted in an era of information scarcity when access to learning resources was limited and centralised.

The industrial-age education system, conceived during the Second Industrial Revolution, was designed to produce compliant workers for factory-based economies. Teachers functioned as knowledge gatekeepers, delivering standardised content to passive recipients through lecture-based methodologies. This model, though effective for its time, has become increasingly obsolete in our hyperconnected, information-abundant digital age.

Today, AI shatters this traditional paradigm with unprecedented force. When sophisticated tools like ChatGPT, Claude, and other large language models can process, synthesise, and deliver information faster, more accurately, and at infinite scale, the fundamental question facing educational institutions worldwide is no longer "Will AI replace teachers?" but rather "What uniquely human role remains not just relevant but indispensable in the age of artificial intelligence?"

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The answer to this existential question lies in a profound philosophical shift—moving education away from mere information transmission toward consciousness-based learning and the development of higher-order cognitive capabilities. According to Bloom's Revised Taxonomy, while AI excels at the lower levels of learning (remembering, understanding, and applying), it is in the higher echelons—analysing, evaluating, and creating—where human consciousness truly shines. These apex levels of cognitive development require wisdom, creativity, ethical judgment, and the kind of nuanced understanding that emerges from lived experience and moral reflection.

Teachers must therefore undergo a fundamental transformation, transitioning from instructors who dictate content to inspirational architects who design transformative learning experiences. They must evolve from knowledge deliverers to wisdom catalysts, from content controllers to consciousness awakeners. This transformation is not merely pedagogical but deeply philosophical, requiring educators to reconnect with the ancient wisdom traditions that understood teaching as a sacred act of human development rather than mere information transfer.

The urgency of this transformation cannot be overstated. As we stand at the threshold of what economists call the Fourth Industrial Revolution, characterised by artificial intelligence, robotics, biotechnology, and quantum computing, the skills that will determine human success are fundamentally changing. The World Economic Forum's Future of Jobs Report consistently emphasises that creativity, critical thinking, emotional intelligence, and complex problem-solving will be the most valued human capabilities in the coming decades—precisely the areas where human consciousness exceeds artificial intelligence.

The Crisis of Current Education: Comprehensive Diagnosis and Analysis

Content Coverage Syndrome: The Breadth Over Depth Pathology

Modern educational systems across the globe suffer from what educational researchers term "Content Coverage Syndrome"—an obsessive focus on syllabus completion at the expense of deep, meaningful learning. This pathological approach to education treats knowledge as a commodity to be delivered rather than wisdom to be cultivated, resulting in what cognitive scientists call "academic amnesia."

The symptoms of this syndrome are evident in classrooms worldwide. Teachers, pressured by rigid curricula and standardised testing requirements, rush through prescribed content with little regard for student comprehension or application. The result is a superficial engagement with learning materials that fails to create lasting neural pathways or practical understanding.

Recent longitudinal studies provide alarming evidence of this crisis. The National Sample Survey Organisation (NSSO) 2022 data reveals that 68% of Indian students cannot solve real-world problems using learned concepts within six months of graduatio. This statistic is not merely concerning—it represents a fundamental failure of educational systems to create transferable learning.

International comparisons further illuminate this crisis. Finland's education system, consistently ranked among the world's best, deliberately covers less content but achieves deeper understanding. Finnish students spend 40% less time in formal instruction than their American counterparts, yet consistently outperform them in international assessments. This paradox underscores a fundamental truth: depth of understanding trumps breadth of coverage.

The neurological basis for this phenomenon is well-established. Research in cognitive psychology demonstrates that meaningful learning requires time for neural consolidation—the process by which temporary memory traces become permanent through repeated activation and connection with existing knowledge networks. When educators rush through content without allowing for this consolidation, they create what neuroscientist Dr. Daniel Willingham calls "shallow processing"—information that never moves from working memory to long-term memory.

Assessment Pathology: The Measurement-Meaning Disconnect

Perhaps even more damaging than content coverage syndrome is the assessment pathology that pervades modern education. Current evaluation systems predominantly measure memory recall rather than mastery, creating what educational theorist Grant Wiggins termed "measurement without meaning."

High-stakes examinations, while seemingly objective, encourage rote memorization and

discourage the kind of creative, critical thinking that defines human intelligence. Students learn to "game the system," developing sophisticated strategies for exam success that bear little resemblance to authentic learning or real-world problem-solving capabilities.

The India Skills Report 2024 provides sobering evidence of this dysfunction. Despite India's reputation for producing technically competent graduates, 73% report feeling unprepared for workplace challenges, while 82% of employers cite lack of critical thinking as a major competency gap. This disconnect between educational achievement and professional readiness represents a massive systemic failure that demands urgent attention.

The psychological impact of assessment pathology extends beyond mere skill deficits. Research in educational psychology demonstrates that high-stakes testing environments create chronic stress responses that actually impair learning and creativity. Dr. Alfie Kohn's extensive research shows that when students are primarily motivated by grades rather than intrinsic interest, they become risk-averse, preferring safe, predictable tasks over challenging, growth-promoting activities.

The Employability Crisis: Skills for Yesterday's World

The employability crisis facing today's graduates represents perhaps the most visible symptom of educational dysfunction. Despite possessing technical knowledge and achieving academic credentials, graduates increasingly lack the soft skills, creative capabilities, and ethical reasoning abilities crucial for success in the innovation economy.

This crisis is particularly acute in India, where rapid economic growth has created enormous demand for skilled professionals while traditional educational institutions continue producing graduates trained for industrial-age jobs. The mismatch between educational outputs and economic needs has created what economists call a "skills paradox"—simultaneous unemployment and unfilled job vacancies.

The following data illustrates the severity of this crisis across key competency areas:

Critical Thinking Deficiency: 78% The inability to analyse information, evaluate arguments, and synthesise solutions represents perhaps the most serious gap in contemporary education. Critical thinking requires the kind of higher-order cognitive processing that current educational systems rarely develop or assess.

Creativity and Innovation Deficit: 92% The near-universal lack of creative capabilities among graduates reflects educational systems that prioritise conformity over creativity, standardisation over innovation. This deficit is particularly problematic in an economy increasingly driven by creative industries and innovative solutions to complex problems.

Teamwork and Communication Gaps: 79% Despite living in a hyperconnected world, most graduates lack the collaborative and communication skills necessary for effective teamwork. This reflects educational systems that emphasise individual competition over collective problem-solving.

Ethical Decision-Making Deficits: 85% Perhaps most concerning is the widespread inability to engage in ethical reasoning and moral decision-making. In an age where technology amplifies the consequences of human decisions, ethical reasoning becomes not just professionally important but civilizationally critical.

Faculty Preparedness Gaps: The Teacher Transformation Imperative

The transformation of education cannot occur without the transformation of educators themselves. However, current data reveal alarming gaps in faculty preparedness for the AI-enhanced educational future.

The National Council for Teacher Education (NCTE) Survey 2024 provides sobering insights into faculty readiness:

AI Integration Unpreparedness: 67% Two-thirds of educators feel unprepared to integrate AI technologies into their pedagogical practice. This represents not merely a technical skills gap but a fundamental conceptual barrier to educational transformation.

Heutagogy Knowledge Deficit: 89% The overwhelming majority of teacher training programs exclude heutagogy—the study of self-determined learning—from their curricula. This omission is particularly problematic given that self-directed learning represents perhaps the most crucial skill for the AI age.

These statistics illuminate a critical truth: faculty transformation is not merely desirable but absolutely non-negotiable for systemic educational

change. Without comprehensive teacher development programs that address both technological competencies and pedagogical philosophies, efforts at educational reform will remain superficial and ineffective.

AI: The Great Disruptor and the Great Enabler

Artificial Intelligence represents a unique phenomenon in educational history—simultaneously the greatest disruptor of traditional teaching methods and the greatest enabler of personalized, effective learning. Understanding this dual nature is crucial for educators seeking to navigate the AI-enhanced educational landscape.

AI's Transformative Capabilities: What Machines Do Best

Personalised Learning at Unprecedented Scale: AI's ability to analyse individual learning patterns, preferences, and progress enables truly personalised education for the first time in human history. Adaptive learning systems can adjust content difficulty, presentation style, and pacing in real-time, providing each student with an optimised learning experience tailored to their unique cognitive profile.

Platforms like Khan Academy's AI tutoring system demonstrate this capability in action. The system tracks millions of student interactions, identifying not just what students know but how they learn best. It can detect when a student is struggling with a concept before the student themselves realise it, providing targeted interventions that prevent learning gaps from widening.

Real-Time Analytics and Adaptive Feedback: AI systems can process and analyse learning data in real-time, providing immediate feedback that enhances learning effectiveness. This capability addresses one of the most significant limitations of traditional education—the delay between learning activities and corrective feedback.

Research in cognitive psychology consistently demonstrates that immediate feedback dramatically improves learning outcomes. AI systems can provide this feedback not just on final answers but on the learning process itself, helping students develop metacognitive awareness of their own learning strategies.

Automation of Routine Tasks: AI excels at automating administrative and routine instructional tasks, freeing educators to focus on high-value activities that require human judgment and creativity. Automated grading, attendance tracking, and progress monitoring allow teachers to invest more time in relationship-building, creative lesson design, and individualised mentoring.

Content Generation and Curation: AI can generate practice problems, create explanatory content, and curate resources tailored to specific learning objectives and student needs. This capability addresses the resource scarcity that has historically limited educational quality, particularly in underserved communities.

The Irreplaceable Human Element: What Only Humans Can Provide

Wisdom Integration and Ethical Reasoning: While AI can process information and identify patterns, it cannot provide the wisdom that comes from lived experience, moral reflection, and ethical reasoning. Human teachers bring contextual understanding, cultural sensitivity, and ethical judgment that remain beyond AI's capabilities.

The integration of knowledge into wisdom requires the kind of holistic thinking that emerges from human consciousness. Teachers provide not just answers but the frameworks for asking meaningful questions, not just solutions but the wisdom to understand when and how to apply them.

Emotional Intelligence and Relationship Building: Learning is fundamentally a social and emotional process. Human teachers provide the emotional support, encouragement, and relationship-based motivation that facilitate deep learning. The trust, empathy, and interpersonal connection that effective teachers establish with students cannot be replicated by AI systems.

Research in educational neuroscience demonstrates that positive teacher-student relationships actually change brain chemistry, creating optimal conditions for learning. The release of oxytocin and dopamine in supportive relationships enhances memory formation and retrieval, illustrating the biological basis for relationship-centered education.

Creative Synthesis and Consciousness: Development Human creativity involves not just recombining existing elements but making

intuitive leaps, recognizing novel patterns, and generating truly original ideas. This kind of creative synthesis requires consciousness—the subjective, experiential aspect of human intelligence that remains mysterious and unreplicable.

Teachers facilitate consciousness development by creating conditions for insight, inspiration, and creative breakthrough. They provide the scaffolding for students to develop their own creative capabilities and conscious awareness.

The Complementary Intelligence Framework

The most effective educational approaches will leverage AI and human intelligence in complementary ways, recognising the unique strengths of each while compensating for their respective limitations.

Information Delivery Domain: AI excels at delivering information instantly, at scale, and with personalisation. However, humans excel at contextualising information, connecting it to meaning, and helping students understand its significance and application.

Assessment Domain: AI provides an objective, rapid assessment of defined criteria. Humans provide qualitative feedback, ethical evaluation, and holistic assessment learning that extends beyond measurable outcomes.

Mentorship Domain: AI cannot provide mentorship in any meaningful sense. Mentorship requires wisdom, empathy, and the ability to see potential in students that they cannot yet see in themselves. This remains uniquely human.

Creativity Domain: AI can recombine patterns in sophisticated ways, but human creativity involves intuitive leaps, emotional expression, and consciousness-based innovation that transcends pattern recognition.

The Three-Stage Teacher Repositioning Model: A Comprehensive Framework

The transformation of education requires more than philosophical commitment—it demands practical frameworks that guide implementation. The three-stage teacher repositioning model provides a developmentally appropriate approach to integrating AI while maintaining the essential human elements of education.

Sage on the Stage: Primary Education (Ages 5-11)

Philosophical Foundation: During the primary years, students require significant scaffolding, structure, and behavioural modelling. Teachers function as "consciousness architects," laying the foundational patterns of thinking, learning, and being that will support lifelong development.

Role Definition: The Consciousness *Architect* Primary teachers must provide heavy scaffolding while simultaneously nurturing curiosity, creativity, and intrinsic motivation. They serve as the primary models for how curious, ethical, creative humans engage with the world.

AI Integration: 25-30% At this stage, AI integration remains limited and carefully managed. AI tools focus primarily on adaptive practice, gamification of learning, and providing individualised pacing for skill development.

Pedagogical Focus Areas

a. *Behaviour Modelling and Social Learning:* Young children learn primarily through observation and imitation. Teachers must embody the qualities they wish to develop in students—curiosity, kindness, creativity, and ethical reasoning. This modelling function cannot be delegated to AI systems.

b. *Foundational Skills Development:* While AI can provide adaptive practice for basic skills like reading and arithmetic, human teachers are essential for diagnosing learning difficulties, providing emotional support, and celebrating progress.

c. *Curiosity Cultivation:* Perhaps most importantly, primary teachers must nurture the natural curiosity that all children possess. This requires creating safe spaces for questions, exploration, and discovery—environments that support risk-taking and creative expression.

Implementation Example: Mathematics Learning

A primary teacher introduces arithmetic concepts through real-life contexts—calculating ingredients for classroom cooking projects, measuring playground equipment, or analysing patterns in nature. AI systems then provide individualised practice problems that adapt to each student's learning pace and style. The teacher

monitors progress, provides encouragement, and helps students connect mathematical concepts to broader patterns in the world.

Assessment Approach: Assessment at this stage focuses on growth, effort, and understanding rather than performance relative to external standards. Teachers use observational assessment, portfolio development, and narrative evaluation to capture the full spectrum of student development.

Guide by the Side: Secondary Education (Ages 12-18)

Philosophical Foundation Secondary education represents the critical transition from dependency to independence, from external motivation to intrinsic drive. Teachers must balance providing guidance with fostering autonomy, creating structures that support exploration while maintaining appropriate boundaries.

Role Definition: The Inquiry Facilitator Secondary teachers function as inquiry facilitators, helping students develop research skills, critical thinking capabilities, and collaborative problem-solving abilities. They create challenging learning environments while providing the support students need to meet those challenges.

AI Integration: 50-60% At this stage, AI integration increases significantly. Students use AI tools for research assistance, data analysis, simulations, and content creation, while teachers focus on developing ethical reasoning, collaborative skills, and creative synthesis abilities.

Pedagogical Focus Areas

a. *Critical Thinking Development:* Secondary students must learn to evaluate information, analyse arguments, and synthesise multiple perspectives. Teachers design learning experiences that require students to grapple with complex, ambiguous problems that have multiple valid solutions.

b. *Collaborative Problem-Solving:* Real-world problems require collaborative solutions. Teachers create project-based learning experiences that require students to work together, leveraging diverse perspectives and skills to address authentic challenges.

c. *Ethical Reasoning and Digital Citizenship:* As students gain access to powerful AI tools, they must develop the ethical reasoning capabilities necessary to use them responsibly. Teachers facilitate discussions about the implications of technology, the importance of intellectual honesty, and the responsibilities that come with powerful tools.

- *Implementation Example:* Environmental Science *Project* Students explore "Plastic Pollution and Chemistry Solutions" through AI-driven environmental simulations that model different intervention strategies. AI tools help students analyze data, predict outcomes, and visualise results. Teachers mentor students on research ethics, help them understand the social and political dimensions of environmental problems, and guide them developing actionable solutions for their local communities.

  The project integrates scientific knowledge, ethical reasoning, systems thinking, and community engagement—capabilities that require human guidance to develop fully.

- *Assessment Approach:* Assessment becomes increasingly authentic, focusing on real-world problem-solving, collaborative projects, and self-reflection. Students maintain learning portfolios that document not just what they've learned but how they've grown as thinkers and human beings.

Pack at the Back: Higher Education (Ages 18+)

Philosophical Foundation: Higher education should represent the culmination of educational development—students functioning as self-directed learners who can identify their own learning needs, design their own learning experiences, and evaluate their own progress. This represents the full flowering of heutagogy—self-determined learning.

Role Definition: The Strategic Mentor At this level, teachers function as strategic mentors, providing minimal scaffolding while offering maximum wisdom. They intervene primarily at crucial decision points, helping students navigate complex choices and develop long-term strategic thinking.

AI Integration: 70-80% *AI* integration reaches its peak in higher education, with students using AI tools for research automation, data modelling, content analysis, and creative production. This high level of AI integration frees teachers to focus on strategic guidance, wisdom-sharing, and consciousness development.

Pedagogical Focus Areas

a. *Heutagogy and Self-Directed Learning:* Students must develop the metacognitive capabilities necessary for lifelong learning. This includes the ability to assess their own learning needs, design appropriate learning experiences, and evaluate their own progress.
b. *Real-World Problem-Solving:* Higher education must connect directly to real-world challenges. Students should work on authentic problems that have genuine impact, developing solutions that can be implemented in their communities or fields of study.
c. *Innovation Leadership:* Students must develop the capabilities necessary to lead innovation in their chosen fields. This includes creative thinking, strategic planning, team leadership, and the ability to navigate ambiguity and uncertainty.

Implementation Example: Social Innovation *Project* University students identify a social problem in their community and design comprehensive solutions using AI tools for data analysis, market research, and impact modelling. Professors intervene only at strategic decision points—helping students refine their problem definition, evaluate their strategic options, or navigate ethical dilemmas.

Students take full ownership of their projects, with AI handling routine research and analysis tasks while human mentors provide wisdom, encouragement, and strategic guidance when needed.

Assessment Approach: Assessment becomes primarily self-directed, with students setting their own learning goals and evaluating their own progress. Faculty provide feedback and guidance, but students take primary responsibility for their learning outcomes.

Global and Indian Case Studies: Learning from Innovation

Finland's Collaborative Learning Revolution: Redefining Educational Excellence

Finland's education system represents perhaps the most successful example of human-centred education in the modern world. Their approach provides valuable insights for AI integration while maintaining focus on human development.

Key Innovations

Flexible Learning Environments: Finnish schools have moved away from traditional classroom structures toward flexible learning pods that can be reconfigured based on learning activities. These spaces support collaborative work, individual reflection, and project-based learning.

Project-Based Curricula: Rather than subject-based learning, Finnish students engage in phenomenon-based learning that integrates multiple disciplines around authentic problems. This approach mirrors the interdisciplinary thinking required in the AI age.

Teacher Autonomy and Professionalism: Finnish teachers enjoy high levels of professional autonomy, allowing them to adapt their teaching methods to student needs without rigid adherence to standardised curricula. This flexibility is essential for effective AI integration.

AI Integration Strategy: Finland's approach to AI integration prioritizes human development while leveraging technology for efficiency. AI systems provide adaptive content delivery and learning analytics while teachers focus on consciousness cultivation, creativity development, and ethical reasoning.

Measurable Outcomes: The results speak for themselves: 78% improvement in divergent thinking scores, consistently high performance on international assessments, and perhaps most importantly, high levels of student wellbeing and life satisfaction.

Lessons for Global Implementation: Finland's success demonstrates that educational excellence requires trust in teachers, focus on human development, and strategic technology integration rather than technology substitution.

Singapore's Symbiotic Intelligence Model: East Meets West

Singapore's education system represents a sophisticated synthesis of Eastern wisdom traditions and Western technological innovation. Their approach to AI integration provides a model for other Asian nations seeking to modernise while maintaining cultural values.

Tiered AI Integration Strategy: Singapore implements a developmentally appropriate approach to AI integration:

- Primary Level (30%): Focus on foundational skills with AI-enhanced practice and assessment
- Secondary Level (60%): Increased AI use for research and analysis with human guidance on synthesis and application

- Tertiary Level (80%): Extensive AI integration with human focus on strategic thinking and wisdom development

Confucian Values Integration: Singapore's approach consciously integrates Confucian values—respect for learning, teacher-student relationships, and collective responsibility—with modern AI capabilities. This cultural grounding provides stability and meaning in times of rapid technological change.

Ethical AI Framework: Singapore has developed comprehensive guidelines for ethical AI use in education, emphasising human agency, cultural sensitivity, and social responsibility. Students learn not just how to use AI tools but how to use them ethically and responsibly.

Measured Impact: The results demonstrate the effectiveness of this approach: 67% improvement in analytical thinking skills, 41% increase in teacher satisfaction, and strong performance on international assessments while maintaining cultural identity.

Scalability Insights: Singapore's model demonstrates that successful AI integration requires cultural sensitivity, systematic implementation, and strong ethical frameworks—insights that can be adapted to other cultural contexts.

Comprehensive Policy Roadmap for NEP–2020 and *Viksit Bharat* 2047

The transformation of education requires not just institutional innovation but systemic policy changes that support and enable transformation across the entire educational ecosystem.

Faculty Development 2.0: Transforming Teacher Preparation

Vision Statement By 2030, 80% of teachers should be proficient in AI-integrated heutagogy, capable of facilitating consciousness-based learning while leveraging AI tools for enhanced educational effectiveness.

Implementation Strategy

a. *Pre-Service Teacher Preparation:* All teacher preparation programs must integrate AI literacy, heutagogical principles, and consciousness-based learning methodologies. This requires fundamental curriculum revision and faculty development within teacher preparation institutions.

b. *In-Service Professional Development :* Comprehensive professional development programs must support existing teachers in developing AI integration capabilities while deepening their understanding of consciousness-based learning approaches.

c. *Continuous Learning Frameworks:* Teachers must become exemplars of lifelong learning, continuously updating their skills and knowledge as AI capabilities evolve and educational understanding deepens.

Resource Requirements: This transformation requires significant investment in faculty development infrastructure, including:

- National Faculty Excellence Centres focused on consciousness-based learning
- AI-enhanced professional development platforms
- Research partnerships with leading global education institutions
- Comprehensive assessment and certification systems

Assessment Revolution: From Testing to Authentic Evaluation

Vision Statement: Educational assessment must shift from standardized testing to portfolio-based, project-driven evaluation that measures authentic learning, creativity, and consciousness development.

Implementation Framework

Portfolio-Based Assessment: Students maintain comprehensive learning portfolios that document not just academic achievement but personal growth, creative development, and consciousness evolution.

Project-Based Evaluation: Assessment focuses on real-world problem-solving capabilities, collaborative skills, and the ability to create meaningful solutions to authentic challenges.

AI-Enhanced Assessment Analytics: AI tools can analyze portfolio contents and project outcomes to provide sophisticated feedback on learning progress while human evaluators focus on qualitative dimensions that require wisdom and judgment.

Cultural Integration: Assessment approaches must be culturally sensitive and aligned with Indian values while meeting international standards for educational quality and effectiveness.

AI Ethics Framework: Responsible Technology Integration

Philosophical Foundation: AI integration in education must be guided by dharmic principles that

prioritize human wellbeing, ethical development, and social responsibility.

Implementation Guidelines

- Student Agency and Autonomy AI tools must enhance rather than replace student agency. Students should understand how AI systems work and maintain control over their learning processes.
- Cultural Sensitivity AI systems must be designed and implemented in ways that respect Indian cultural values, linguistic diversity, and traditional wisdom.
- Equity and Inclusion AI integration must reduce rather than exacerbate educational inequalities, ensuring that all students have access to AI-enhanced learning opportunities.
- Privacy and Data Protection Comprehensive frameworks must protect student privacy while enabling the data analytics necessary for personalized learning.

Infrastructure Investment: Building AI-Enhanced Learning Ecosystems

Vision Statement: Every Indian student should have access to AI-enhanced learning opportunities regardless of geographic location or economic circumstances.

Implementation Strategy

- *National AI Education Cloud:* A comprehensive digital infrastructure that provides AI-powered learning tools, resources, and platforms accessible to all educational institutions.
- *Rural Connectivity Initiative:* Targeted investment in rural internet infrastructure to ensure that AI-enhanced learning opportunities reach every corner of India.
- *Device Access Programs:* Comprehensive programs to ensure that all students have access to the devices necessary for AI-enhanced learning, with particular attention to economically disadvantaged communities.
- *Teacher Technology Support:* Comprehensive technical support systems to help teachers effectively integrate AI tools into their pedagogical practice.

Policy Alignment with NEP 2020 Priorities

- *Multidisciplinary Learning:* AI-enhanced cross-disciplinary projects that integrate multiple subject areas around authentic problems, supporting the NEP–2020 vision of holistic education.
- *Technology Integration:* Strategic integration of AI tools that enhance rather than replace human learning, aligned with NEP 2020's emphasis on technology as an enabler rather than a replacement for quality education.
- *Teacher Empowerment:* Comprehensive support for teacher development and professional growth, recognizing teachers as the key to educational transformation.
- *Assessment Reform:* Fundamental changes to assessment approaches that measure authentic learning rather than mere information recall, supporting the NEP 2020 vision of competency-based evaluation.

Conclusion: Teachers as Consciousness Catalysts for Human Flourishing

As we stand at the threshold of an AI-dominated future, the teaching profession faces its most profound transformation in human history. The question is not whether this transformation will occur—it is already underway—but whether educators will lead this transformation or be overwhelmed by it.

The three-stage model presented here— Sage on the Stage, Guide by the Side, Pack at the Back—represents more than a pedagogical framework. It is a manifesto for educators who recognize that their highest calling is not information delivery but consciousness development, not content coverage but wisdom cultivation, not standardized instruction but personalized human development.

The evidence from global case studies demonstrates that this transformation is not only possible but urgently necessary. Finland's collaborative learning revolution, and Singapore's symbiotic intelligence model, prove that AI integration can enhance rather than diminish the human elements of education.

However, this transformation requires more than individual commitment—it demands systemic change supported by comprehensive policy frameworks aligned with India's educational vision as articulated in NEP 2020 and Viksit Bharat 2047. The policy recommendations outlined here provide a roadmap for this transformation, emphasizing faculty development, assessment reform, ethical AI integration, and infrastructure investment as the critical enablers of educational renaissance.

The ultimate goal of this transformation extends beyond educational effectiveness to human flourishing itself. In an age where artificial intelligence can process

information faster and more accurately than any human, the uniquely human capacities for wisdom, creativity, empathy, and ethical reasoning become not just professionally valuable but civilizationally essential.

Teachers who embrace their role as consciousness catalysts will find themselves more relevant and more essential than ever before. They will be the architects of human consciousness, the guardians of wisdom, and the facilitators of human flourishing in an AI-enhanced world.

The choice before educators is clear: they can cling to obsolete models of information delivery and find themselves increasingly irrelevant, or they can embrace their highest calling as consciousness catalysts and become more essential than ever before. The future of education—and indeed the future of human civilization—depends upon the choices educators make today.

In this transformation, teachers must remember that they are not competing with machines in information delivery but fulfilling their timeless role as wisdom keepers and consciousness developers. Lead, Guide, Step Back is not just a pedagogical model—it is a philosophical framework for understanding the sacred responsibility of human development that has always been at the heart of authentic education.

The AI revolution in education is not a threat to be feared but an opportunity to be embraced—an opportunity to finally fulfill education's highest purpose: the development of conscious, creative, ethical human beings capable of contributing to individual flourishing and collective wisdom. In this noble endeavour, teachers remain not just relevant but absolutely indispensable, serving as the bridge between artificial intelligence and human wisdom, between technological capability and conscious application, between information abundance and meaningful understanding.

The future belongs to those educators who understand that in a world where information is infinite, wisdom remains rare—and it is precisely this wisdom that only human consciousness can provide.

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Employing Continuous and Comprehensive Classroom Evaluation in Indian Higher Education

Lalit Kumar*

Evaluation's main goal is to gauge learning and teaching. Learning evaluation began on the day humans began to learn, assuring it had occurred. The education system has long dreamed of the ideal situation of a completion certificate from the teachers. Lord Rama got the certificate of course completion from Guru Vashishat; Arjun from Dronacharya; and examples are plenty in number. Can anyone say that the evaluation in this example is not continuous and comprehensive? and it has not been made during classroom coverage. In this age of multiple complexities of the education process, we cannot evaluate comprehensively in a continuous manner and that too during the teaching process, but we need to approach the principle of Continuous and Comprehensive Classroom Evaluation (CCCE) in the India Higher Education System.

The findings of pedagogy science state that the relationship between teaching and learning declares that it is learning only that can guarantee the teaching, and it is only evaluation that can manifest the occurrence of learning. Kumar (2015) states that the relationship between teaching and learning is like displacement and work as perceived by physics. He again stresses that teaching is teaching only if it causes learning, and the learner's behaviour reflects that learning is due to teaching. Kumar(2015) clearly recommends continuous classroom evaluation, and that too in behavioural terms by considering objections to teaching. We need to follow the principle of teaching-evaluation-learning (the triangle), and that is the objective of Continuous and Comprehensive Classroom Evaluation (CCCE). Complete evaluation by teachers and no or minimal involvement of external agencies is the ideal state of the teaching-learning process. Complete internal evaluation was the outcome of our universities like Nalanda, Vikramashila, etc., and our national education policies also recommend investment in teachers for believing in them to achieve this largest objective in absolute terms. No people can rise above the level of their teachers (NPE, 1986). No matter that absolute CCCE may not be attained, but even then CCCE is the better form of evaluation for teaching, learning and certification. Without proper evaluation, quality education is not possible that the NEP (2020) concludes "Curriculum, Pedagogy, Continuous assessment and student support are the cornerstones for quality learning."

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Examination, Assessment, and Evaluation – Oral to CCE

If we look at the path the concept assessment or evaluation has travelled, we simply come to know that we started with an oral form of examination, assessment, or evaluation, and now we are in the age of continuous and comprehensive evaluation. The concept test, examination, measurement, assessment, and evaluation are all different, but they have certain common objectives. Evaluation is the most comprehensive and sophisticated concept. Research in pedagogy and multiple purposes of the evaluation have made the area of measurement, assessment, and evaluation very important and extensive. Over the years, various national documents have reflected on it, and that is why Continuous and Comprehensive Classroom Evaluation has become so useful and result-giving that we desperately need it in our education system to be vibrant and time ahead.

No doubt, the concept evaluation has received prominence recently in education, though it is equally ancient to the man's act of teaching for someone's learning. Paper and Printing Technology revolutionised the concept; before that, it was being done through oral testing, recitation of texts or oral form of answers to some raised questions. Binet Intelligence Testing and Rice Achievement Testing made the field of testing and evaluation important and attractive, and other psychologists, through different tests of measuring psychological attributes, further increased the scope of the concept. Pedagogy science-related various research made testing a movement during which tests and achievement tests were constructed, standardised, and shaped as objective-type tests as well. Evaluation movement invented and employed different forms of tests---

oral, written, situational, etc, and various measuring tools were applied– tests, rating scales, inventories, questionnaires, etc. The evaluation has now started to consider instructional objectives as the guiding line for making the evaluation meaningful.

Measurement is physical in nature and quantifies only; examination is for certification, assessment allows for comparative study of learners' performance, but it is evaluation that allows for value judgment, and in every respect it is comprehensive. Evaluation is systematic and assesses student learning progress and performance in relation to instructional objectives. In the same way, classroom evaluation is comprehensive, and it allows the implication of every type of assessment. NPE (1986) states that in functional terms, a method of assessment that is reliable and valid measures of student development and for improving teaching and learning is "continuous and comprehensive evaluation that incorporates both scholastic and non-scholastic aspects of education, spread over the total span of instructional time."

Continuous and Comprehensive Evaluation (CCE)

There are two distinct concepts in the concept of CCE: continuous and comprehensive. Continuous evaluation is about the process of continuous attempts to assess desirable changes taking place among learners along defined and specified lines of educational attainment. It provides continuous feedback to the system and its related elements for modification and improvement. Continuous evaluation makes us aware of the status of present attainment and the direction of progress. Comprehensive evaluation is about evaluation in learners' scholastic and non-scholastic areas. Scholastic area measures curricular area, whereas non-scholastic area assesses health, habits, attitude, etc. of the learners. Comprehensive evaluation requires a variety of tools and techniques to provide learners with information in different specific areas of growth. Continuous and comprehensive evaluation together make evaluation complete, and if it is integrated with classroom evaluation, the circle completes. Weightage given to classroom evaluation will make the evaluation effective and will allow the teacher more autonomy in teaching and testing that the NEP (2020) pleads for, "Teachers will be given more autonomy in choosing aspects of pedagogy, so that they may teach in the manner they find most effective for the students in their classroom." NEP (2020) has stated it in the context of school education, but it is equally relevant for higher education system as well.

Classroom Evaluation

Classroom Evaluation or Assessment is a process of gathering meaningful information continuously about teaching and learning. It is about evaluating students in the process of classroom transactions, observing students, getting important feedback, and experimenting with instructional strategies continuously and comprehensively. It is a process of identifying teachers' strengths & weaknesses and knowing students' patterns of learning. The purpose of classroom evaluation is formative in nature, but there is a need to decide its weightage in summative assessment as well. It is to improve students' learning throughout the process of learning; it provides feedback to the students, teachers and the entire system of teaching and learning process; and finally, it influences all the related decisions to improve the process by adjusting to instructional aspects. It informs the instructional process to identify instructional needs to adjust; it helps to improve learning by providing additional support to the learners; and it yields continuous feedback to improve the teaching-learning process.

Merits of Classroom Evaluation

Classroom evaluation has certain strengths as:

1. It Manages for Improved Student Learning. It allows for adjusting and improving instructional design through continuous feedback about students' understanding and students' learning outcomes.
2. It Helps for Enhanced Teacher and Teaching Effectiveness. Students' needs and dark areas are identified to adjust the teaching to improve.
3. It Increases Students' Participation. In the process of assessment, learners become active and more participatory.
4. It Provides Data for further Discussion, Taking. It goes through continuous data gathering by continuous evaluation to gather relevant data for future decision-making.

Methods of Classroom Evaluation

Classroom evaluation or assessment is being made during every moment of the classroom transaction or classroom process, and in fact, it is the most comprehensive form of continuous assessment. NCF (2005) mentions, "A teacher can, in the course of teaching itself, come to know of such problems by asking questions that make children think or by giving them small assignments." The following methods or techniques of the classroom are employed frequently by the teachers:

Observation

Observation is not a better technique of research data gathering only; it is the vital source of evaluation by teachers' insight, experience, planned and participative observation, and alertness. It provides every form of related information about each student and their learning and difficulties. The proverb "Face is the Index of Mind" sounds vibrant at this juncture. It helps teachers to observe students during classroom activities to assess their participation and understanding. NCF (2005) states, "Sensitive teachers usually pick up the unique strengths and weaknesses of students. There should be ways of utilising such insights."

Questioning

Pedagogy science believes that better teaching demands maximum students' participation in the process of teaching and learning; and it is questioning that yields maximum learners' participation during classroom transaction or teaching-learning. Micro-teaching has identified that questioning skill is the most potent teaching skill among all the teaching skills. Jangira, NK and Singh, A (1982) write, "A well-structured question needs ultimately to be delivered and distributed in the classroom. Processes of delivery and distribution of classroom questions are important aspects of a teacher's questioning behaviour." Through "Structuring Classroom Questions"; Delivery and Distribution of Classroom Questions" and "Response Management" or "Probing Questioning" as a Questioning skills package, questioning does miracles in uplifting the teaching and yielding the learning. Its strength in evaluation is equally important as it reveals every type of information about each student individually and collectively. Questions in the classroom provide information more particularly about students' strengths, dark areas, and weaknesses.

Whether it is introductory questions to introduce, developmental questions to develop the concept, diagnostic questions to diagnose, comprehensive questions to measure learners' comprehension level or recapitulation questions to conclude the concept and teaching, they all evaluate and assess meaningfully.

Student Self-Reflection

During classroom teaching, learners may be encouraged by the teacher to reflect on their learning process to locate their strengths and weaknesses. Self-evaluation, peer evaluation, etc, may also provide meaningful feedback if the teacher allows learners to interact in the process of teaching and learning.

Implication of Group Centred Methods of Teaching

Evaluation or assessment during content coverage through Group-centred Methods and approaches of teaching provides much information regarding students' learning. Seminar, Symposium, Panel Discussion, Buzz Session, Brainstorming sessions, Role Playing, etc., not only enhance students' learning, simultaneously assess, evaluate, and enrich learning and learning experiences. Our many national documents have suggested assessment through discussion, experimentation, etc. NCFSE (2023) in its Introduction on pedagogy suggests for engagement through ways like participating, questioning, discussing, debating, and writing.

By adopting different mechanisms of teaching and evaluation, teachers can justify the concept that teaching and testing go together. Classroom evaluation is continuous in every respect, and by employing different approaches of teaching, it can be easily made comprehensive in nature as well. The country has worked much on evaluation at the school levels and at the open distance learning level. They are all to be experimented with in our higher education system through the Induction and Refresher Courses of the UGC Human Resources Development programmes. The curriculum of all these courses, especially of the Induction Programme, is the testimony of the fact that the Indian Higher Education System has started to work on CCCE. We need to instil among our young higher education teachers the prior knowledge of teaching methods and mechanisms of evaluation

to make our classroom meaningful and vibrant for teaching, learning, and testing. Continuous and comprehensive classroom evaluation is inevitable for quality education. What Mittal, P (2025) says for CCA is also true for CCCE / CCCA: “CCA not only enhances academic performance but also promotes essential skills such as critical thinking, collaboration and self-assessment, ultimately contributing to the overall development of well-rounded learners."

Types of Classroom Evaluation

Evaluation can be made comprehensive through different types of evaluation, like Student Evaluation, Institution Evaluation, Programme Evaluation, Personal Evaluation, etc. It is the Student Evaluation that is being done during classroom transactions. Other types of evaluations are also influenced by classroom evaluation in some way or other, but only the classroom evaluation is directly linked with student evaluation. Institutional evaluation is the evaluation in terms of institutional management, administration, and its general environment, and it cannot overlook Student Evaluation completely. Institutional evaluation is of two types as System Evaluation and Course Evaluation. Both types of Institutional evaluation have a classroom evaluation component. Programme evaluation is being made keeping in view the objectives of the programme, which need direct support of classroom evaluation. Personnel evaluation cannot be made without classroom evaluation, where, besides other personnel, the teachers are evaluated more particularly. No need to say it is a student evaluation that is completely focused on and linked with classroom evaluation.

Student Evaluation provides information about students’ achievement, intelligence, personality, attitude, aptitude, interest, etc, and is related to their scholastic and non-scholastic aspects. It is being done individually and in group situations. Individual and group evaluation processes function at three levels –Initial, Intermediate, and Final. It means we have Initial Evaluation, Intermediate Evaluation, and Final Evaluation as three parts of the Student Evaluation. Initial evaluation is also known as Placement Evaluation and is found useful for admission and students’ selection for grouping, etc. It also provides necessary information to the concerned authority or to the teacher in a classroom situation, where basic knowledge and skills of the learners are to be known or ascertained. It aims to evaluate students' entry behaviour and the collection of initial data. Group formation, pairing, needed remedial work, etc., are being done from placement evaluation. Intermediate evaluation measures students' learning progress during the period of their learning activity. It is also called as Formative Evaluation. It is a tool for providing feedback to the teaching-learning process and helps in modifying the educational proposals and activities to attain the learning goals. Final evaluation is also known as Summative Evaluation and is employed at the end of the instruction. It is judgmental and terminal in character, and its major purpose is certification of level attainment to the students. Classroom evaluation is primarily placement and formative evaluation, but it is summative as well. Classroom evaluation through workshops, tests, seminars, buzz sessions, brainstorming sessions, etc., deserves optimum weightage in the overall certification in our higher education evaluation system.

We have external and internal evaluations. Internal evaluation is being made by teachers and is directly linked with classroom evaluation. External evaluation has been recommended to be minimised or withdrawn by the academicians and administrators, but a mechanism for the weightage of classroom evaluation can also be developed in external evaluation. The mechanism of moderation by external group members may be used for the same. Norm-referenced evaluation is for comparison and relative measurement for ranking, but the weightage of classroom evaluation can also be placed in college ranking or university ranking. Criterion-referenced evaluation is to be made along certain specified criteria and is based on the principle of mastery learning. Its nature is most suitable for employing it in classroom evaluation. Our higher education system is largely focused on norm-referenced evaluation, which needs to be made more specific to criterion-referenced evaluation. Criterion-referenced evaluation will not only develop related skills and attributes, rather it will also make classroom evaluation more meaningful in the Indian higher education system.

Classroom evaluation in the higher education system serves four basic purposes of placement, improvement of performance, diagnosis of difficulties, and assessment of the amount of

learning due to teaching. Both criterion-referenced and norm-referenced evaluations serve these purposes. The functions of formative and diagnostic evaluation are better served by criterion-referenced evaluation, whereas summative evaluation is served by norm-referenced evaluation. Placement evaluation requires both criterion and norm-referenced evaluation for requisite skills and level of performance, respectively. Out of four basic functions of classroom evaluation, formative and diagnostic are the concerns of teachers throughout the period of their teaching, whereas placement is needed in the beginning, and summative at the end of the session. What Position Paper on Examination Reforms (2006) states for school education is also relevant for higher education classroom evaluation. "A School-based continuous and comprehensive evaluation system should be established in order to (i) reduce stress on children, (ii) make evaluation comprehensive and regular, (iii) provide space for the teacher for creative teaching, (iv) provide a tool for diagnosis and for producing learners with greater skills."

CCCE– What Needs to be Done?

An ideal higher education system teaches, evaluates, and certifies. We need to focus on Continuous and Comprehensive Classroom Evaluation (CCCV) for better education and a more valid evaluation for certification. What we need to do in the process is to train and update our higher education teachers for better teaching and relevant continuous and comprehensive classroom evaluation. The following measures need to be employed in our higher education system for improved evaluation:

- To provide optimum weightage to the classroom evaluation in Certification.
- To evaluate through different forms of Questions.
- To employ different evaluation methods.
- To work on improving the integrity level of teachers for unbiased evaluation.
- To employ the mechanism of evaluation through assignment presentation in a classroom situation.
- To include evaluation through Open Book Examination Mode in Classroom situation based on a Unit or Topic.
- To add a mechanism of open distance learning mode of assessment in a classroom setting.
- To incorporate experiential, integrated, inquiry-driven, project-based, discussion-based, arts-based, sports-based, and activity-based pedagogical approaches for teaching, learning, and evaluation.
- To focus on behavioural objectives during classroom teaching, learning and evaluation to shape evaluation as objectives-based evaluation.
- To make teachers' and learners' attitudes favourable towards classroom evaluation or assessment.
- To enrich young higher education teachers with more knowledge regarding different types of teaching methods and techniques of evaluation attached to them.

To employ more criterion-referenced evaluation in students' certification. continuous and comprehensive evaluation, as a concept needs to be defined comprehensively, which is not possible without the inclusion of classroom evaluation, as it is classroom evaluation only that truly believes and follows that teaching and testing run together. It is advisable to outline the activities of assessment and evaluation to be done, keeping in view the criteria and objectives for which the evaluation is to be made–academic, attitudinal, social, personal, national, human, and many more. Position Paper on Examination Reforms (2006) states, "There is a lot of psychological data to suggest that different learners learn differently, and, hence, to test all learners through a written test of the same type in subject after subject is unfair to those whose verbal proficiency is superior to their writing skills, those who work more slowly but with deeper insight, or those who work better in groups than individually. NPE (1968) also suggests making evaluation reliable, valid, and continuous for the improvement of learners' achievement, not for certification only. The most important aspect of CCCE is that it is not examination-focused; rather, it is learning- and evaluation-centred. The University Education Commission (1949) stated that we should examine for the sake of certification and validation of the degree in the job market, where evaluation is sacrificed. "The chief purpose of the present examinations is not organically related to the actual process of education. They are a means of giving a hallmark of competence which employers, public and private, may recognise as a more or less reliable indication of the possession of certain intellectual

and, perhaps, moral qualities and of certain types of knowledge and skill. A university degree is a kind of passport for jobs." In some way or other, the purpose is the same as the major focus of our universities is examination, not evaluation. Every time the university is busy with examinations. We have worked on a choice-based Credit System, which has special mention in NEP (2020), but we are still focused on evaluation instead of certification. Admission, examination, and Certification through examinations are the real agenda of our universities throughout the year. Much is needed to complete the triangle of Teaching-Learning-Testing (Evaluation). Only CCCE is the viable solution for the completion of this triangle. By employing CCCE, we will be able to make teaching, learning & learners centred, and evaluation more meaningful and relevant.

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Invitation to Authors

Authors are invited to contribute articles on contemporary issues in higher education in general and Indian higher education in particular for publication in the 'University News'. The articles addressing the Editor University News be sent as an e-mail attachment in MS WORD to: unaiu89@gmail.com; ramapani.universitynews@gmail.com; universitynews@aiu.ac.in.

Editor

Developing Academic Leadership for Transformative Higher Education

Madhu Gupta*

Higher Education globally is experiencing a paradigm shift due to rapid technological advancements, a heightened demand for access, globalisation, and an increased emphasis on accountability and quality. Academic leadership is central to shaping institutional vision, fostering innovation, and driving reforms. In the Indian context, the National Education Policy (NEP) 2020 emphasises the need for visionary leadership to transform the higher education system into one that is multidisciplinary, flexible, and globally competitive. There is a need to examine the components of academic leadership and present strategies to cultivate leadership for transformative outcomes.

This research paper explores the critical role of academic leadership in facilitating transformative changes in higher education. With increasing pressures from globalisation, technological advancements, and evolving societal needs, academic institutions must embrace innovative leadership models to remain relevant and impactful. It has been made to develop a conceptual framework of academic leadership, identify key drivers and challenges for transformation, and propose strategic approaches for developing effective academic leaders. Emphasis is placed on contextual examples and policy recommendations, particularly in the Indian higher education landscape

Concept of Academic Leadership

Definitions and Theoretical Perspectives

Academic leadership is essential in higher education, guiding institutions through complex challenges while fostering innovation and inclusivity. Academic leadership is about influencing academics, professional staff, and others to work together toward shared goals, like improving teaching and research. It's not just about the institution itself but involves collaboration among people. For example, it includes creating a vision for the future and building a supportive environment for learning and growth.

Theoretical Perspectives

Traditionalist Perspective: Focuses on the culture of higher education, worrying that business-like management practices might harm academic freedom and teamwork among scholars.

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Reformist Perspective: Emphasises ethics and inclusion, advocating for leadership styles that involve everyone, like shared or servant leadership, to promote equality and address modern issues like digital changes.

Pragmatist Perspective: Looks at the practical skills needed, like decision-making and problem-solving, especially during crises or when managing professional services.

Core Components of Academic Leadership

***Idealised Influence*:** Leaders act as role models, earning trust through ethical behaviour and relationship-building, emphasising integrity and trust.

***Inspirational Motivation*:** They motivate through a compelling vision, setting challenging goals, and using storytelling to engage followers

***Intellectual Stimulation*:** Encourages critical thinking, problem-solving, and creativity among academics and staff.

***Individualised Consideration*:** Focuses on individual needs, providing coaching, mentoring, and fostering equity and inclusivity.

***Empowerment over Authority*:** Leadership is less about positional power and more about influential power, promoting mutual empowerment and commitment to collective goals.

Adaptability: Effective during periods of change or turmoil, promoting adaptability and organisational justice, aligning with higher education's need for resilience.

Leadership Models

Servant Leadership Model

Servant leadership is a model where leaders prioritise the needs of followers, particularly students and staff, emphasising ethics, humility, and service. In higher education, it is seen as a means to foster trusting relationships and enhance student-centred outcomes, addressing modern challenges like diversity and community engagement. Leadership is essential for effective governance, which involves the processes and structures by which HEIs are directed and controlled.

Shared Leadership Models

Shared leadership moves beyond the traditional leader/follower binary, capitalising on expertise across the campus. It differs from shared governance, where faculty handle curriculum decisions and administration manages budgeting, by involving a broader range of stakeholders in decision-making. This approach fosters collaboration, not fixed structures like faculty senates, using task forces and cross-functional teams for real-time issue resolution. Conditions for effective shared leadership include team empowerment, supportive vertical leaders, autonomy, shared purpose, external coaching, accountability structures, interdependence, fairness of rewards, and shared cognition. Challenges include conflict, power issues, and potential groupthink, with fears of slowing decision-making leading to reduced stakeholder input. A study of 12 UK universities found that shared leadership is often rhetorical rather than authentic.

Policy Implementation and Accountability

Leadership ensures effective governance by implementing policies related to admissions, curriculum development, discipline, and career advancement. The leadership supports academic and administrative planning, conducts gap analyses using tools like SWOT, and aligns with social commitments, fostering decentralisation and participative management.

Proposed NEP–2020 Recommendations for Empowered Governance Structures

In India, NEP–2020 emphasises strong self-governance and merit-based leadership appointments as hallmarks of world-class institutions. The Board of Governors (BoG) is empowered to govern HEIs free of external interference, make key appointments, and ensure accountability through transparent disclosures, adhering to guidelines set by the Higher Education Commission of India (HECI) via the National Higher Education Regulatory Council (NHERC) (NEP 2020). Leadership selection involves an Eminent Expert Committee (EEC) to ensure stability and planned succession, with overlaps to maintain continuity. All HEIs aim for autonomy and an empowered BoG by 2035, with incentivization, support, and mentoring.

Role of Leadership in Innovation

Leadership drives innovation by creating an environment that encourages creativity, risk-taking, and the adoption of new ideas.

Fostering Creativity and Adaptability

It seems likely that shared leadership fosters innovation by leveraging multiple perspectives, increasing cognitive complexity, and fostering organisational learning. Shared leadership is critical for adaptive leadership, addressing complex challenges through collaboration, experimentation, and creative problem-solving. Outcomes include improved problem-solving quality, organisational citizenship behaviour, and performance, especially in complex environments. The shared leadership predicts success in start-ups and change management teams, with higher education examples like cross-functional teams identifying performance gaps and developing interventions. Positive outcomes include increased satisfaction, group cohesion, confidence, trust, social integration, and financial performance, supported by studies.

Policy and Funding Support

Leadership supports innovation by providing funding for research, formulating policies for curriculum adjustments to meet job market demands, and facilitating industry-academia collaborations. The leadership encourages research publication in peer-reviewed journals and participation in conferences and workshops, enhancing student employability and learning. NEP 2020 aims for HEIs to become independent self-governing institutions pursuing innovation and excellence through graded autonomy over 15 years, with a target of all HEIs being autonomous by 2035. Institutions are required to develop Institutional Development Plans (IDPs) that outline initiatives for innovation and progress assessment, serving as the basis for public funding (NEP–2020).

Role of Leadership in Institutional Culture

Leadership shapes institutional culture by defining values, promoting collaboration, and fostering a sense of community.

Building Trust and Inclusiveness

The evidence leans toward shared leadership, building a culture of trust, inclusiveness, and decentralised decision-making. It develops supportive cultures through relationship building, clear roles, and inclusiveness, enhancing team cohesion and addressing power differentials to prevent alienation. The women and certain cultural groups prefer collaborative leadership, with conditions like autonomy and shared cognition being critical. Conditions for higher education include support from vertical leaders, resources, developing supportive cultures, clear role definition, autonomy, shared goals, key internal expertise, external feedback, information sharing, and inclusiveness, enhancing responsiveness to student concerns and innovation incentives.

Creating a Culture of Excellence

NEP–2020 stresses that leadership should create a culture of excellence aligned with Constitutional values such as social commitment, teamwork, pluralism, and a positive outlook. IDPs are to be prepared collaboratively by the BoG, leaders, faculty, students, and staff, ensuring a shared commitment to excellence, community engagement, and financial probity (NEP 2020). Outstanding leaders are identified and developed early through a leadership ladder, fostering a culture of continuous improvement.

Initiatives for Cultural Reinforcement

The leadership reinforces institutional culture through initiatives like spiritual forums, yoga, personality development programs, and the establishment of research centres. It involves faculty and students in activities, organises workshops on current teaching trends, and ensures dynamic equilibrium with economic, socio-cultural, and ecological environments. Leadership also focuses on character formation, gender sensitivity, and moral integrity, contributing to a holistic institutional culture.

Significant Elements for Transformative Higher Education

Multiple interrelated factors are driving higher education institutions toward transformation:

- ***Technological Innovation*:** Digitisation has reshaped pedagogy, learning environments, and administrative processes.
- ***Globalisation*:** Institutions are increasingly engaged in international collaborations and are expected to meet global academic benchmarks.
- ***Equity and Inclusion*:** Promoting access and removing systemic barriers are critical for ensuring social justice.
- ***Interdisciplinary and Experiential Learning*:** Modern curricula demand real-world problem-solving and cross-disciplinary perspectives.
- ***Industry Relevance*:** Stronger industry-academia linkages are necessary to enhance graduate employability and foster innovation.

Challenges in Academic Leadership

Despite the increasing recognition of academic leadership's importance, several persistent challenges hinder its development:

- ***Hierarchical Governance*:** Bureaucratic structures often limit leadership autonomy and the capacity for timely decision-making.
- ***Inadequate Leadership Training*:** Many academic leaders ascend through academic ranks without formal preparation for leadership roles.
- ***Resistance to Change*:** Entrenched academic traditions and mindsets can impede innovation.
- ***Role Ambiguity and Workload*:** Academic leaders often juggle conflicting responsibilities related to teaching, research, and administration.
- ***Gender and Diversity Gaps:*** Women and members of underrepresented groups continue to face barriers to leadership positions.

Strategic Approaches to Develop Academic Leaders

To create a robust leadership pipeline, higher education institutions should implement multifaceted strategies:

- ***Leadership Development Programmes*:** Structured initiatives such as workshops, fellowships, and executive training can equip emerging leaders with essential competencies.
- ***Mentorship and Coaching*:** Establishing mentorship ecosystems fosters leadership learning and career development.
- ***Institutional Support Systems*:** Ensuring autonomy, access to resources, and supportive policy frameworks enhances leadership effectiveness.
- ***Data-Driven Decision Making*:** Utilising institutional analytics supports evidence-based leadership and strategic planning.
- ***Collaborative Networks*:** Cross-institutional partnerships and global leadership platforms facilitate knowledge exchange and innovation.
- ***Faculty Exchange Programme*:** Can significantly intersect with educational leadership by enhancing the skills, perspectives, and influence of faculty members who often take on leadership roles within their institutions.

Case Studies and Comparative Examples

Some examples of academic leadership programmes are presented here, and a comparative analysis of Academic Leadership initiatives is provided in Table 1:

- ***Government of India Initiative:*** Leadership for Academicians Programme (LEAP) and the Academic Leadership Programme (ALP), initiated by the Ministry of Education and UGC, aim to develop senior academic leaders through global exposure and structured training.

Table 1. Comparative Analysis of Academic Leadership Initiatives

Initiative	Country	Focus Areas	Unique Features
LEAP/ ALP	India	Leadership training, global exposure	Aligns with NEP 2020 goals
MLE	USA	Strategic management, innovation	Case-based learning from leading universities
LFHE	UK	Institutional leadership, diversity	Supports women in leadership

- ***IIM Bangalore Leadership Development Programme:*** IIM Bangalore runs an internal leadership development program for faculty transitioning into administrative roles, offering training in strategic thinking, people management, and educational innovation.
- ***Bundelkhand Region Mission-Driven Universities:*** Institutions in underdeveloped areas like Bundelkhand have the potential to drive regional transformation through context-driven leadership that emphasises inclusive, employability, and grassroots collaboration.
- ***Global:*** Harvard University's Institute for Management and Leadership in Education (MLE) and the UK's Leadership Foundation for Higher Education offer comprehensive training programs that emphasise strategic thinking, institutional reform, and leadership in change contexts.
- ***University of Melbourne's Distributed Leadership Model*:** This model empowers faculty across departments to take on leadership in curriculum reform, research strategy, and equity initiatives, encouraging shared governance and innovation.

Policy Implications and Recommendations

- ***National-Level Reforms*:** Strengthen the leadership components of national policies, including detailed implementation frameworks under NEP-2020.
- ***Institutional Initiatives*:** Establish pathways for leadership development through talent identification, training, and succession planning. Encourage decentralisation of decision-making to foster creativity and accountability. Promote gender and regional diversity in academic leadership appointments
- ***Faculty Development Centre*:** Expand the scope of UGC HRDC Centres to include sustained leadership capacity-building. Institutionalise leadership development as part of faculty advancement pathways.
- ***Diversity and Inclusion Policies*:** Encourage equitable representation in academic leadership through affirmative strategies and accountability mechanisms.
- ***Recognition of Excellence*:** Establish national-level fellowships and awards for excellence in academic leadership.
- ***Review Process*:** Mandate leadership induction and review processes for key positions like vice chancellors and Deans.

Conclusion

Academic leadership serves as the cornerstone for transformative higher education. As institutions respond to the evolving demands of the 21st century, there is a pressing need to invest in nurturing dynamic, visionary, and ethical leaders. A coherent strategy encompassing policy support, institutional commitment, and targeted development initiatives will be essential in fostering a resilient, innovative, and future-ready academic ecosystem.

For Indian higher education to become globally competitive and socially responsive, developing robust academic leadership is imperative. Academic leaders must be equipped not only with administrative skills but also with a trans formative vision, an ethical compass, and a deep commitment to public service. Institutions must create enabling environments where such leadership can be cultivated, recognised, and sustained.

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Navigating the Challenges: Implementing STEAM Education in Indian Universities

Gyanendra Singh*, Raj Singh and Sunil Kumar Tripathi*****

To promote innovation and multidisciplinary education, which is one of the main goals of National Education Policy- 2020, some Indian universities/ Institutions have recently embraced the STEM (Science, Technology, Engineering, and Mathematics) curriculum. With the addition of arts stream teaching with STEM, a new term has been coined: 'STEAM'. Despite the numerous benefits it offers, the implementation of STEAM education faces some hurdles. This article explores the challenges encountered by Indian institutions in curriculum development, assessment system implementation, and skill-based education implementation for STEAM in Higher education. Furthermore, it provides solutions to challenges and examines practical instances from universities that successfully implement STEAM courses.

The objective of the STEAM education concept is to provide a comprehensive learning environment that fosters both creative and analytical thinking, offering a cooperative approach to observing the world and solving problems. This is achieved by integrating the disciplines of Science, Technology, Engineering, Arts, and Mathematics (STEAM). This notion aims to create a learning-friendly environment (Belbase, 2022). The term STEAM might be new to the education fraternity around the globe, but this was in practice in the ancient Indian education system (NEP 2020; Kadambari, 2010). Explore the abundant cultural legacy of ancient Indian literary works, where a comprehensive education was characterised by proficiency in the 64 Kalaas or artistic disciplines. These arts, which include music, painting, chemistry, mathematics, carpentry, clothes-making, medicine and engineering, were deemed indispensable (NEP 2020; Kadambari, 2010). We must not overlook the significance of developing soft skills such as communication, discussion, and debate, which were also considered essential components of a comprehensive education in ancient times (Mishra, 2023).

The incorporation of STEM subjects into a cohesive educational programme, known as an interdisciplinary approach, is a way to educate pupils (Hom, 2014) STEM, as described by the Department of Education of Western Australia, is a pedagogical method that promotes creativity, inquiry, conversation, cooperation, and critical thinking (Department of Education Government of Western Australia, 2019). To cultivate innovation, promote cooperative and hands-on learning, and enhance students' ability to solve problems, the concept of STEAM has been introduced, incorporating the Arts with STEM (Education Closet, 2019).

The United Nations, in its 2030 Agenda for Sustainable Development, stated that we have been unsuccessful in addressing global issues caused by human activities. Education has been ranked as the fourth priority out of the 17 Sustainable Development Goals (SDGs). In its report on sustainable development of education, UNESCO acknowledges that education entails both scientific problems and ethical implications in its efforts to promote the well-being of communities, nations, and humanity as a whole (UNESCO, 2006; Agenda for Sustainable Development, United Nations, 2015).

Incorporating arts into STEM education enriches and broadens the reach of STEM education, leading to a more holistic and diverse educational approach. The platform empowers instructors to actively participate in the creation of curriculum within their institutes and embrace a humanistic approach to teaching in the 21st century, thereby strengthening their professional obligations. Teachers have the chance to derive inspiration from project-based learning strategies. Specifically, the STEAM approach promotes profound learning by involving students in five interrelated modes of understanding. These encompass cultural self-awareness, relational awareness, critical awareness, visionary and ethical awareness, and practical awareness. By integrating various methodologies, STEAM fosters a holistic comprehension and utilisation of knowledge (Holm, 2011 and Taylor, 2016).

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The incorporation of STEAM into higher education curricula in Indian Universities is driven by the goal of cultivating graduates who possess both technical expertise and innovative problem-solving skills. However, the integration of this innovative technique into the existing educational frameworks presents multiple obstacles. The purpose of this article is to analyse the difficulties related to the incorporation of STEAM education in Indian universities and to suggest a probable solution.

Challenges for Implementing STEAM Pedagogy in Indian Universities

Integrating STEAM into the higher education teaching pedagogy demonstrates a progressive mindset for Indian universities. The aim of this effort is to promote a cross-disciplinary and inventive approach to education as per NEP 2020, in accordance with current worldwide patterns and the demands of the global market. However, the current implementation poses some difficulties, especially in the areas of curriculum design, assessment methodologies, and skill development. This study offers highlights of the current difficulties.

Curricular Challenges

Rigid Curricular Structures

The curricular frameworks in Indian universities have historically followed a structure that is based on well-defined disciplinary divisions. In this structure, each discipline operates independently from the others. The higher education system exhibits a distinct and inflexible framework, where departments are structured according to specific fields of study, such as physics, history, or computer science. The curricular content and teaching methods of these departments generally do not exhibit significant overlap.

The existence of rigidity poses a significant challenge in the implementation of STEAM, as it impedes the necessary exchange of ideas and methods that interdisciplinary learning depends on. The incorporation of arts into the engineering curriculum offers several advantages in terms of fostering and developing creative problem-solving abilities. The process of developing courses that integrate multiple fields can present logistical challenges and bureaucratic complexities, particularly when strict curricular boundaries are in place. Challenges may arise for departments when determining how to allocate responsibility for cross-disciplinary courses, especially in regards to funding, staffing, and assessment. Furthermore, traditional curricula tend to emphasise specialised knowledge in a specific subject rather than a comprehensive understanding across multiple subjects. This can complicate the integration of a multidisciplinary STEAM approach.

Lack of Interdisciplinary Faculty

The dearth of faculty members who possess the necessary training or expertise in interdisciplinary teaching and learning presents a substantial obstacle to the successful integration of STEAM in Indian universities and colleges. The conventional method of faculty development has predominantly focused on improving proficiency within certain disciplines rather than investigating the interconnections and intersections between diverse fields. The restrictive curricular arrangements pose further obstacles in this specialism, as faculty members may lack the requisite expertise or drive to teach courses beyond their main field of study.

The storage of multidisciplinary professors can be ascribed to a multitude of issues. Academically, many colleges prioritise traditional indicators of success, such as publications and citations, when it comes to recruiting and promoting faculty members. These criteria are usually more achievable when there are clearly established discipline boundaries. Furthermore, there is a scarcity of formal instruction and opportunities for professional growth that are specially designed to cater to interdisciplinary teaching approaches. The scarcity of resources acts as a deterrent for faculty members who would be inclined to investigate this topic.

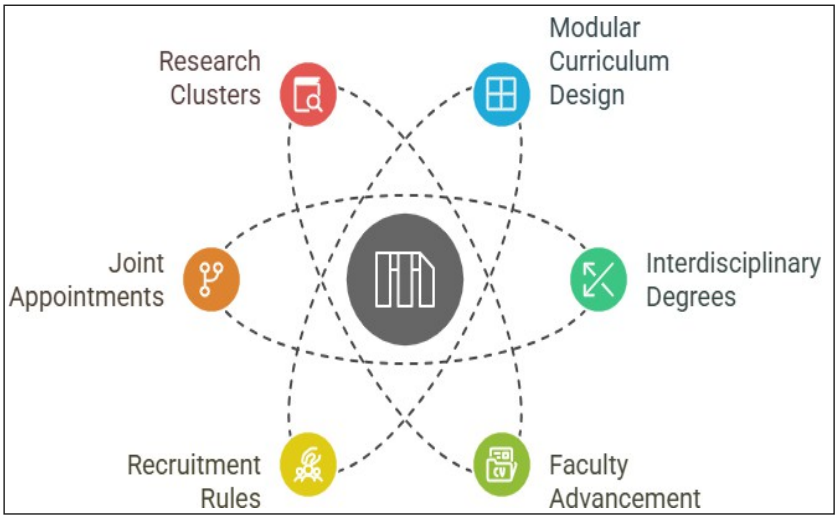
Addressing the issues of rigid curricular structures and the lack of interdisciplinary faculty in Indian universities involves a multi-faceted approach that requires systemic changes at both the policy and implementation levels, which is depicted in Figure 1. Here are several possible solutions tailored to the context of Indian higher education institutions:

1. Modular Curriculum Design: The adoption of a modular curriculum would allow students to choose courses from different fields, promoting a holistic and integrated approach to education. Universities should undertake a process of restructuring their courses to enhance flexibility and foster mutual support.
2. Creating novel interdisciplinary degree programs can facilitate the integration of

diverse academic disciplines. These curricula would necessitate cooperation among diverse departments and faculties, cultivating an atmosphere of interdisciplinary education and learning.

3. Enhancing the advancement and recruitment of faculty members. Universities should offer frequent workshops and professional development sessions to instruct faculty members in the development of interdisciplinary curricula, teaching techniques, and research methodologies. The objective of this programme is to equip teachers with the necessary expertise to proficiently traverse and incorporate many academic fields.
4. Revise recruitment rules to give preference to faculty members with demonstrated expertise in transdisciplinary environments. An important factor to consider when making recruiting decisions is to prioritise multidisciplinary research papers and initiatives.
5. Encourage the establishment of joint appointments to facilitate the exchange of faculty members between different departments. This promotes cooperation and enables links between different disciplines.
6. Promote the formation of interdisciplinary research clusters by fostering collaboration among experts from many fields to work together on collaborative initiatives. These clusters can also foster conversations, presentations, and conferences that encourage an interdisciplinary atmosphere.

Figure 1. Illustration of Strategies for Addressing and Implementing Curricular Challenges



Assessment Challenges

Traditional Assessment Methods

Traditional assessment procedures in Indian universities typically involve standardised tests and examinations that emphasise rote memory and the ability to handle subject-specific problems. The incorporation of these techniques is firmly ingrained in the educational system, as they are widely esteemed for their apparent impartiality and ease of execution. However, these techniques are becoming recognised as insufficient for evaluating the broader, more complete skills that are developed through STEAM education. The primary objective of STEAM is to cultivate creativity, interdisciplinary understanding, and project-based learning. This requires a unique type of assessment that can effectively capture the complexity and nuance of creative and integrative thinking.

The problem with traditional exams in the STEAM field is that they sometimes fail to consider important skills, such as the ability to apply information in new and unexpected settings, work collaboratively across many disciplines, and demonstrate creative thinking.

Evaluating Creative Outcomes

The evaluation of creative results poses a distinct array of difficulties. The concepts of creativity and innovation, which play a central role in STEAM education, are inherently subjective and can manifest in a wide range of ways. The limitations of traditional grading systems become apparent when applied to creative processes, which involve ambiguity and risk-taking. These systems, which heavily rely on quantitative measures and clear-cut answers, are not designed to effectively evaluate the complexities inherent in creative endeavors. To evaluate such outcomes, one must possess a comprehensive understanding of the creative process, which encompasses the skills of taking initiative, thinking laterally, and effectively incorporating feedback.

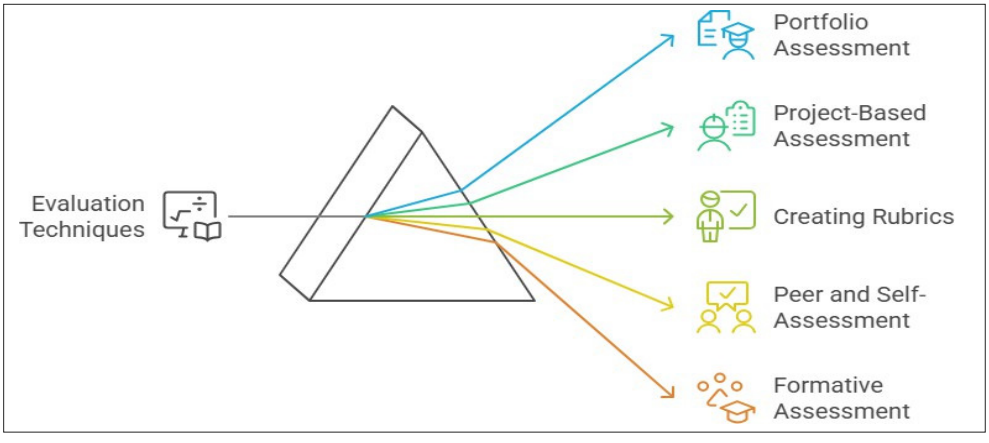
The assessment methods used for creative work must be able to accommodate a wide range of interpretations and solutions to problems, due to the subjective nature of this type of work. The

task becomes particularly challenging within a vast and varied educational system such as that of India. Here, the standardisation of assessments plays a crucial role in effectively managing the large student populations. However, this approach comes at the expense of individual creativity and self-expression.

To address these problems, Indian institutions can employ diverse techniques to improve their evaluation methodologies and align them with the goals of STEAM education shown by the prismatic view in Fig. 2.

1. Portfolio Assessment: Portfolios allow students to compile and reflect upon a selection of their work over a specific timeframe, providing a more comprehensive perspective of their learning and progress. This approach is particularly well-suited for fields like the arts and design, which are integral to STEAM and largely depend on creative methodologies.
2. Project-Based Assessment is a technique of evaluating students by having them complete real-world projects that require the use of abilities from many disciplines. The assessment evaluates both the end result and the steps taken to achieve it, including teamwork, investigation, critical thinking, and the integration of input.
3. Creating rubrics that include criteria for creativity, problem-solving, and multidisciplinary integration might help to standardise the evaluation of these skills, even in the subjective setting of creative projects.
4. Peer and Self-Assessment: Involving students in the assessment process through the inclusion of peer reviews and self-assessment encourages introspection and cultivates analytical thinking abilities. This technique facilitates students' understanding and appreciation of the criteria employed to assess creative work, so promoting a deeper engagement in their education.
5. Transitioning the focus from high-stakes testing to continuous, formative assessment can provide significant and constant feedback that is essential for learning in intricate, multidisciplinary topics like STEAM.

Figure 2. Evaluation Methods Addressing Challenges in Implementing Effective Assessment Practices



Skill Development Challenges

Mismatch Between Curriculum and Skill Requirements

Indian universities are widely acknowledged for their challenging academic courses, especially in the domains of engineering, technology, and science. However, due to the ongoing development of the global labour market, there is a clear difference between the traditional curriculum provided by these schools and the constantly evolving skill requirements in modern interdisciplinary disciplines. The disparity is particularly evident in the field of STEAM education, which emphasises a holistic and interconnected learning method that incorporates both creative and analytical skills. The curricula implemented by many Indian universities generally focus on theory, with an emphasis on acquiring foundational knowledge and technical abilities in particular disciplines. While this educational approach provides a thorough understanding of basic ideas, it often falls short in fostering adaptability, problem- solving skills, and creative thinking, which are crucial in today's ever-changing professional environments. For instance, a computer science programme may prioritise instructing students in programming languages and algorithms, but it may not offer extensive instruction on the innovative utilisation of these talents in fields like digital media, interactive design, or technology-driven art.

Lack of Practical Experience

The problem of a curriculum that does not align with practical experience is worsened by the lack of hands-on learning opportunities given to pupils. The academic instruction offered in Indian universities sometimes receives criticism for its heavy reliance on memorization and theoretical exams, with insufficient focus on practical, hands-on learning. Lacking practical experience in STEAM domains is a notable disadvantage, as these fields prioritise the amalgamation of knowledge from several disciplines and its practical use in real-life scenarios.

Practical abilities are essential for both the application of theoretical knowledge and the advancement of innovation, as well as the development of new technologies and solutions. Many graduates frequently encounter a drawback as a result of insufficient possibilities during their educational experience to actively engage in real-world initiatives, utilise industrial technologies, or address practical issues. The presence of this disparity is particularly evident in engineering and technology programmes. In order to prevent practical skills from becoming outdated, it is imperative to engage in constant hands-on learning due to the rapid pace of technological advancement.

To address these difficulties, Indian universities should implement several strategic changes, which are also depicted by Fig. 3

6. *Overhauling the Curriculum*: It is crucial for colleges to reassess their curriculum by include a larger number of interdisciplinary courses that effectively blend technical proficiency with creative and analytical thinking. An effective strategy is to form partnerships with influential industry leaders to guarantee that the curriculum remains current and applicable to the present job market.
7. *Project-Based Learning*: Incorporating project-based learning into the curriculum facilitates the linkage between academic knowledge and practical application. This approach fosters active student participation in hands-on problem-solving, frequently through collaborative teaming, which not only enhances technical skills but also develops crucial interpersonal competencies such as effective communication, leadership, and cooperation.
8. Establishing strong partnerships with the industry can facilitate the creation of excellent educational opportunities for students, such as internships, apprenticeships, and on-the-job training. These partnerships can also help universities remain current with evolving industry requirements and adjust their programmes accordingly.
9. Faculty development is crucial in providing educators with the essential abilities to deliver interdisciplinary and practical learning experiences. Efficient professional growth should entail acquainting oneself with contemporary industrial practices and integrating inventive teaching techniques that emphasise experiential learning.
10. Investing in infrastructure is essential for improving the educational experience of students in STEAM disciplines. By enhancing the facilities

Figure 3. Depiction of Strategies for Overcoming Challenges in Implementing Effective Skill Development Practices

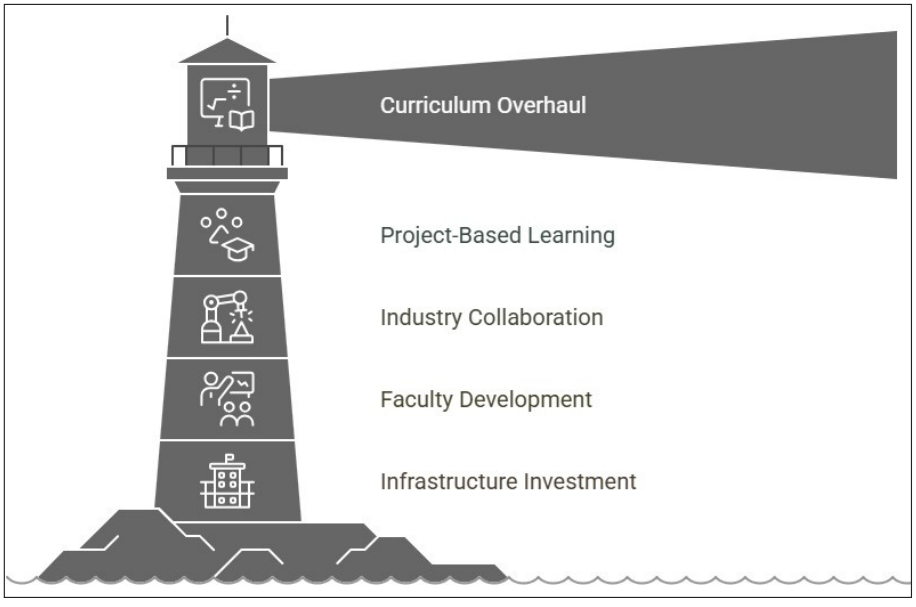
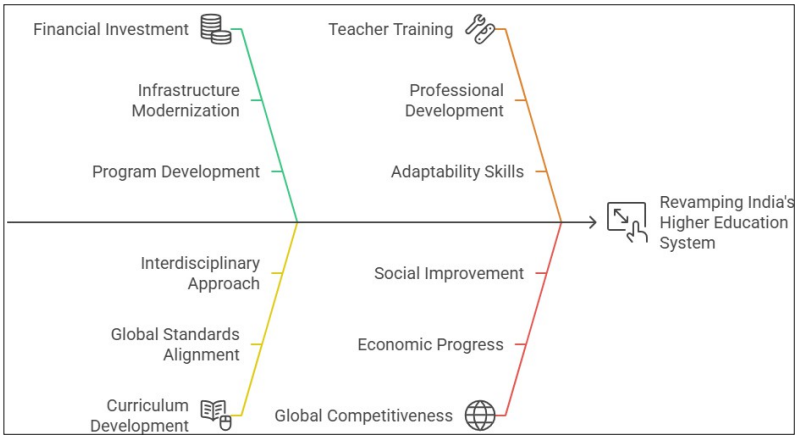


Figure 4. Depiction of How to Revamp India's Higher Education System



in laboratories, studios, and tech hubs to mirror actual professional settings, students can acquire hands-on experience that will enhance their chances of success.

In addition, India should adopt STEAM (Science, Technology, Engineering, Arts, and Mathematics) to enhance innovation and international competitiveness as it revamps its higher education system. To enable this integration, significant investments are needed to revamp educational programs, provide professional development opportunities for teachers, and modernise the physical infrastructure. Ensuring alignment with global standards in education necessitates this type of funding, which is crucial for overall academic success. The implementation of STEAM programs, which cultivate adaptability and creativity in pupils, can facilitate the advancement of national goals, economic progress, and social improvement. In order for India to successfully transition into a knowledge-driven economy, the STEAM fields must receive significant financial support from the country's Universities and colleges. By implementing this strategy, Indian institutions will be equipped to furnish students with the necessary resources to develop into powerful individuals and international frontrunners.

Conclusion

To successfully incorporate STEAM pedagogy into Indian colleges, it is crucial to tackle substantial obstacles in the areas of curriculum design, evaluation, and knowledge acquisition. Universities aim to provide their students with the essential expertise and understanding required to excel in their prospective professions and make significant contributions to their academic disciplines. This is accomplished by motivating pupils to tackle issues with thorough and inventive solutions. Integrating STEAM into the curriculum effectively will provide students with a wide-ranging and interconnected set of skills that are crucial in today's professional environment. This will result in an overall improvement in the quality of higher education in India.

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Bridging Past and Present: The Evolution of Media and Law

T N Ninan, former Chairperson and Editor of Business Standard delivered the Convocation Address at the 33rd Convocation Ceremony of the National Law School of India University, Bengaluru on September 07, 2025. He said, *"I do hope that you will hold close to you the standards of integrity and the spirit of public service that are naturally expected of you. Like many of our systems of governance, the judicial system, too, could do with improvement. This is not the time and place to go into the details. But it is reasonable to hope that all of you will be part of the solution, not the problem."* Excerpts

Fortunately, we are well-positioned to address such tasks and have the resources to do so. Over the last half-century, we have mostly abolished absolute poverty while developing many capabilities. We now need to become more resilient to external pressures in a world of possibly escalating conflict. I would say that this is our national task for the coming decade or two.

Whether we become a developed nation by the time we mark the centenary of our independence, or even a little later, depends fundamentally on how we address these tasks. And they must be addressed more by your generation than mine. And in that enterprise, therefore, you have our goodwill and best wishes.

Today is a day of celebration. To begin with, let us celebrate this University, which has been a pioneer in the field of law and a noted flag-bearer. It should be a matter of pride for all present here that this university has once again been ranked first among all law schools and law universities in India. Such sustained leadership, year after year, does not come easy. My warm congratulations.

We should also celebrate the other national law schools and institutions imparting education in law, as these have vastly improved on what used to be offered earlier. We should celebrate our broader higher education system, which now has an enrolment level approaching 30 per cent, with some states near 50 per cent. This growth is reflected in this University too, which has grown to become multiple of its original size, with a diversity of courses.

We should also celebrate our courts and judges, and our legal system, which makes this a country of laws. We should celebrate our democracy and our Constitution, which has guided us for the last three-quarters of a century and guarantees our freedoms.

We should celebrate our economy. When I was leaving university in the early 1970s, more than half of Indians were below the poverty line, unable to get even two meals a day. Today, we have virtually abolished absolute poverty and done so in a democratic system. Given the position from where we began, this is an achievement with few, if any, peers, and therefore almost unique. And we should celebrate the fact that we are now level with the world's fourth-largest economy, with a record of economic growth that is the envy of the world. For some time now, we have been the third-largest contributor to world economic growth. This growth and size are what offer opportunities for you as you enter the job market.

For the last three decades and more, students from this university have stepped out into a wider world in which they have made significant contributions and done this institution proud. You, the graduating class of today, entered the National Law School University of India as a small, select group chosen from among many thousands of applicants. In your time here, you have acquired the knowledge, skills and maturity to be able to blaze a trail in your future careers, as your illustrious predecessors have done. I offer you my congratulations on your graduation today, and wish you well in your future endeavours.

I do hope that you will hold close to you the standards of integrity and the spirit of public service that are naturally expected of you. Like many of our systems of governance, the judicial system, too, could do with improvement. This is not the time and place to go into the details. But it is reasonable to hope that all of you will be part of the solution, not the problem.

I belong to the world of journalism, which I entered more than half a century ago. And I have been studying and writing on the steady growth and

transformation of our economy from the 1970s till today. So my remarks to you will be in two broad halves, the first on journalism and the second on economic development and the accompanying shift of global power.

I deliberately use the word journalism, and not media, because the media is a business with financial objectives, while journalism is a trade or profession that, like the legal profession, comes with a set of values. Things work best when the financial logic of the media business is in harmony with journalistic values and ethics, but we know that this is not always the case. And I will come to this area of conflict in a moment.

But let me first focus on how things have changed, and yet not changed. The world of journalism in the 1970s was dominated by daily newspapers and, to a lesser extent, by periodical magazines. That was before the age of personal computers, so we wrote on typewriters. Transmitting text was slow and laborious, by telex and teleprinter, and the printing and production processes had not changed for perhaps a century. Radio and TV in India were state monopolies at the time, and had limited appeal.

It was a fundamentally different world from what exists today, dominated as it is now by the proliferating broadcast media with hundreds of news and entertainment channels, the literally countless digital media entities, and more recently by the altogether new world of social media. This last is different from all others because it is unfiltered content. Of course, when one looks at what is often broadcast today, one could question the value of whatever editorial filters exist.

Nevertheless, the phenomenon of troll armies deliberately purveying fake news is a new experience. Now, still newer challenges confront us, with the transformative potential of artificial intelligence that has already entered our newsrooms.

The question is whether the proliferation and ubiquity of the media have changed the ways in which journalism is practised. When I look as far back as the 18th century, Paris had a scurrilous gutter press that destroyed the reputation of Marie Antoinette and her hapless husband, Louis XVI. That played a significant role in bringing about the epoch-making French Revolution.

It was also in the second half of the 18th century that reporters were for the first time allowed to take notes and report proceedings in Parliament. That provoked Edmund Burke to say that the reporters' gallery in Parliament represented a fourth estate. This, he said, was more powerful than the three traditional "estates" represented in Parliament, namely the clergy, the nobility and commoners. Today, the three estates are generally understood to be the legislature, the executive and the judiciary. And I doubt very much that anyone in the reporters' gallery considers themselves more powerful than these other three estates.

This is odd, since this is very much the age of the mass media. But what we confront is the paradox of an everywhere media combining with an apparent loss of media influence. Perhaps that is precisely because the media are ubiquitous, fragmented and polarised. The relentless flood of information and messages can overwhelm, leading to inaction and indifference rather than engagement. Though ethnic cleansing and the starving of a people have been going on for months in Gaza, the world seems unmoved. It would seem that we are simply benumbed, having lost the ability to be shocked or outraged.

The Vietnam War in the 1960s was said to be the first war that was fought in the age of TV. As war images were telecast live into American homes, it had an impact on American opinion that Gaza does not today. Similarly, the Bofors scandal of the 1980s, broken by a remote Swedish radio station, brought down the government. That contract for field artillery was for about Rs 1,400 crore, and the commission or bribe paid was less than Rs 200 crore. Today, we have reports of scandals running into the tens of thousands of crores, but we seem to treat them as routine events.

It matters that politics has become polarised. People choose the media that reflects their views and biases. When you get only the kind of news that you want, journalism loses the power of persuasion since you are preaching to the already converted; in fact, you only get confirmed in your views and biases.

There are also suspicions in the public mind that the media are influenced by their business owners, and by those in authority--especially since media ownership has tended to move from traditional family ownership to our largest business

conglomerates that have varied interests. This has become more real and pressing over time, and I would think led to some loss of credibility. Nevertheless, when the average person seems to spend two to three hours every day on different kinds of media, especially social media, it is hard to argue that this is not fundamentally the age of the media in a way that no previous era has been. That has not changed the fact that journalists and judges represent two 'estates' that occupy two ends of the chain of public events. Journalists are, in a manner of speaking, the first responders; they alert people to events, developments and issues that otherwise people might not be aware of. And judges are the last bulwark; they deliver the final verdict that settles the debate. There is, therefore, a symbiotic relationship between journalism and the judiciary. The system works best when both play their assigned roles, the first as watchdog and the second as the final arbiter of whether there was something to bark about.

Attempts by the two estates in the middle of the chain, namely the legislature and the executive, to regulate and control the fourth estate are very much matters of current debate and concern, precisely because the changes in media are seen to have affected the kind of journalism being practised, or just made it more pervasive and immediate. While new laws and rules are being drafted to deal with the complexities of the changed media scene, what should not be lost is the freedom of speech that is our fundamental right and protection, even as the negative aspects of a diverse media are sought to be controlled--if at all that is now possible any more than it was in the late 18th century in Paris.

A positive development is that a proliferating media has also led to specialisation. In the old days, the proceedings of the Supreme Court, the various High Courts and the trial courts were confined largely to the most significant or sensational cases, and even these were sometimes only perfunctorily reported. That has changed with the advent of specialised websites like Live Law and Supreme Court Observer, which offer reliable, up-to-date and more comprehensive coverage of court proceedings. As students of law, you may be familiar with these websites. I venture to suggest that they have helped both judges and lawyers, as well as the wider public, precisely because the very function of the media is to inform, such that it leads to more informed opinions and therefore to better decisions.

The birth of such specialisation, in the media like in other fields, is the hallmark of a developing economy. When one considers the half-century that I have focused on, let me recall that the 1960s were considered to be the first development decade, and the 1970s the second development decade. Development became the global focus after the decolonisation of the previous quarter-century. Over more than half a century, that process has brought us to a cusp today, when old powers have to deal with the new. The old colonised and otherwise poor countries, which are broadly speaking today's emerging markets, account now for about half the world's GDP, and at least three-quarters of the world population.

The rise of the Global South represents the biggest shift in global power in 500 years. Such a seminal change is often and perhaps inevitably marked by conflict as the old powers resist change and the rising powers assert themselves. The global drama that we see being played out today must be understood in this long view of history. As the shift of power gains momentum, we should expect conflict also to intensify.

The rise of the Global South, including India's, was achieved in a world with a certain set of rules, whether on financial arrangements, trade and tariffs, open sea lanes, or simply respect for national sovereignty and borders. Those rules were set by the Great Powers of the mid-20th century, who believed that the rules served their interests as well as those of the rest of the world. So, by and large, the Great Powers followed the rules they had created. In a generally benign environment, even the most powerful countries were willing to limit national sovereignty, in that they agreed for the most part to abide by the generally agreed global rules and cooperative action.

But as global power has shifted, attitudes have changed. The rule-makers of yesteryear have become the rule-breakers of today. Where there was a world order, however unequal and unsatisfactory, we now have increasing disorder. The very agreements that the Great Powers initiated and signed are being tossed aside. Instead of a world that gave special consideration to the weak and poor when it came to trading rules or climate change, we now have the assertion of unilateral power and plain bullying, unchecked by yesterday's rules and norms.

This new world is awash with sanctions, embargoes and unilaterally imposed penalties. The very countries that enjoy veto power in the UN Security Council, which is charged with maintaining the peace and respecting national borders, now launch wars of choice to acquire territory, as in Ukraine. Or they threaten to do so, as with Taiwan and even Greenland and the Panama Canal. Geo-politics was always about power, but increasingly it is power unrestrained by rules.

Underlying these changes is a change in mindset, from seeing interdependence and trade networks as an advantage to viewing them as a vulnerability. So we see a movement away from more than half a century of trade liberalisation. Out therefore with globalisation, in with 'my country first'. Out with networked economies and supply chains, up go protectionist walls. Out with market efficiency, in with national security. Perhaps the most important change is that the country that originated much of the rule-making of the past is now defined by unpredictability. No one knows what it will do next, least of all its allies. All of this makes the world a more turbulent place, with many more uncertainties and risks than before.

Countries like India that benefited from settled arrangements now face new dilemmas and pressures. How do we deal with this new world? And what is the framework of thought and strategy that must guide our actions? To answer such questions, we must consider issues like power and vulnerability.

Hans Morgenthau was one of the founding fathers of the realist school in international relations. In the middle of the last century, he focused on the idea of national power, which he based on the premise that "*animus dominandi*" defines human nature. That means the "desire for power" and "lust for the domination of people". Morgenthau saw politics, including international politics, as a struggle for power. Later, in the mid-1980s, the Chinese developed the concept of Comprehensive National Power, an idea that has gained increasing acceptance in intellectual and strategic circles. This has encouraged academics and think-tanks to attempt country rankings of national power.

These power metrics have been constructed variously on the basis of eight or 10 components of power, including hard military and economic power, other assets like natural resources, human capital and technological prowess, and elements of soft power like diplomatic and cultural influence. To these are added assessments of internal cohesion, leadership and national will.

Where does India stand in such power rankings? There are different scores, based on the indicators used and the weightings given to each. One originating from the US places India 12th in a country ranking on CNP. This is not very flattering, as we are one slot below the UAE. Within Asia, we are placed below Korea and Japan, and Saudi Arabia.

But a quite different Asia Power ranking, done by Australia's Lowy Institute, places India in third place, behind the US and China, and incidentally one step above Japan. What is notable about even this more favourable ranking is that India scores poorly on economic relationships, probably because we have chosen to stay out of regional trading arrangements.

What is the picture when we narrow our focus to just the strategic sectors? The US-based Information Technology and Innovation Foundation is a think tank that focuses on science and technology policy. It runs a Hamilton Index that tracks where countries stand on 10 strategically important industries, such as computers, chemicals and pharmaceuticals. The US once dominated the index. But by 2020, China dominated seven of the 10 industries in the index, while the US led in the other three.

The same story is told by the Australia Strategic Policy Institute's Critical Technology Tracker. This assesses country positions in eight critical technologies, which are broken up into 64 sub-categories. The technologies range from advanced materials to artificial intelligence, and from gene technology to cybernetics and robotics. The US led in 60 of the 64 sub-categories during the five-year period 2003-07, while China led in three. By the time of the 2018-23 five-year period, the picture had changed dramatically. China now leads in 57 of the 64 categories, with the US usually but not always occupying second place in those sectors.

These rankings reflect the power shift that I spoke of, especially the dramatic change of balance between today's two superpowers, namely the US and China. They also reflect the fact that all other

countries are essentially also-rans, but in three categories: First, there are a few major powers like Russia and some of the more advanced countries; then a bunch of middle powers, followed by a long list of minor powers. India usually figures as a middle power. The associated commentary is that India punches below its real weight, but is improving its power rankings and therefore on its way to becoming a major power.

In short, we may well view the world as multi-polar, whereas in any power or technological metric, it is essentially bi-polar. In this bipolar world, we are now buffeted by indirect sanctions and forbidding tariffs from the US, while on the other side, China denies us rare earths, fertiliser and critical machinery while also occupying our territory. This is a more difficult situation than in the Cold War, when we enjoyed the broad goodwill of both the superpowers of that age. Even though relations with the US went through ups and downs, active hostility was confined to a brief period in the early 1970s.

The situation today is quite different. With China having replaced the Soviet Union as a superpower, and with the US taking an aggressive stance, we have an adversarial or conflict-ridden relationship with both of today's superpowers. With China, there is even a fusion of military interests with Pakistan. With Trumpian America, we face unpredictability, invective and hostile action. Both relationships are basically asymmetrical in that we are the weaker power. Perhaps for the first time, we are caught between a rock and a hard place.

On the positive side, India is stronger and more capable than it has ever been. The economy is stable and all the macro-economic indicators -- whether inflation, our external balances, foreign exchange reserves, or the fiscal position -- all the indicators are flashing green. Our military has been gaining in strength and technological sophistication, supported by a growing domestic defence industry. It is not for nothing that we are seen by almost all international observers as a rising power.

Nevertheless, our weaknesses have been exposed by the pressure from the two superpowers. I therefore want to suggest that, in place of the paradigm that looked at national power, we should focus henceforth on national vulnerabilities that have to be tackled urgently, and how to build the capabilities with which we can tackle those vulnerabilities.

This means making more at home that we mostly import, like computer chips and solar cells, and also more traditional but equally critical items like fertiliser and pharmaceutical intermediates. It means indigenising weapons production of things like drones and air defence equipment, and developing our own technology, as we have done with our 5G technology stack or our own navigation satellite system. It means increasing the role of renewable energy since we are short of carbon fuels and currently face hostile action on our oil imports. It means doing what we did when COVID-19 hit, by rapidly ramping up our vaccine manufacturing so that we could carry out an effective nationwide vaccination campaign and also supply vaccines to the rest of the world.

But tackling vulnerabilities means much more. In today's context, it is obvious that we have to become a more powerful trading nation. That means expanding the organised sector of our economy, which is essential for productivity growth and technological progress. It means increasing the presence of our universities in world rankings and putting greater money and energy into research and development. Where we are not able to do things on our own, it means building reliable partnerships with some of the major powers to jointly move forward in strategic areas--as we have indeed done with missiles, nuclear submarines and cryogenic rocket fuels.

Fortunately, we are well-positioned to address such tasks and have the resources to do so. Over the last half-century, we have mostly abolished absolute poverty while developing many capabilities. We now need to become more resilient to external pressures in a world of possibly escalating conflict. I would say that this is our national task for the coming decade or two.

Whether we become a developed nation by the time we mark the centenary of our independence, or even a little later, depends fundamentally on how we address these tasks. And they must be addressed more by your generation than mine. And in that enterprise, therefore, you have our goodwill and best wishes. ❑

Book Review

A Milestone Value Addition to Sports Literature

Amarendra Pani* and Mohammad Ilyas**

Singh, Gurdeep (2023). *Ultimate Dream: Olympic Gold,* Khel Sahitya Kendra, New Delhi, Paperback, Pages 266, Rs 1500.

Sports Science, as a field of inquiry has been evolving continuously. Realizing the complex challenges of the 21st century and preparing the youth to cope up with such challenges, the New Education Policy - 2020 strongly advocates for multidisciplinary and holistic education. The objective is to nurture student's overall growth encompassing the cognitive, physical, emotional social, spiritual well-being to make them well rounded personalities. Physical Education has been recognised as an essential component of the main stream education. In the age of competitive sports there is rush among the countries to secure medals and awards, especially in Olympic games. India as a young and sporting nation is gearing up and developing sports infrastructure and policy for identifying the talents and give them advance training so that the much discussed demographic Dividends can be nurtured, capitalised and channelise for achieving objective.

The Book titled as Ultimate Dream: Olympic Gold authored by Gurdeep Singh, an elite athlete and veteran sports administrators, published by Khel Sahitya Kendra is timely and apt to accentuate the efforts of the Ministry of Sports, Govt of India and the sports fraternity in achieving the ultimate dream i.e securing gold medal in Olympics.

This book is a significant contribution to the growing body of Indian sports literature. The book stands out not only for its insightful exploration of elite sports performance but also for its rich foundation in the author's extensive experience as a senior administrator, academic, and practitioner in India's sports ecosystem. Having represented India at multiple Olympic Games, served key roles at the Sports Authority of India and the Association of Indian Universities, and led delegations to international sporting events, Gurdeep brings a rare blend of practical knowledge and academic depth to this work. The book is crafted for elite athletes, coaches, sports scientists, and administrators who are actively engaged in the pursuit of Olympic excellence and systemic reform in Indian sports. Structured over 266 pages, it thoughtfully weaves together the themes of scientific training, smart nutrition, athlete development, and institutional planning. The chapters are strategic blueprint for sports success grounded in evidence-based approaches and long-term planning.

One of the book's central themes is the role of universities in nurturing Olympic-level talent in India. The author emphasizes that Indian university athletes, when given the right scientific support and coaching infrastructure, can compete with the best in the world. He recounts how, despite infrastructural and administrative challenges, Indian university athletes have continued to shine - thanks to their innate resilience and the strategic backing of committed administrators. This narrative is particularly valuable, as it highlights an often-overlooked segment of India's sporting structure: the student-athlete ecosystem. The author draws on his long-standing association with the AIU to show how universities can become fertile grounds for Olympic preparation if supported by clear policies and scientific interventions. Another highlight of the book is its commitment to scientific rigor. The author outlines the importance of advanced training methods, evidence-based coaching practices, and smart nutritional planning. While the book may not provide highly technical details like sample workouts or dietary schedules, it introduces readers to the principles of periodization, recovery management, sports psychology, and performance monitoring, all of which are essential for achieving elite performance in the modern sporting world.

The book also delves into the psychological, institutional, and sociocultural aspects of high-performance sports. It reflects on the personal sacrifices, discipline, and long-term vision needed to reach the pinnacle of competition, while also critiquing the limitations of India's current sports policy and administrative hurdles. Evidently, the author does not shy away from discussing the systemic gaps - be

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it in the lack of adequate infrastructure, bureaucratic delays, or the underappreciation of sports science - which, if addressed, could significantly elevate India's global standing in sports. His proposals for reforms are not idealistic but stem from decades of on-ground experience, making them both practical and credible. What sets this book apart is its ability to speak to multiple audiences at once. For the academic reader, it provides a structured argument backed by data and case studies. For the practitioner, it offers field-based insights into how to build, manage, and mentor Olympic-caliber athletes. For the policymaker, it serves as a strategic document on reforming India's sports systems through education, governance, and investment.

The author's writing style is balanced - combining personal anecdotes with broader analysis. His reflections on participating in Olympics and World University Games add a personal dimension that enhances the book's readability. However, a few areas may leave readers wanting more. The book, for instance, is heavily India-centric, with limited references to global best practices or comparative studies from countries like China, the USA, or the UK, which could have added a richer global context. Moreover, while the book emphasizes scientific and nutritional frameworks, readers expecting detailed, hands-on protocols might find it more conceptual than practical. Another potential gap is the limited representation of athlete voices. The narrative is largely driven by administrators and coaches, and the inclusion of first-person accounts from athletes themselves—detailing their journeys, struggles, and breakthroughs—would have added a valuable layer of authenticity and emotional resonance.

Despite these minor gaps, *Ultimate Dream: Olympic Gold* is a milestone publication in Indian sports discourse. It not only celebrates achievements but also critically assesses what more needs to be done for India to become a consistent medal contender on the global stage. It aligns closely with the national vision of transforming India into a sporting powerhouse and provides actionable pathways for doing so.

The book's ideal readers include sports administrators seeking to reform national and state-level institutions, coaches aspiring to use scientific methods, sports management scholars looking for case studies in Indian contexts, and athletes who wish to understand the bigger picture beyond their own training routines. It can also serve as a guide for universities aiming to strengthen their sports programs in alignment with Olympic standards. While the book is firmly rooted in Indian realities, its principles and strategies are globally relevant, making it a must-read for anyone who believes in the power of sport to transform lives and nations. ❑

CAMPUS NEWS

National Seminar on Gender Sensitisation

The one-day National Seminar on 'Gender Sensitisation: Building Inclusive and Equitable Learning Environments' was organised by the Faculty Development Centre, Sri Dev Suman Uttarakhand University, Badshahithaul, Tehri Garhwal, in collaboration with the Department of Education, Pt. LMS Campus, Rishikesh on August 25, 2025. The seminar was organised as a part of the university's broader academic commitment to foster inclusive education and promote the vision of the National Education Policy- 2020, which emphasises equality, access, and quality in higher education.

The event was chaired by Prof. N K Joshi, Vice Chancellor, Sri Dev Suman Uttarakhand University. In his Inaugural Address, Prof. Joshi reflected on the deeper meaning of gender equality. He observed that gender equality is not merely a constitutional right but forms the very foundation of a progressive society. He remarked that the purpose of education is not only to transmit knowledge but to bring about positive transformation in society. Educational institutions must be spaces where every student, irrespective of gender, identity, or social background, feels respected, valued, and empowered. Prof. Joshi further emphasised that NEP-2020 also envisions inclusive institutions where fairness, equality, and social justice underpin academic life. He called upon the academic community to actively dismantle stereotypes and biases while ensuring that pedagogy, research, and campus culture are aligned with inclusivity. He praised the Faculty Development Centre for taking the lead in this important initiative. He commended the dedicated efforts of Prof. Anita Tomar, Director, Faculty Development Centre, along with coordinators, Dr Atal Bihari Tripathi and Dr Seema Baniwal.

In her Welcome Address, Prof. Anita Tomar expressed joy in hosting a programme of such vital contemporary relevance. She pointed out that we live in an era where education is not confined to the transfer of knowledge but serves as a powerful instrument of social transformation. Gender sensitisation, she observed, is essential for creating inclusive and equitable teaching–learning environments. She noted that teachers bear a collective responsibility to ensure classrooms, research spaces, and campuses are places where all students, regardless of gender or social background, can access equal opportunities and a respectful environment. Prof. Tomar highlighted that the seminar had been designed not merely as a sequence of lectures but as a dialogue that combines theoretical understanding with practical approaches. It aimed to create awareness among educators, showcase best practices, and foster discussions on eliminating biases and promoting equality. She concluded by acknowledging the visionary leadership and constant encouragement of the Vice Chancellor, Prof. N K Joshi, whose commitment to inclusivity and academic excellence has been a guiding force for such initiatives.

The Inaugural Session was enriched by the reflections of senior academic leaders. Prof. P K Singh, Dean, Arts and Campus Director (in-charge), spoke about the importance of gender sensitisation in institutions, noting that it not only contributes to personality development but also helps build a balanced and harmonious social environment. Prof. S P Sati, Dean, Science, remarked that gender sensitisation is not only a social obligation but also an academic necessity. Without bringing gender equality into teaching and research, he observed, the true democratisation of knowledge cannot be achieved. Their remarks underscored the seminar's relevance to both institutional policy and broader societal needs.

During technical sessions, Prof. Amulya Kumar Acharya (Fakir Mohan University, Balasore, Odisha) and Dr. Ramendra Kumar Padhi (Central University of Odisha, Koraput) were the resource persons. They addressed the interconnected themes of gender equality, inclusive education, and gender sensitivity within academic institutions. Their lectures reminded participants that education is more than a vehicle for knowledge transmission; it is a powerful tool for societal change. They reiterated that gender sensitisation is not peripheral but central to the creation of equitable, democratic learning environments envisioned in NEP-2020. Both speakers highlighted how persistent disparities, whether through stereotypes, unequal opportunities, or unconscious biases, continue to exist and must be systematically addressed through institutional

mechanisms, pedagogy, and policy. They also elaborated on the legal frameworks, policy provisions, and practical approaches that support gender equality in higher education institutions.

The participants engaged in discussions about the challenges and strategies necessary to achieve inclusivity. Teachers and researchers reflected on how they could make their classrooms and departments more aware of gender bias issues. The conversations revealed that while significant progress has been made, a great deal of work still lies ahead to ensure that inclusivity is not merely an idea but a lived reality in higher education.

Dr. Atal Bihari Tripathi, Coordinator and Department of Education, spoke about the objectives of the seminar, noting that the purpose was to sensitise both teachers and research scholars to their responsibility in building inclusive learning environments. He emphasised that gender equality is not an external agenda but an integral part of academic life, requiring consistent effort and reflective practice. At the end of the seminar, he also proposed the vote of thanks, expressing gratitude to the Vice Chancellor, Campus Directors, Deans, Resource Persons, participants, and the organising team, especially co-coordinator Dr. Seema Baniwal.

The valedictory reflections reiterated the message with which the seminar had begun, that gender equality is not a matter of formality but the very essence of a progressive and just educational environment. Participants acknowledged that the deliberations had broadened their perspectives, inspired them to adopt inclusive practices, and provided them with both conceptual frameworks and practical insights. To conclude, the event brought together educators, researchers, and administrators in a shared mission to understand, discuss, and commit to gender-sensitive practices in higher education. The seminar reaffirmed that inclusivity and equality are not optional aspirations but fundamental pillars of education. As participants returned to their classrooms and campuses, they left with the conviction that gender sensitisation is not a one-time event but a continuing commitment to shaping a more just, fair, and progressive society.

International Conference on Recent Trends in Smart Materials

A two-day International Conference on 'Recent Trends in Smart Materials' is being organised by the Department of Physics, Annamalai University, Annamalainagar, Tamil Nadu, from December 19-20, 2025. Anyone from Science, Engineering and Technology, Dental, Medical, Agriculture, etc., pertaining to materials, irrespective of discipline, may participate in the event (Offline Oral Presentations Only).

Smart materials are one of the fast-developing branches of study that embrace almost all disciplines of Science, Engineering, Technology, Agriculture, Dental, Medical and other sciences. The developments in this branch enhance the studies and applications in various nano, micro and macro materials. The objective of the event is to provide opportunities for the different delegates to exchange new ideas and application experiences face to face, to establish business or research relations and to find partners for future collaborations. The topics of the Event are:

- Crystal Growth and Thin Films.
- Electronic and Semi-Conducting Materials.
- Spectroscopic, Dielectric and Ultrasonic Materials.
- Organic, Inorganic and Poly Composite Materials.
- Nano, Smart and Functional Materials.
- Photo-catalytic and Solar Cell Materials.
- Super Capacitor and Energy Storage Materials.
- Bio, Medical and Dental Materials.
- Electric and Magnetic Materials.
- Laser, Optical and Acoustic Materials.

For further details, contact the Convener, Dr. L Palaniappan, Professor and Head, Department of Physics, Annamalai University - 608002, Tamil Nadu, Mobile No: 096884 52618, E-mail: *rtsm2025@yahoo.com* and *lp_dde_au@yahoo.com.* For updates, log on to: *www.annamalaiuniversity.ac.in*

National Conference on Recent Research Trends

A three-day National Conference on 'Recent Research Trends in Advanced Materials and Nuclear Sciences' is being organised by the Department of Physics, Savitribai Phule Pune University, Pune from November 20-22, 2025. The event aims to bring together scholars, researchers, and industry experts to explore breakthrough research ideas in advanced

materials and nuclear sciences. It encourages fostering collaboration and knowledge exchange on sustainable, innovative applications in science and engineering. The topics of the Event are:

- Nuclear Physics.
- Accelerator Physics.
- Material Science.
- Biophysics and Medical Physics.
- Chemical Physics.
- Computational Physics.
- Density Functional Theory.
- Energy Studies.
- Photonics.
- Nanoscience and Nanotechnology.
- Plasma Physics.
- Soft Matter Physics.
- Thin Films.
- Interdisciplinary.

For further details, contact Convener, Dr. Shailendra S Dahiwale, Department of Physics, Savitribai Phule Pune University, Pune – 411007, Mobile No: 08108001200, E-mail: *rrtamns2025@gmail.com* and *ssd@physics.unipune.ac.in.* For updates, log on to: *https://events.unipune.ac.in/sites/Physics_2025/*

Research Methodology Course in Social Sciences

A ten-day National Level Research Methodology Course in Social Sciences on 'Artificial Intelligence Tools for Innovative Pedagogies, e-Content Creation and Research in Social Sciences' is being organised by the School of Education, Central University of Himachal Pradesh from November 13-22, 2025. The event is sponsored by the Indian Council of Social Science Research, Ministry of Human Resource Development, New Delhi. The proposed Research Methodology Course is designed to equip doctoral and post-doctoral research scholars with the necessary tools and skills to harness the potential of AI, thereby improving the quality, innovation, and ethical integrity of academics, educational pedagogies and research in social sciences. The participants will gain practical AI-based pedagogical and e-content creation skills, AI-oriented research skills, interdisciplinary collaboration opportunities, and insights into data-driven policy frameworks, ensuring they are equipped to conduct impactful research, publish in reputed journals, and contribute to the goals of national development.

The framework of the course is designed with an emphasis on interactive sessions to provide hands-on training to the participants to gain the technical proficiency required for applying AI techniques to real classroom situations, develop e-content (both e-text and A-V materials) and social science research projects. Moreover, in the light of recommendations of NEP-2020, it becomes imperative to equip doctoral and post-doctoral students with the necessary skills of using AI tools for innovative pedagogies, classroom and online instruction and creating e-content (e-text and video presentations) as well as for carrying out research studies with AI-driven tools and techniques. Besides this, the participants will also be given exposure to field work and consulting the library resources for research purposes.

Eligibility/Selection Criteria for the Course

Registered M Phil./PhD/PDF research scholars of any recognised Indian University/ Research Institute from any branch of Social Sciences are eligible for this course. The course will be of multidisciplinary nature, and participants from different areas of social sciences disciplines can apply for the same. This course will have a maximum of 30 participants.

For Further Details, contact Prof. Vishal Sood, Course Director, School of Education, Central University of Himachal Pradesh, Dhauladhar Campus–I, Near HPCA Stadium, Dharamshala, Kangra, Himachal Pradesh-176215, Mobile No: 09418204500 and 08219574287, E-mail: *drvishalsood13@gmail.com.* For updates, log on to*: www.cuhimachal.ac.in*

Seminar on Emerging Fields in Education Research

A two-day Seminar on 'Emerging Fields in Education Research: Shaping Future Directions with NEP-2020' is being organised by the MIER College of Education, Jammu from November 14-15, 2025. The event is sponsored by the Indian Council of Social Science Research, New Delhi. The event aims to advance academic and policy-oriented discussions on critical areas of educational transformation outlined in the National Education Policy–2020. It will provide a platform to engage in dialogues and

workshops focused on understanding the challenges and opportunities of NEP-2020's implementation across diverse educational contexts. The key themes of the Event are:

Digital Education and Learning Technologies

- Blended Learning: Combining Classroom and Online Approaches to Improve Engagement.
- AI in Education: Using AI for Personalised Learning and Smarter Assessment.
- Digital Literacy: Building Essential Digital Skills for Students and Educators.

Skill-Based and Experiential Learning

- Vocational Training: Aligning Education with Industry Needs through Partnerships.
- Project-based Learning: Developing Critical Thinking through Hands-on Experiences.
- Lifelong Learning: Creating Opportunities for Continuous Skill Development.

Social-Emotional Learning and Mental Health

- SEL in Curriculum: Building Resilience and Interpersonal Skills.
- Mental Health Support: Addressing Student Wellbeing Challenges.
- Positive Learning Environments: Creating Inclusive and Supportive Spaces.

Global Citizenship and Environmental Education

- Global Awareness: Understanding Cultural Diversity and Global Issues.
- Sustainability Education: Incorporating UN Sustainable Development Goals.
- Environmental Responsibility: Promoting Eco-friendly Practices and Climate Awareness.

Cyber Safety and Digital Citizenship

- Online Safety: Teaching Privacy Protection and Responsible Online Behaviour.
- Digital Citizenship: Promoting Ethical Engagement and Critical Thinking Online.
- Safety Frameworks: Implementing Effective Policies for Digital Learning Environments.

Ethics and Responsible Technology Use

- AI Ethics: Navigating Privacy, Bias, and Automated Decision-making.
- Human Connection: Balancing Technology with Meaningful Personal Interaction.
- Ethical Guidelines: Developing Frameworks for Responsible Technology Use in Education.

For further details, contact Convener, Dr. Nishta Rana, MIER College of Education, B.C. Road, Jammu-180001, Mobile No: 09086033747/ 09419186287, E-mail: *principal@miercollege.in*. For updates, log on to: *www.miercollege.in/events/*

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Edited Book
on
Realising United Nations Sustainable Development Goals through Higher Education Institutions
By
Dr (Mrs) Pankaj Mittal
and
Dr Sistla Rama Devi Pani

The Association of Indian Universities has come out with a new publication on the vital theme '***Realising United Nations Sustainable Development Goals through Higher Education Institutions'*** this year 2024. AIU undertook several initiatives, like organising consultancies, debates, discussions, and Vice Chancellors Meets with experts from the United Nations, the Government, NITI Aayog, and Industries to deliberate extensively on the various issues regarding SDGs. AIU also gathered articles from experts and erudite scholars on the implementation of the SDGs. Each article in the Book is unique and deals with a wide range of issues involved with SDGs in the words and opinions of the authors. This Book covers a range of articles on the status of implementation and the role that Higher Education Institutions can play in the speedy implementation of all 17 Sustainable Development Goals (SDGs). It certainly acts as a reference guide for those who are stuck in the process of achieving this extremely inevitable Agenda 2030. It provides a roadmap for the government and the universities to act timely to achieve the 2030 agenda for sustainable development.

For further details contact the Editors on Email Id : ramapani.universitynews@gmail.com

THESES OF THE MONTH

SCIENCE & TECHNOLOGY
A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of Aug-Sep, 2025)

AGRICULTURAL & VETERINARY SCIENCES

Agronomy

1. Dodiya, Vijaykumar Chandubhai. **Effect of saline irrigation water levels and different growing media on germination and seedling quality of hybrid coconut cv DXT (Mahuva) *Cocos nucifera* L**. (Dr. A V Rajani), Department of Soil Science and Agricultural Chemistry, Junagadh Agricultural University, Junagadh.
2. Jadav, Niteshbhai Karamchandbhai. **Effect of different organics on growth, yield and quality of elephant foot yam**. (Dr. V K Parmar), Department of Agronomy, Navsari Agricultural University, Navsari.
3. Virani, Vivek Bharatbhai. **Simulation of sugarcane (*Saccharum officinarum* L) growth and yield using APSIM and Canegro models and study of surface energy balance using remote sensing over Navsari Region of Gujarat**. (Dr. Neeraj Kumar), Department of Agronomy, Navsari Agricultural University, Navsari.

Forestry

1. Patari, Prasenjit. **Impact of large scale rubber plantation on non-human primate habitat**. (Prof. Sabyasachi Dasgupta), Department of Forestry and Biodiversity, Tripura University, Suryamaninagar.

Genetics & Plant Breeding

1. Ray, Purnima. **Variability and stability analysis in finger millet (*Eleusine Coracana* (L) *Gaertn)***. (Dr. H E Patil), Department of Genetics and Plant Breeding, Navsari Agricultural University, Navsari.

Horticulture

1. Okram B Devi. **Effect of organic amendments, growth regulators and micro-nutrients on growth, yield and quality of Papaya [*Carica papaya*]**. (Dr. Y S Singh), Department of Horticulture, North Eastern Hill University, Shillong.
2. Sankhla, Pintukumar Mohanji. **Effect of transplanting time and varieties on growth, yield and quality of Knolkhol**. (Dr. V K Parmar), Department of Horticulture, Navsari Agricultural University, Navsari.

Plant Pathology

1. Shekhada, Hirenkumar Arvindbhai. **Molecular characterization and variability of *Alternaria burnsii* (Uppal, Patel & Kamat) causing blight of cumin and its management**. (Dr. D S Kelaiya), Department of Plant Pathology, Junagadh Agricultural University, Junagadh.

BIOLOGICAL SCIENCES

Biochemistry

1. Aadil, Manzoor Baba. **Role of histone acetylation in esophageal squamous cell carcinoma neovascularization**. (Prof. Nazir Ahmad Dar), Department of Biochemistry, University of Kashmir, Srinagar.
2. Shekhawat, Bhanu Pratap Singh. **Protective effect of selenium on hexachlorobenzene induced hypothyroidism in female rats**. (Prof. Pushpa Robin), Department of Biochemistry, M S University of Baroda, Vadodara.

Biotechnology

1. Tantary, Wajahat Waseem. **Dissecting the role of RNA binding protein Vgl 1 in genome stability**. (Dr. Mohd Altaf Bhat), Department of Biotechnology, University of Kashmir, Srinagar.

Botany

1. Vanzara, Akashkumar Govindbhai. **Systematic studies of fabaceae in Central Gujarat**. (Dr. P S Nagar), Department of Botany, M S University of Baroda, Vadodara.

Food Science & Nutrition

1. Patel, Meghana Bakulbhai. **Impact of Fructooligosaccharides (FOS) supplementation on gut health, glycaemic status and inflammatory markers of the Gestational Diabetes Mellitus (GDM) women visiting tertiary care hospital located in rural Vadodara**. (Prof. Mini Sheth), Faculty of Family and Community Sciences, M S University of Baroda, Vadodara.

Life Science

1. Goswami, Sanghamitra. **Antimicrobial and anti-biofilm efficacy of phytochemical through biocompatible hydrogel and nanogel formulations**. (Dr. Surajit Bhattacharjee), Department of Molecular Biology and Bioinformatics, Tripura University, Suryamaninagar.

Zoology

1. Akhter, Gulshan. **Molecular characterization of Schizothorax esocinus and Schizothorax curvifrons (*Cypriniformes: Cyprinidae*) with mitochondrial protein coding genes for phylogenetic consideration of Kashmir water bodies**. (Prof. Imtiaz Ahmed Khan), Department of Zoology, University of Kashmir, Srinagar.
2. Bhujel, Prerana. **Studies on insecticide susceptibility and biological fitness cost(s) in *Culex quinquefasciatus* say after selection in synthetic pyrethroid(s) through successive generations**. (Prof. Diraj Saha), Department of Zoology, University of North Bengal, Darjeeling.
3. Nongkynrih, Susan Jones. **Effects of urea on the development of tadpoles of some anurans prevalent in Meghalaya**. (Prof. R N K Hooroo and Dr S R Hajong), Department of Zoology, North Eastern Hill University, Shillong.
4. Roy, Sudipta Kumar. **Identification and molecular characterization of dengue virus serotypes prevalent in the Northern part of West Bengal**. (Prof. Soumen Bhattacharjee and Prof. Bidyut Krishna Goswami), Department of Zoology, University of North Bengal, Darjeeling.
5. Sarkar, Sourav. **Assessment of anti-inflammatory and anti-arthritic properties of *Equisetum diffusum* D Don, a pteridophyte species of the sub-Himalayan Region of West Bengal**. (Prof. Soumen Bhattacharjee), Department of Zoology, University of North Bengal, Darjeeling.
6. Warjri, Calvin Donkupar. **Studies on effects of heavy metals on metallothionein gene expression in common carp, *Cyprinus carpio* L**. (Dr. Srimoyee Ghosh), Department of Zoology, North Eastern Hill University, Shillong.
7. Zakiya, Archo. **Documentation, validation and nutritional Profile of food fish species habitating in Suru River of Kargil**. (Prof. Imtiaz Ahmed Khan), Department of Zoology, University of Kashmir, Srinagar.

EARTH SYSTEM SCIENCES

Environmental Science

1. Amin, Insha. **Characterization of heavy metal resistant fungi for bioremediation of agricultural soils**. (Dr. Ruqeya Nazir and Dr. Mushtaq Ahmad Rather), Department of Environmental Science, University of Kashmir, Srinagar.
2. Moirangthem, Bidyaswori Devi. **Cloning of Chitinase gene in bacteria and production of insecticidal spores**. (Prof. D Paul and Prof. A Bhattacharjee), Department of Environmental Studies, North Eastern Hill University, Shillong.
3. Salahe, Diamond. **Microbial contamination and heavy metal load of administered traditional medicines among the Jaintias, Meghalaya**. (Prof. D Paul), Department of Environmental Studies, North Eastern Hill University, Shillong.
4. Singha, Haorangbam Arundeep. **Dynamics of human-wild animal interaction in and around the Nongkhyllem Reserved Forest and Nongkhyllem Wildlife Sanctuary, Meghalaya**. (Prof. M S Bisht), Department of Environmental Studies, North Eastern Hill University, Shillong.
5. Zaffar, Riasa. **Characterization of biofilms and their role in bioremediation of eutrophicated waters**. (Dr. Ruqeya Nazir and Dr. Mushtaq Ahmad Rather), Department of Environmental Science, University of Kashmir, Srinagar.

ENGINEERING SCIENCES

Architecture

1. Manisha, Keerti. **Mitigating the impacts of tourism on the environment through the principles of green economy: A case of Shimla, Himachal Pradesh**. (Dr. Inderpal Singh), Department of Architecture, National Institute of Technology, Hamirpur.

Chemical Engineering

1. Sarin, Deepika. **Use of multiattribute methods for characterization and stability assessment of recombinant monoclonal antibodies**. (Prof. Anurag S Rathore), Department of Chemical Engineering, Indian Institute of Technology Delhi, New Delhi.

Civil Engineering

1. Manoj, K G. **Characterization of permanent deformation and replicate stochasticity in asphalt concrete materials using bayesian inference approach**. (Prof. Vasant A Matsagar), Department of Civil Engineering, Indian Institute of Technology Delhi, New Delhi.

Computer Science & Engineering

1. Anand, Kunal. **Empirical analysis of meta-heuristic based feature selection approaches for software defect prediction**. (Dr. Ajay Kumar Jena), KIIT School of Computer Engineering, Kalinga Institute of Industrial Technology, Bhubaneswar.
2. Bella, H Kanaka Durgh. **Intrusion detection in cloud computing using optimization algorithms and deep learning approaches**. (Dr. S Vasundra), Department of Computer Science & Engineering, Jawaharlal Nehru Technological University Anantapur, Ananthapuramu.
3. Indrason, Ngangbam. **Design of security system for SDN-based lot network**. (Prof. Goutam Saha),

Department of Information Technology, North Eastern Hill University, Shillong.

4. Nampally, Vijay Kumar. **Design and performance analysis of load balancing algorithms in cloud computing environment**. (Dr. Satarupa Mohanty), KIIT School of Computer Engineering, Kalinga Institute of Industrial Technology, Bhubaneswar.

Electrical & Electronics Engineering

1. Aashish, T R. **On-chip instrumentation techniques**. (Prof. Shouri Chatterjee), Department of Electrical Engineering, Indian Institute of Technology Delhi, New Delhi.
2. Devakumar, A. **Resilient distributed secondary controls for DC and AC microgrids against cyber-attacks**. (Prof. Sukumar Mishra), Department of Electrical Engineering, Indian Institute of Technology Delhi, New Delhi.
3. Gannamaneni, Satish Kumar. **Performance enhancement of cooperative communication in wireless networks using optimization methods**. (Dr. Jibendu Sekhar Roy), KIIT School of Electronics Engineering, Kalinga Institute of Industrial Technology, Bhubaneswar.
4. Rasool, Umhara. **Design of a meta-material inspired circularly polarized antenna for biomedical applications**. (Dr. Javid Ahmad Sheikh), Department of Electronics & Instrumentation Technology, University of Kashmir, Srinagar.
5. Sunil Kumar, M. **Performance improvement of direct Torque control of Brushless DC motor drive**. (Dr. Gopisetti Satheesh and Dr. P Sujatha), Department of Electrical & Electronics Engineering, Jawaharlal Nehru Technological University Anantapur, Ananthapuramu.
6. Tripathy, Surya Narayan. **BLDC motor design using optimization algorithms and machine learning techniques**. (Dr. Shubhasri Kundu and Dr. Arjyadhara Pradhan), KIIT School of Electronics Engineering, Kalinga Institute of Industrial Technology, Bhubaneswar.
7. Yadav, Manne Praful. **Fault ride through capability enhancement of grid connected wind farm system employing intelligent controllers based DVR**. (Dr. P Sujatha), Department of Electrical & Engineering, Jawaharlal Nehru Technological University Anantapur, Ananthapuramu.

Energy Studies

1. Makavana, Jagubhai Masaribhai. **Design and development of water gas shift reactor integrated with biomass gasifier for hydrogen enriched fuel production**. (Dr. P M Chauhan), Department of Renewable Energy Engineering, Junagadh Agricultural University, Junagadh.

Information & Communication Engineering

1. Kharjana, Mebanjop. **Enhanced key management for information-centric networking**. (Prof. Goutam Saha and Dr Subhas Chandra Sahana), Department of Informational Technology, North Eastern Hill University, Shillong.
2. Mitri, Aiom Minnette. **Implementation and analysis of different automatic text summarization schemes in Khasi language**. (Prof. Goutam Saha, Dr A K Maji and Dr Saralin A Lyngdoh), Department of Informational Technology, North Eastern Hill University, Shillong.

Mechanical Engineering

1. Shah, Niyati Moulinkumar. **Heat and mass transfer study of an internally cooled contacting device for liquid desiccant based air conditioning system**. (Dr. Jignesh Rajnikant Mehta), Department of Mechanical Engineering, M S University of Baroda, Vadodara.

Textile & Fiber Engineering

1. Shriwastawa, Ashok Kumar. **Design and development of automotive seat cover using 3D woven structures**. (Dr. B K Behera and Prof. Javed N Sheikh), Department of Textile & Technology Engineering, Indian Institute of Technology Delhi, New Delhi.

MATHEMATICAL SCIENCES

Mathematics

1. Sheikh, Sajad Ahmad. **Probabilistic approach to distribution of zeros and external problems of random polynomials**. (Dr. Mohammad Ibrahim Mir), Department of Mathematics, University of Kashmir, Srinagar.

Statistics

1. Biswa, Alona. **A study on regression models with multi-collinear explanatory variables: A generalized inverse regression approach**. (Dr. R Singh and Prof. T K Chakrabarty), Department of Statistics, North Eastern Hill University, Shillong.

MEDICAL SCIENCES

Ayurveda

1. Khobragade, Vaishali Mahadeorao. **In vivo study of cardio-protective activity of Tamra Bhasma in relation to quantity of Putas**. (Dr. S S Savrikar), Faculty of Ayurveda, Maharashtra University of Health Sciences, Nashik.

Cardiology

1. Vaidya, Vanya. **Establishment of variations in Indian cardiomyopathy patients using functional**

genomics. Department of Cardiology, Postgraduate Institute of Medical Education and Research, Chandigarh.

Medicine

1. Khullar, Aastha. **Study the GM-CSF producing CD8 T-Lymphocytes in rheumatoid arthritis and the effect of DMARD methotrexate on this subset**. Department of Internal Medicine, Postgraduate Institute of Medical Education and Research, Chandigarh.

Physiology

1. Shinde, Chandrashekhar Lalaji. **Study of zinc, cadmium levels and zinc/cadmium ratio in seminal plasma and its relationship with semen quality**. (Dr. U S Zingade), Faculty of Medicine, Maharashtra University of Health Sciences, Nashik.

PHYSICAL SCIENCES

Chemistry

1. Chamlagai, Dipak. **Photophysical studies on nitrogen based aromatic heterocycles: Flourescence modulation and tuning in different media**. (Prof. S Mitra), Department of Chemistry, North Eastern Hill University, Shillong.
2. Das, Tapas Kumar. **Development of new methodologies for C-C and C-heteroatom bond formation and its application towards the synthesis of functionalized 4-quinolones**. (Prof. Sajal Das and Dr. Mrinal Kanti Kundu), Department of Chemistry, University of North Bengal, Darjeeling.
3. Kyndiah, Lenida. **Formation of carbon-carbon and carbon-heteroatom bonds using graphene and metal based catalysts**. (Dr. A K Pal), Department of Chemistry, North Eastern Hill University, Shillong.
4. Neogi, Sourav Basu. **Physiochemical investigation of some significant compounds prevalent in different liquid environments with the manifestation of diverse molecular interactions**. (Prof. M N Roy), Department of Chemistry, University of North Bengal, Darjeeling.
5. Phanrang, Pynskhemborlang T. **Interaction of drug molecules with biocompatible hosts: A physico-chemical study based on experimental and computational approach**. (Prof. S Mitra and Prof. A K Chandra), Department of Chemistry, North Eastern Hill University, Shillong.
6. Reddy, G Sreenivasulu. **Design, synthesis, evaluation and molecular docking studies of fused pyrazolo pyridines/pyrimidines and imidazo pyridine derivatives as anticancer agents**. (Dr. K B Chandra Sekhar), Department of Chemistry, Jawaharlal Nehru Technological University Anantapur, Ananthapuramu.
7. Singh, Bhuvnesh. **Stereoselective synthesis of axially Chiral (Hetero) biaryls bridged isochromans and amino indanones**. (Prof. Ravi P Singh), Department of Chemistry, Indian Institute of Technology Delhi, New Delhi.
8. Thakkar, Harshil Kirtikumar. **Synthesis of some luminescent nanosensors for molecular recognition and metal ion sensing applications**. (Dr. Sonal Thakore), Department of Chemistry, M S University of Baroda, Vadodara.

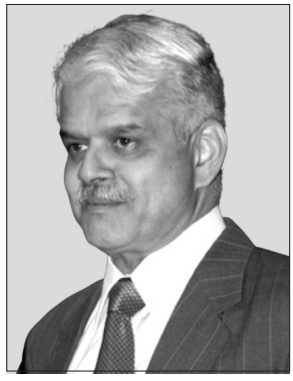
Nanotechnology

1. Limbu, Sanjeeb. **Development of lanthanide based nanophosphors for white light-emitting diode**. (Dr. L Robindro Singh), Department of Nanotechnology, North Eastern Hill University, Shillong.

Physics

1. Chettri, Bhanu. **Effect of alkali metals decoration in hybrid nanocomposites of carbon and boron nitride towards hydrogen storage: A theoretical study**. (Prof. P K Patra and Dr. D P Rai), Department of Physics, North Eastern Hill University, Shillong.
2. Dash, Prafulla Kumar. **Design & development of divalent doped [1-x) $BaTiO_3$-(x) $BaZrO_3$] ferroelectric nanoceramics for microwave applications**. (Dr. S K S Parashar), KIIT School of Applied Sciences, Kalinga Institute of Industrial Technology, Bhubaneswar.
3. Gaurav Kumar. **Investigation of flux pinning properties of YBCO based nanocomposites**. (Prof. Neeraj Khare), Department of Physics, Indian Institute of Technology Delhi, New Delhi.
4. Nair, Heera T. **Hydrogen storage in functionalised carbon systems: A DFT study**. (Prof. Prafulla Kumar Jha), Department of Physics, M S University of Baroda, Vadodara.
5. Shah, Aunggat. **Preparation, characterization and applications of some new carbon-metal sulfide nanocomposites**. (Dr. Mrityunjoy Mahato), Department of Physics, North Eastern Hill University, Shillong.
6. Thapa, Bhawna. **Study of optoelectronic properties of Ni and Mn – doped cadmium dichalcogenides**. (Prof. P K Patra and Prof. Amit Shankar), Department of Physics, North Eastern Hill University, Shillong.
7. Tyagi, Subodh. **Investigation of structural and optical properties of CdTe, ZnTe and HgCdTe grown using MBE for photodetector applications**. (Prof. Rajendra Singh and Prof. Shiv Kumar), Department of Physics, Indian Institute of Technology Delhi, New Delhi. ❑

Dr. Prof. K Mohandas, Former President, AIU, Passes Away



Dr. Prof. K Mohandas (27th July, 1944 to 9th October, 2025), A renowned Surgeon, Anaesthetist and Former Director of Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, Kerala; and former President, Association of Indian Universities, passed away on 9th October at Bengaluru at the age of 81.

As the President of the Association of Indian Universities during the year 2004, he gave excellent leadership, contributing immensely in terms of policy discourse and other administrative and academic matters.

Dr. Prof. K Mohandas held various prestigious positions, like the founder Vice Chancellor of Kerala University of Health and Allied Sciences; the Chairperson of Association of Commonwealth Universities, the oldest international association of universities in the world, from 2005 to 2007. Recognising his professional, academic and research contributions to Anaesthesiology, and his role in raising the profile of the speciality, the Royal College of Anaesthetists of the United Kingdom conferred the title of Fellow of the Royal College of Anaesthetists on him. Thus, he was the first anaesthesiologist in the world to head a university institution and the first Indian to receive the honorary fellowship of the Royal College of Anaesthetists, UK.

Dr. Prof. K Mohandas has been internationally recognised for his exceptional clinical skills, leadership qualities, and passion for innovation and technology development. A postgraduate in Anaesthesia from the Christian Medical College, Vellore, and an MD from the Medical College, Mysore, Dr Mohandas started his working career in 1975 as a faculty member at Calicut Medical College, and further, he joined as an Assistant Professor of Anesthesiology at the Sree Chitra Tirunal (SCT) Medical Centre (the precursor of the Sree Chitra Tirunal Institute for Medical Sciences and Technology), Thiruvananthapuram, in 1976. In 1993, he took over as Professor and Head of the Department of Anaesthesia, and Dean of the Institute. He took over as the Institute's Director in 1994 and served it till 2009. During his tenure as Director, new initiatives like the Comprehensive Centre for Epilepsy, the Comprehensive Centre for Movement Disorders, and Public Health Programs like MPH courses had been initiated. He was the Chief Anaesthetist when the first open heart surgery was performed at the SCT Centre in 1976.

He was not only a Health Professional but also an astute Scholar and a very noble human being. His demise is a great loss not only for the healthcare profession but also for the Higher Education System of the country.

AIU fraternity expresses profound grief at his demise and expresses heartfelt condolences to his family members.

Manjara Charitable Trust's

College of Education & Research,

SDV Campus, Sector-4, Airoli, Navi Mumbai-400708

CORRIGENDUM

This has a reference to the advertisement published on dated 30th June 2025 - 6th July 2025 Vol.63 . No.26 in University News A Weekly Journal of Higher Education on behalf of Manjara Charitable Trust's College of Education & Research, Airoli, Navi Mumbai for the recruitment to the posts of Asst. Professor in Education & Librarian from the Academic year 2025-26.

Please read the post of ***"Assistant Professor"*** in the subject of ***"Education"*** in Methods of Marathi, Hindi, English, Mathematics, History and Commerce.

All other terms and conditions and reservations will remain the same.

Sd/-
Dr.Savita. S Sable
Principal

ASSOCIATION OF INDIAN UNIVERSITIES

AIU House, 16 Comrade Indrajit Gupta Marg, New Delhi – 110002

NOTICE OF EXTENSION

(Tender for Selection of Courier Agency)

The last date for submission of quotations for selection of a Courier Agency for AIU, originally scheduled for 06.10.2025, is hereby **extended up to 20.10.2025 (03:00 PM).**

All other terms and conditions remain unchanged.

By Order of the Secretary General, AIU

Date: 06.10.2025
Place: New Delhi

Shree. Rishikesh Shikshan Prasarak Mandal, Navi Mumbai's

Shri. D. D. Vispute College of Pharmacy & Research Center,

Devad – Vichumbe, New Panvel, Dist. – Raigad, Pin.- 410 206.

CORRIGENDUM

This is with Reference to Advertisement Published in University News dated 15/09/2025 for the post of Professor, Associate Professor and Assistant Professor at Shri D. D. Vispute College of Pharmacy & Research Center, Devad-Vichumbe, New Panvel from the Academic year 2025-26.

In the said advertisement following paragraph is missing, it should be read as "Applications with full details should reach to the **CHAIRMAN, Shree. Rishikesh Shikshan Prasarak Mandal, Navi Mumbai's, Shri. D.D. Vispute College of Pharmacy & Research Center, Gut No. 104, Devad-Vichumbe, New Panvel, Navi Mumbai, Dist - Raigad 410 206** within 15 days from the date of publication of this advertisement. This is University approved advertisement."

Sd/-
CHAIRMAN

Dr.Rafiq Zakaria Campus II

Dr.Rafiq Zakaria College for Women

Navkhanda Palace, Jubilee Park, Chhatrapati Sambhaji Nagar, (Aurangabad), Maharashtra
NAAC Reaccredited B++
Minority Institution

A P P O I N T M E N T

Applications are invited for the following teaching posts on CHB (Clock Hour Basis) at Senior College Grant in Aid Section, for one academic year i.e 2025-2026. Eligible Candidates shall submit their application to the principal during office hours **within 10 days** of publication of this advertisement.

Sr.No	Particulars	Vacant Posts
Assistant Professor on Clock Hour Basis		
1	English	1
2	Hindi	1
3	Economics	3
4	Chemistry	3
5	Analytical Chemistry	1
6	Mathematics	1
7	Botany	2
8	Zoology	1
9	Computer Science	3

Eligibility: As per the UGC, Government of Maharashtra & University Norms and Rules of Appointments.
Note: In service candidates should apply through proper channel. No TA/DA will be paid to the candidates for attending the Interview.

Dr.Maqdoom Farooqui
Principal

SHRI SHARDA BHAVAN EDUCATION SOCIETY, NANDED

WANTED

Applications are invited from the eligible candidates for the posts of **Director** to be filled in Shri Sharda Bhavan Education Society's **Institute of Technology & Management, Nanded (Permanent Non-Grant).** Eligible Candidates should submit their application along with all necessary documents **within Fifteen Days** from the date of publication of the Advertisement by Registered Post only.

Sr. No.	Name of post (Designation)	No. of Posts	FT/PT	Reservation
01	**Director**	01	Full Time	Unreserved

Essential Educational Qualification & Experience: -

a. Ph. D Degree and First Class or equivalent at either Bachelor's or Master's level in the relevant branch
b. At least two successful Ph.D. guided as supervisor or co-supervisor and minimum 8 research publication in SCI journals/ UGC/AICTE approved list of journals
c. Minimum 15 years of experience in teaching / research/industry, out of which at least 3 years shall be at the post equivalent to that of Professor

Note:
1. This position shall be of contractual in nature for 5 years and can be extended for one more term depending upon the performance.
2. Performance assessment shall be caried out through a committee appointed by the affiliating university.
3. After completing the final term, the incumbent shall join back his/her parent organization in the previous designation from where he/she has proceeded with the designation as Professor/Senior Professor as the case may be.

Salary & Allowances: - Pay Scales as per the A.I.C.T.E. State Government & Swami Ramanand Teerth Marathwada University's rules from time to time.

Pay Scale: Level-14, Entry Pay 144200/- with the special allowance of Rs. 6750/- per month

Note: - 1. No T.A. /D.A. will be paid for attending the interview. **2.** Eligible candidates should submit their applications through proper channel. **3.** Self attested Xerox copies of Age proof, Degree certificates, Marks Memos, University Approval Letter/s, Experience Certificate/s character certificate, PhD notification copies of guided students etc. should be attached to the application. **4.** University approval letters claiming teaching experience **5.** Certificate of approval as a research guide from parent University with list of publication in National & International journal s. **6.** The qualification and service conditions as notified by PCI, AICTE & adopted by State Govt. shall be applicable for non-grant technical institutions. **7.** A power point presentation on the day of interview will be highly appreciable

Address for Correspondence: -
The Secretary, Shri Sharda Bhavan Education Society,
I.T.M. Building, V.I.P. Road, Nanded -431602, Maharashtra

President **Secretary**
Shri Sharda Bhavan Education Society, Nanded

GODAVARI MANAR CHARITABLE TRUST

WANTED

Applications are invited for the Post of Principal to be filled in **Shri Madhukarrao Bapurao Patil Khatgaonkar College, Shankarnagar Tq. Biloli Dist. Nanded.** Eligible candidates should submit their application along with all necessary documents within Fifteen Days from the date of publication of the advertisement by **Registered Post** only to the **President, Godavari Manar Charitable Trust's, Shri Madhukarrao Bapurao Patil Khatgaonkar College, Shankarnagar Tq. Biloli Dist. Nanded Pin. 431736. (M.S.)**

Sr. No.	Post	No. of Post	Full Time	Reservation
01	**PRINCIPAL**	One	Full Time	Unreserved

Permission as per NOC No. JDHENanded/NOC/2025/53 Date 28.08.2025.

Education Qualification:

1. A Master's Degree with at least 55% of marks (or an equivalent grade in a point scale whenever grading system is followed) by recognized University.
2. A Ph.D. Degree in concerned / allied / relevant discipline (s) in the institution concerned with evidence of published work and research guidance.
3. Professor / Associate Professor with a total experience of fifteen years of teaching / research in administration in University / College and other institution of higher education.
4. A minimum of 10 research publication in peer reviewed or UGC listed Journals.
5. A minimum of 110 research score as per Appendix II, Table 2 of UGC Regulation 2018.
6. Academic Eligibility and other Rules Regulation as per UGC Regulation 18 July 2018 and Govt. Resolution No. Misc-2018/C.R.56/1 8/UNI-1 Date 08 March 2019 & 10 May 2019.
7. The vacant post is being filled subject to the decision of Hon'ble High Court, Aurangabad Bench Petition NO. 12051/2015.

Tenure:- A College Principal shall be appointed for the period of Five year extendable for another term of Five year on the basis of performance based assessment, a committee appointed by the University constituted as per rules of UGC and Govt. of Maharashtra.

Salary & Allowances: -

Pay scale as per the UGC, State Government of Maharashtra & Swami Ramanand Teerth Marathwada University, Nanded from time to time.

Note:

1. Prescribed application form is available on (www.srtmun.ac.in) website.
2. No T. A. /D. A. will be paid for attending the interview.
3. Employed candidates shall apply through proper channel & shall submit No. Objection Certificate from the Employer.
4. All Attested Xerox copies of certificates and other relevant documents should be attached with the Application form.
5. The original certificates must be produced at the time of interview.
6. The vacant post is being under the decision of Hon'ble High Court writ petition No. 12051/2015.

President,
Godavari Manar Charitable Trust Shankarnagar

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