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Rabinder Henry and Rajan Welukar

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in Higher Education Institutions

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Research Integrity Risk Index as a Tool to Improve Quality of Research in Higher Education Institutions

Rabinder Henry* and Rajan Welukar**

Research Integrity Risk Index (RI²) is a composite index that has been developed by Lokman I. Meho of the American University of Beirut (AUB), Lebanon. It is intended to assess institutional research integrity and the associated risk rather than research productivity or prestige. The two measurable parameters considered through this study are journal paper retraction risk and delisted journal risk. The universities are listed and ranked according to the combination of these risk parameters. They are ranked from risk-free (white flag) to high risk (red flag). It is an individual work that does not include AUB in the analysis or ranking. It is not a critical report but rather a guide to distinguish journals based on international standards.

The Research Integrity Risk Index (RI²) uses a composite score based on two measurable indicators. The retraction risk is the measure of the number of retracted articles per thousand articles. This has been measured for a window of 2 years. The delisted journal risk measures the share of publications that have been published in journals that have been removed from Scopus or Web of Science. The one-year window for the delisted journals has been considered in the analysis. Each university's risk in both dimensions is normalised, averaged, and then converted into a score between zero and one. Institutions are ranked and categorised into five risk tiers. They are Low Risk, Normal, Watch List, High Risk, and Red Flag. The methodology focuses on systemic patterns rather than individual misconduct, aiming to flag institutional vulnerabilities in research integrity.

Strengths and Limitations of RI²

The main strength of the analysis is that it focuses on 'Research Integrity'. This silently stresses the need for the shift towards quality rather than quantity. It raises an ethical risk signal with respect to the quality of research. The index reflects the structural vulnerabilities in academic practices based on the retractions and publications in the delisted journals. Transparency is another important aspect of the index. Since it uses data from freely available and verifiable public data sources, it minimizes the risk of manipulation in the study. The data has been obtained from Scopus, Web of Science and Retraction Watch. The RI² analysis and the index has been consistently accepted and recognised in recent times. Scientific and Academic observers, publishers including Nature, Times Higher Education Leadership, Springer have started referring to the integrity risk index as valuable

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complement to the traditional research and academic ranking metrics. This has enabled such ranking system to expose the statistical quicksand or data manipulation beneath superficial excellence of academic and research institutions across the world [3].

The main criticism of the RI² index has been that it has based on over simplified foundations. It is based on the argument that institutions that practise transparency and adhere to ethical practices of withdrawing submitted paper on the basis of ethical and integrity should not be penalized. The other major argument against the index has been that is a personal work which has not been endorsed by accrediting agencies or ranking organizations or regulating academic agencies.

A Useful Tool

The RI² index is a useful tool to understand the nature of integrity and ethics in academic research, irrespective of the advantages and limitations inherent in it. The most important factor to be considered in its favour is that it is focused on shifting the research evaluations towards ethics and integrity. This is an essential conceptual advancement for academic and research communities across the world. It has slowly emerged as an early warning system to funders, publishers, universities, and academic accountability watchdogs. Though it is research work of a particular individual, the study is purely based on the publicly available data, thereby providing transparency.

Summary of the June 2025 Indices

The universities are tiered based on the percentile. In June 2025, the top 1500 universities and research institutions were ranked based on retraction rate and delisted journal rate. 151 institutions were placed in the red flag category. India had the largest number of red-flagged institutions (32), followed by Saudi Arabia (21). The key risk metrics showed that some institutions had retraction rates as high as 2 to 4 per 1000 papers, while other institutions had 15 % to 20 % of their publications in delisted journals. The most startling takeaway from the indices is that not even one institution or university from India had a percentile below 50. This means that none of the Indian Higher Education Institutions (HEI's) made it to the low-risk group. Bulk of the Red Flagged institutions are privately funded Universities or colleges from India^[3].

Observations

RI² can be considered as a new evaluation and diagnostic tool for analysing ethics, transparency and systemic integrity in universities, colleges and research institutes. It can be viewed as an instrument that challenges institutions to focus on responsible and ethical scholarship rather than numerical productivity. It is a mechanism that highlights vulnerabilities in institutional practices, and it fosters accountability. Irrespective of the criticism, the RI² has evolved as a useful tool in formal academic governance. The 2025 report highlights systemic issues in research practices in 32 Indian HEIs, which is the highest in the world.

The RI² may be utilised as an early warning system that requires universities in India to strengthen their research ethics and practices. This would ensure academic excellence based on integrity. Higher retraction rate and reliance on delisted journals indicate gaps in institutional research governance, inadequate mentorship, lack of robust publication ethics framework and lack of personal integrity.

These issues can be addressed through policy responses through the Ministry of Education, the administration agencies, including UGC, AICTE and accreditation agencies like NAAC & NBA. The policies should include institutional governance, capacity building, recalibration of evaluation systems and incorporation of research integrity indicators into national oversight frameworks. These should be benchmarked against international best practices to enable global alignment.

Research Integrity (RI) should be made the core determinant of academic credibility and sustainability when the country is marching towards *Atmanirbhar Bharat* and *Viksit Bharat* by 2047 goals^[4,5]. Self-reliant and developed India by 2047 is possible only based on the quality of Research & Development in Indian Universities and research institutes. A five-point framework for strengthening research integrity may be considered. The most important aspect of this structure is to establish the Research Integrity Cell (RIC) in every HEI in India. Mandatory training and certification in research ethics should be made compulsory for all involved in academic research. Thirdly, it is important to reform research incentive schemes in university administration systems. Fourthly, the establishment of a national Research Integrity Index and Audit system would enable


quality research throughput from India. And lastly, adopting internationally recognised practices such as Committee on Publication Ethics (COPE) guidelines, open data repositories, transparent policies, and mandatory Open Researcher and Contributor ID (ORCID) integration will rebuild credibility for Indian research globally.

Conclusion

Research integrity is the foundation for building an *Atmanirbhar Bharat* (A Self-reliant India) and towards achieving the vision of a *Viksit Bharat* by 2047 (Developed India by 2047) goals. Quality of research based on ethics ensures that knowledge creation is reliable, transparent, and globally respected. Lack of integrity may allow even the advanced innovation of the risk being discredited, thereby weakening India's self-reliance and competitiveness globally in critical domains like health, defense, energy, AI, Quantum and digital technologies. A culture of honesty

and accountability in research empowers Indian institutions to generate indigenous solutions rooted in originality rather than imitation. It also strengthens public trust, international collaborations, and policy-making, thereby amplifying India's global standing. By embedding research integrity into education, governance, and industry, India can nurture a robust ecosystem of innovation that drives sustainable growth and fulfil the nation's aspirations for 2047.

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AI Integration and Ethical Implications in Higher Education: Opportunities, Challenges, and the Path Ahead

J Madegowda*

Artificial Intelligence (AI) has emerged as a transformative force across several sectors, and Higher Education (HE) is no exception. The increasing deployment of AI tools in academic environments has started redefining how Higher Education Institutions (HEIs) teach, assess, support, and interact with students (Abdurohman, 2024). The AI integration in HE has the potential to change learning and teaching practices (Ojha, 2024 and Nguyen. et al., 2024).

While this technological revolution has opened up unprecedented opportunities for educational innovation, it has also raised complex ethical questions that necessitate careful consideration and strategic planning. The complexity of AI integration extends beyond mere technological adoption to encompass broader considerations of educational equity, institutional readiness, and long-term societal implications. It posits that AI can significantly enhance educational outcomes and administrative efficiency of HEIs. However, successful integration requires addressing issues such as infrastructure limitations, ethical concerns, strategic frameworks, etc (Patel & Ragolane, 2024).

The Rise of AI in Education

In recent years, AI has rapidly integrated into HE, transforming how knowledge is delivered, assessed, and managed. From generative AI tools like ChatGPT, Bard, and Claude to adaptive learning platforms, AI is no longer a distant future concept but an active part of the academic landscape (Education Intelligence Unit, 2023). Globally, HEIs are adopting AI-driven solutions such as automated grading systems, predictive analytics for student performance, plagiarism detection tools, and AI chatbots for administrative support (Zawacki-Richter, et al., 2019).

The COVID-19 pandemic further accelerated the digital transformation of education, acting as a catalyst for the integration of AI-powered tools into mainstream teaching and learning processes

(UNESCO, 2021). Today, faculty members and students are engaged with AI both formally and informally—whether through institutional platforms or personal tools—raising questions about the future roles of academics, learning methodologies, evaluation standards, etc.

The integration of AI in HE is not merely a technological advancement, but a paradigm shift with profound pedagogical, ethical, and institutional implications. While AI tools enhance efficiency, personalisation, and engagement, they also pose certain challenges related to academic integrity, authorship, and the authenticity of student work (Luckin, et al., 2019). On the one hand, faculty members are grappling with evolving responsibilities, and students, on the other, are confronting blurred boundaries between ethical and unethical use of AI-generated content (Susnjak & McIntosh, 2024).

Opportunities and Ethical Dilemmas

AI in HE brings forth dual aspects: (i) it offers personalised learning paths, instant feedback, enhanced accessibility, and predictive interventions for at-risk students (Holmes, et al., 2019), and (ii) it introduces ethical dilemmas such as AI-assisted cheating and plagiarism, data privacy concerns, algorithmic bias in assessments, the erosion of human interaction, and academic judgment.

The discourse surrounding AI in education has evolved from speculative discussions to practical implementation strategies, with academics, policymakers, and students all playing crucial roles in shaping this transformation. This study explores the multifaceted landscape of AI in HE, exploring both the transformative potential and the significant challenges that must be navigated to ensure responsible and effective implementation.

Literature Review

The literature review serves as a foundation for understanding the evolution, current applications, and ethical complexities of AI in HE. As HEIs rapidly adopt AI tools to enhance teaching, learning, and administrative efficiency, it is necessary to examine existing scholarly work to identify prevailing trends, opportunities, and challenges. Against this context,

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this section critically explores how AI has developed historically in educational contexts, its present-day applications in HEIs, and the ethical issues that accompany its integration, such as academic dishonesty, data privacy, algorithmic bias, and the shifting roles of academics. Furthermore, the review enables the identification of gaps in the existing literature. By synthesising relevant studies and global insights, this review, presented thematically, provides the necessary background to position the present study within the broader academic discourse.

Historical Development of AI in Education

The conceptual roots of AI in education date back to the 1960s and 1970s, with the emergence of early Intelligent Tutoring Systems (ITS) such as SCHOLAR and GUIDON, which attempted to simulate a teacher's role in one-on-one instruction (Luckin, et al., 2019). These early systems/developments laid the foundation for today's more sophisticated AI applications by leveraging rule-based learning and natural language processing. With further developments through the 1990s and early 2000s, AI tools became increasingly adaptive and scalable, facilitating broader experimentation in online and blended learning environments (Holmes, et al., 2019). The growth of big data, cloud computing, and machine learning algorithms in the 2010s further enabled the mainstreaming of AI in education, specifically in HEIs seeking personalised, data-driven instruction and administrative efficiency (Zawacki-Richter, et al., 2019). The development of generative AI systems such as ChatGPT, Bard, and other large language models in recent years has accelerated the visibility and accessibility of AI, enabling both students and academicians to engage directly with these tools across diverse academic contexts (Susnjak & McIntosh, 2024).

Current Applications of AI in Higher Education

AI tools in HE currently support a range of functions, such as teaching, assessment, student advising, and institutional operations. One of the important and promising applications of AI in HE lies in its capacity to provide personalised learning experiences that adapt to individual student needs, preferences, and learning styles (Abdurohman, 2024). There are many benefits attributable to the use of AI, including improvement in learning in a personalised way, making it more engaging and interactive, reducing administrative load, and providing timely feedback and support (Ojha,

2024). This personalisation extends beyond simple content delivery to encompass sophisticated adaptive learning mechanisms that respond to student behaviour in real-time. By enabling adaptive learning environments, AI technologies offer personalised and student-centric experiences (Solomon & Renuka, 2025).

The implementation of AI-powered Learning Management Systems (LMS) has shown significant potential for improving educational quality and student success. The integration of AI and LMS is revolutionising HE, providing unprecedented opportunities for personalised learning, adaptive assessments, and data-driven decision-making (Alotaibi & Alshehri, 2023). As conversational agents, chatbots are being adopted to address challenges in e-learning environments, including low student engagement and a lack of personalised support (Imane El Mourabit, et al., 2025; Oluwaseyi & Victoria, 2024 and Rozek, 2024). AI-driven platforms analyse student performance and tailor instructional content accordingly. Adaptive learning systems such as Carnegie Learning or Coursera's Skill Graph leverage real-time analytics to guide learners along individualised learning paths (Education Intelligence Unit, 2023). The quantitative analysis revealed a high prevalence of ChatGPT use for academic and personal purposes, with students identifying its 24/7 accessibility as a major advantage, along with the time-saving benefits it offers (Blahopoulou & Ortiz-Bonnin, 2025).

Artificial intelligence is also being utilised in automated grading and feedback systems, particularly in large-scale courses or Massive Open Online Courses (MOOCs), where manual grading may not be feasible. Tools that assess multiple-choice responses, essays, or coding assignments provide immediate feedback and reduce the workload for instructors (Zawacki-Richter, et al., 2019). AI technologies are revolutionising assessment methodologies in HE, offering more sophisticated, fair, and comprehensive evaluation approaches. A study identifies three distinct approaches to AI integration in assessment: AI-inclusive assessment design, case study-based resistance strategies, and hybrid examination models (Abbasnejad, et al., 2025). These innovative assessment approaches denote a paradigm shift from traditional evaluation methods toward more nuanced and contextually aware assessment strategies.

The potential for AI to enhance assessment practices extends to automated grading systems,

plagiarism detection, and competency-based evaluation frameworks. The technology can revolutionise personalised learning, intelligent tutoring, natural language processing, and gamification (Jianzheng & Xuwei, 2023). These technological capabilities enable more frequent, detailed, and constructive feedback that can significantly improve learning outcomes.

AI integration has proved effective even in streamlining administrative processes and improving institutional operational efficiency. However, improved administrative efficiency, personalised learning, and data-driven decision-making are often impeded by challenges like inadequate infrastructure, socio-economic disparities, and ethical issues related to data privacy and algorithmic bias (Patel & Ragolane, 2024). These technologies enable educators to focus on strategic and creative tasks while improving the efficiency and accessibility of education (Abdurohman, 2024 and Alotaibi & Alshehri, 2023). By automating routine administrative tasks, AI systems free up valuable human resources that can be better utilised for direct student support, curriculum development, and innovative pedagogical approaches. In administration, AI chatbots are increasingly deployed to answer routine student queries, manage class enrolments, and send reminders, thereby enhancing institutional responsiveness (UNESCO, 2021). These applications are improving efficiency, enabling scalability, and creating new pedagogical possibilities. However, their integration often occurs without sufficient dialogue around pedagogical alignment and ethical safeguards (Luckin, et al., 2019).

Ethical Concerns Associated with AI Use in Education

The integration of AI in HE raises significant ethical concerns that must be addressed appropriately to ensure its responsible implementation. Data privacy, ethical concerns, and the digital divide are among the most pressing issues (Abdurohman, 2024). These concerns encompass multiple dimensions, including data protection, algorithmic transparency, and the potential for discriminatory practices (Mihmas & Rashed, 2024).

Although the benefits of AI integration are substantial, they are accompanied by complex ethical issues. A major concern is about academic dishonesty, particularly with generative AI tools that can provide essays, prepare assignments, or answer examination questions. These tools challenge traditional notions of authorship and raise questions

about how to assess genuine student learning (Susnjak & McIntosh, 2024). Data privacy and surveillance also emerge as central ethical concerns. Many AI systems depend on large-scale student data to function effectively, including behavioural tracking, biometric identifiers, and keystroke analytics. If not managed properly, these data practices may infringe upon student privacy and violate institutional data protection policies (UNESCO, 2021). Another concern is algorithmic bias, where AI systems may reinforce pre-existing inequalities. For instance, predictive analytics used for student retention or performance evaluation may unfairly disadvantage certain demographic groups if the underlying data is biased (Holmes, et al., 2019). Furthermore, faculty members and staff are apprehensive of job displacement or deskilling, as AI tools increasingly take over instructional and assessment tasks. While AI can augment human work, there is concern that over-reliance on automation may marginalise the role of academia and reduce the relational aspects of teaching (Luckin, et al., 2019).

Research Gaps

Despite a growing body of work on artificial intelligence in higher education, many gaps persist, including the following: Much of the existing literature is technology-centric, emphasising the functionality and performance of AI tools, rather than their pedagogical or ethical dimensions. Studies often lack engagement with educational theory or ignore the lived experiences of faculty and students. There is a lack of robust institutional policy frameworks to govern AI use. While some universities have started drafting guidelines, a comprehensive, globally informed policy model for ethical AI in HE remains absent. Most of the studies are from the perspective of developed economies. And there is a clear underrepresentation of perspectives from underdeveloped and emerging nations. It may be noted here that infrastructural, cultural, and regulatory contexts differ significantly between developing to developed economies. Studies seldom address the long-term impact of AI adoption on academic integrity, faculty development, and student agency. Therefore, a more holistic, multi-stakeholder study is necessary to understand how AI can support inclusive, ethical, and equitable learning environments.

In light of the above, this study seeks to explore the integration of AI in HE, emphasising two important issues, viz., the transformative potential

of AI and the associated ethical concerns. The specific objectives are: (i) to examine how AI tools are currently being used in teaching, learning, and administration in HEIs, (ii) to identify institutional challenges in regulating AI usage, and (iii) to propose a framework for the ethical and responsible adoption of AI in academic settings.

This study adopts a conceptual and theoretical research design to explore the integration of AI in HE, with specific emphasis on its ethical implications. Conceptual research is apt for this study as it does not aim to test any hypothesis empirically but instead seeks to develop a deeper theoretical understanding of emerging patterns, frameworks, and ethical concerns through a critical review and synthesis of existing literature and policy documents. It draws insights from secondary sources such as peer-reviewed journal articles, institutional reports, policy frameworks, and global guidelines from authoritative bodies like UNESCO. The purpose is to synthesise diverse academic and policy perspectives to build an integrative understanding of AI's role and ethical consequences in HE. A thematic analysis approach is employed to review and derive key conceptual insights (Braun & Clarke, 2006). However, as a conceptual study, the paper relies on secondary data and does not capture real-time experiences of stakeholders. Future empirical studies may supplement these findings with primary data from students, faculty, staff and administrators.

Results and Discussion

This section, one of the core parts of the paper, presents an analysis of three interrelated themes: (i) the practical use of AI in HE/HEIs, (ii) associated ethical implications, and (iii) institutional preparedness to address the challenges responsibly.

AI Integration in Practice

The adoption of AI in HE has grown rapidly over the past decade, especially after the COVID-19 pandemic intensified the shift toward digital and hybrid learning environments. AI technologies are now embedded across all dimensions of HE—teaching, learning, and administration.

In teaching and learning, AI is used through intelligent tutoring systems, adaptive learning platforms, AI-based proctoring tools, and content generation applications. These tools provide personalised instruction by analysing students'

learning behaviours and tailoring content accordingly (Holmes, et al., 2019). For instance, AI-powered platforms can identify students struggling with a topic and recommend supplementary resources, or modify the pace of instruction to match individual needs. However, significant differences exist between users and non-users of ChatGPT: users generally support AI integration in HE, particularly in teaching methods, while non-users often oppose its integration, advocating for measures such as banning AI in universities (Blahopoulou & Ortiz-Bonnin, 2025). Students generally perceive AI as beneficial, especially in terms of enhancing learning quality and ease of use (Modi & Garg, 2025). The practical applications that students find most valuable include support for writing processes, research assistance, and learning enhancement (Wang, 2024). However, this polarisation in student attitudes highlights the importance of inclusive approaches to AI integration that address concerns while maximising benefits.

Nonetheless, faculty perspectives on AI integration reflect the complex balance between technological opportunity and pedagogical responsibility. Artificial intelligence influences HE, specifically exploring the perspectives of academicians regarding associated risks and opportunities (Dogan, 2024). It enables personalised support, allowing academicians to respond more effectively to students' needs and improve the overall educational process (Dogan, 2024). Moreover, AI has the potential to proactively identify students at risk of failure, offering academicians a comprehensive view for more effective assessment. However, despite these advantages, the growing dependence on technology poses challenges, including reduced interaction between academicians and students, shifts in workforce dynamics, concerns about student privacy, and disparities in technology access (Dogan, 2024).

In terms of administration, AI-driven chatbots and virtual assistants are being used to handle student queries, schedule reminders, track attendance, and automate enrolment procedures (UNESCO, 2021). This helps institutions to reduce operational burdens and improve response times, enhancing the overall student experience.

The key benefits of AI integration in HE include: (i) increased efficiency in instruction and assessment, (ii) greater personalisation of learning pathways, and (iii) higher student engagement through interactive and adaptive content. However, despite these advantages, the unregulated and rapid integration

of AI tools also introduces significant ethical and pedagogical challenges.

Ethical Implications

While AI provides valuable innovations, it also poses several ethical dilemmas that call for serious academic and policy attention.

Academic Integrity and Authenticity Concerns

One of the pressing issues is the misuse of generative AI (e.g., ChatGPT, Bard) for academic dishonesty, such as submitting AI-generated essays or solving complex assignments using prompt engineering. It also raises concerns regarding academic integrity, plagiarism, and the potential impact on critical thinking skills (Rosario Michel-Villarreal et al., 2023). This challenges traditional methods of assessment and undermines the credibility of student performance (Susnjak & McIntosh, 2024). Academia reports growing difficulty in identifying AI-generated content, especially in online learning settings. Furthermore, concerns were raised about potential costs, including the devaluation of university education when students rely on ChatGPT to complete assignments (Blahopoulou & Ortiz-Bonnin, 2025). The challenge lies in distinguishing between beneficial AI assistance and inappropriate academic dishonesty, requiring new frameworks for understanding and managing academic integrity in an AI-enhanced environment. Moreover, there are concerns regarding the potential oversimplification of academic tasks, the decline in students' critical thinking skills, and the challenges educators face in effectively incorporating AI tools without causing distractions (Rozek, 2024). These concerns highlight the need for careful consideration of how AI tools can enhance rather than replace critical thinking and analytical skills.

Privacy and Surveillance Concerns

AI tools, especially in learning analytics and proctoring, rely heavily on the collection of personal and behavioural data. This raises serious privacy concerns, particularly when students are unaware of how their data is being used or stored (UNESCO, 2021). The protection of student data and privacy, therefore, represents a fundamental ethical requirement for AI implementation in HE. This calls for strategies to address these issues by insisting on solid data protection and scalable technological infrastructures, continuous training, and ethical guidance (Ojha, 2024). Effective data

protection requires both technical solutions and institutional policies that prioritise student privacy. The complexity of privacy protection in AI systems also requires ongoing attention and regular updates to policies and procedures as technology evolves (Jianzheng & Xuwei, 2023). Contrarily, facial recognition, eye-tracking, and keystroke dynamics, used in AI-based examination monitoring systems, have been criticised for excessive surveillance and violation of student privacy.

Teacher Autonomy and Deskilling

Another emerging concern is the erosion of faculty autonomy. As AI tools are integrated into curriculum planning and assessment, educators may find their roles reduced to supervision rather than decision-making (Luckin, et al., 2019). There is also apprehension that routine tasks traditionally handled by academia—such as grading and feedback—could be fully automated, leading to deskilling and devaluation of academic labour. While some argue that AI might replace educators, most believe that human teachers offer irreplaceable services such as critical thinking, creativity, and emotional understanding (Jianzheng & Xuwei, 2023). This perspective emphasises the complementary rather than substitutional role of AI in education. However, faculty concerns about the impact of AI on traditional educational relationships and processes are significant.

Algorithmic Bias and Fairness

AI systems are only as fair as the data they are trained on. Predictive analytics used for identifying at-risk students or evaluating academic performance can inadvertently reinforce biases against certain demographic groups, especially if the training data lacks diversity or reflects historical inequalities (Holmes, et al., 2019). This could lead to unfair treatment in admission, grading, or placement decisions. Ensuring fairness and preventing discriminatory outcomes in AI applications is one of the most challenging aspects of ethical AI implementation. This raises ethical concerns, necessitates redesign, requires strategies for continuous learning, and demands alignment with industry standards (Ammar Abulibdeh, et al., 2024). The development of bias-free AI systems requires systematic approaches to data collection, algorithm design, and outcome monitoring. This underscores the importance of developing interdisciplinary research capable of generating both transparent and effective frameworks (Al-Omari, et al., 2025).

This would ensure that the longer-term impact of AI utilisation is harmonised with educational and societal targets.

Institutional Preparedness

Despite the rising adoption of AI technologies, many HEIs appear underprepared to deal with their broader ethical, pedagogical, and governance implications.

Awareness Among Faculty and Students

The digital divide (i.e., barriers to equitable AI implementation), not only affects access to AI technologies but also impacts the quality of educational experiences available to different student populations. Both faculty and students often lack adequate awareness about the risks and responsibilities associated with AI tools (Zawacki-Richter, et al., 2019). The successful integration of AI in HE requires comprehensive faculty development and institutional change management strategies. Furthermore, the adaptation of faculty and students to AI-based technologies requires comprehensive training and a cultural shift in educational institutions (Abdurehman, 2024). This need for training extends beyond basic technical skills to encompass pedagogical integration and ethical considerations (Kohnke, et al., 2023). However, the challenge of faculty preparation is compounded by the rapid pace of AI development, which requires ongoing professional development rather than one-time training interventions. While some faculty welcome AI for administrative support, many express concern over their limited understanding of how AI systems make decisions or how to evaluate their outputs.

Existing Policies or Lack Thereof

Institutional policies governing AI use in teaching and learning are either nascent or non-existent in many regions (UNESCO, 2021). While a few leading universities have issued guidelines on AI-assisted writing and academic integrity, a standardised policy framework—particularly one addressing data governance, accountability, and ethical AI design—remains largely absent. Institutional readiness involves multiple factors beyond individual faculty capabilities. The effective AI integration requires a shift from isolated individual innovations to coordinated, institution-wide strategies, conceptualised as structured flexibility frameworks, while acknowledging significant regional and cultural variations in implementation approaches worldwide (Abbasnejad, et al., 2025).

The Need for AI Literacy and Capacity Building

There is a growing consensus that AI literacy must become a core competency for both faculty and students. This includes not only technical knowledge of how AI works, but also the ethical, legal, and pedagogical dimensions of AI use. Institutions need to invest in training programs, workshops, and curricular modules to build this capacity and ensure responsible use of AI across academic settings (Luckin, et al., 2019). The success of AI integration depends heavily on comprehensive professional development programs that prepare faculty and staff for new technological realities (Knoth, et al., 2024). This is necessary to effectively navigate AI-enhanced educational environments. Because while AI is transforming HE in many ways, its integration must be approached with caution, clarity, and care. Institutional readiness, ethical safeguards, and inclusive policy design will be critical to ensuring that the benefits of AI are harnessed responsibly without compromising educational integrity or equity.

However, the successful implementation of AI in HE requires significant technological infrastructure and financial resources that many institutions struggle to provide. Substantial benefits, such as improved administrative efficiency, personalised learning, and data-driven decision-making, are often impeded by challenges like inadequate infrastructure, socio-economic disparities, and ethical issues related to data privacy and algorithmic bias (Patel & Ragolane, 2024 and Mihmas & Rashed, 2024). The infrastructure requirements extend beyond basic technology to encompass sophisticated systems capable of supporting complex AI applications while maintaining security and reliability.

National Implementation Strategies

Different countries have developed distinct approaches to AI integration based on their specific cultural, economic, and educational contexts. For example, within the framework of the ongoing implementation of '2030 Vision for the Comprehensive Development of Higher Education in Saudi Arabia', it is felt that the integration of AI has emerged as pivotal for the country's numerous HEIs (Alotaibi & Alshehri, 2023). Similarly, a study explored the perspectives of 20 educational technologists from four Saudi Arabian universities regarding the integration of AI-powered technology, particularly ChatGPT, into online HE (Mihmas & Rashed, 2024). Case studies of different nations provide valuable insights

into how different educational systems approach AI integration challenges (Mqaqa, 2024).

Suggestions

In light of the opportunities and ethical challenges outlined above, HEIs must adopt a proactive and multi-stakeholder approach to ensure the responsible integration of AI. The following suggestions focus on developing robust ethical frameworks, institutional policies, and capacity-building initiatives that foster trust, transparency, and resilience in HE ecosystems.

Ethical Frameworks for Use of AI in HE

One of the important requirements, and therefore, the suggestion is the development of comprehensive ethical guidelines that govern the use of AI in academic settings. Institutions should align their internal frameworks with global standards such as UNESCO's recommendations on the Ethics of AI (UNESCO, 2021) and the OECD AI Principles. The establishment of robust ethical frameworks for AI integration in HE requires comprehensive approaches that address multiple stakeholder concerns and future implications. The development of these guidelines requires input from diverse stakeholders, including academia, students, technology experts, and ethicists, to ensure comprehensive coverage of potential issues and concerns. Besides personalised learning systems, the adoption of AI should integrate these ethical and sometimes even legal frameworks. These frameworks must balance innovation with protection, ensuring that AI applications serve educational goals while respecting fundamental rights and values. However, data breaches, biases in algorithms, scarce resources, and resistance to change will work as unique obstacles (Al-Omari et al., 2025). Therefore, there is an urgent need for clear policies, guidelines, and frameworks to responsibly integrate ChatGPT in HE (Rosario Michel-Villarreal et al., 2023). Such a framework should include: (i) transparency in how AI tools are selected, used, and evaluated, (ii) accountability mechanisms to assign responsibility for AI-driven decisions, (iii) equity safeguards to prevent algorithmic bias and exclusion of marginalised groups, and (iv) human oversight to ensure AI remains a supportive—not autonomous—actor in decision-making. Embedding these principles into ethical frameworks will help mitigate ethical risks while building stakeholder confidence in AI applications.

Policy Suggestions for Academic Integrity and Data Protection

To counter the misuse of generative AI tools and to protect sensitive student and faculty data, institutions must update and enforce policy frameworks covering: (i) AI and Academic Integrity Policies (clearly defining what constitutes acceptable and unacceptable use of AI tools for academic work), (ii) Data Governance and Privacy Protocols (establishing clear rules on how AI systems collect, store, and process personal data - HEIs should comply with local and global data protection regulations and ensure informed consent practices), (iii) AI Tool Vetting and Licensing (before deployment, AI tools should be subject to ethical audits and pilot testing to evaluate their fairness, reliability, and alignment with institutional goals). Such policies will provide a legal and ethical foundation for responsible AI use while minimising the risk of surveillance, bias, and misuse.

Faculty Training and Student Orientation Programs

There is limited AI literacy among faculty members and learners. Universities and HEIs should design and implement capacity-building programs to help stakeholders engage meaningfully with AI technologies. Faculty training through workshops, certifications, and hands-on training sessions on AI integration in curriculum design, assessment, and academic governance can be considered. Emphasis should also be placed on identifying AI-generated content, understanding bias in algorithms, and preserving pedagogical autonomy. For student orientation, the HEIs may introduce AI literacy modules as part of orientation programs or first-semester courses. This should cover responsible AI usage, academic integrity, and ethical implications of emerging technologies. By investing in such programs, HEIs can empower both faculty and students to become informed participants in AI-mediated learning environments.

Development of AI-Resilient Assessment Systems

Traditional assessment methods are increasingly vulnerable to manipulation through generative AI. Therefore, institutions must redesign their evaluation systems to ensure authenticity and academic rigour. In this regard, the suggestions include: (i) project-based and experiential assessments that focus on real-world application, which AI tools are less likely to replicate effectively, (ii) viva-voce examinations or oral defences to assess understanding through dialogue, (iii) iterative

assignments involving drafts and reflective journals that track the evolution of student thinking, and (iv) hybrid AI detection tools to assist instructors in identifying AI-generated content—but without over-reliance. Redesigning assessments with these strategies will help maintain educational standards while acknowledging the evolving technological landscape.

Strategies for integrating GenAI into HE should create the following positive outcomes: raise awareness about disruptive change, train faculty, change teaching and assessment practices, partner with students, impart AI learning literacies, bridge the digital divide, and conduct applied research (Kurtz, et al., 2024). Of course, effective AI implementation requires coordination among multiple stakeholders, including technology providers, educators, policymakers, and students (Abdurehman, 2024). This is essential to navigate AI integration complexities and enhance educational outcomes and operational efficiency.

Conclusion

This paper has explored the evolution of AI in HE, current practical applications, and the emerging ethical implications surrounding its use. It also highlighted institutional readiness. Despite growing interest, significant gaps remain—especially regarding policy development, ethical literacy, and the inclusivity of global perspectives in AI discourse.

The integration of AI into HE presents both transformative potential and major ethical challenges. As institutions embrace AI-driven tools for teaching, learning, and administration, they reap benefits such as increased efficiency, personalised instruction, and enhanced engagement. However, these advancements also expose vulnerabilities—ranging from academic dishonesty and privacy infringements to bias in algorithmic decisions and concerns about faculty autonomy. To address these concerns, the study recommends the establishment of clear ethical frameworks, policy updates for academic integrity and data protection, faculty and student capacity-building programs, and AI-resilient assessment designs. These measures are essential to foster a balanced approach where innovation is embraced without compromising academic values. As AI continues to shape the future of education, the path forward must be guided by critical reflection, inclusive dialogue, and a commitment to equity, accountability, and human-centred learning. Only then can AI catalyse educational excellence rather than be a threat to its integrity.

The path forward requires collaborative effort among all stakeholders in the HE ecosystem. It is necessary to leverage AI to foster innovation, improve educational outcomes, and address potential risks. Success will depend on institutions' ability to develop comprehensive strategies that address technical infrastructure, faculty development, ethical frameworks, and student engagement while maintaining focus on educational quality and equity

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Dream to Policy: Integrating Dr. Abdul Kalam's Educational Vision with the National Education Policy—2020

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Dr. A P J Abdul Kalam, affectionately known as the 'Missile Man of India', was more than a distinguished scientist; he was a visionary educator whose philosophy continues to inspire generations. Central to his thought was the belief that education should not merely transmit knowledge but ignite curiosity, foster innovation, and develop moral integrity. Dr. Kalam envisioned an education system that produced self-reliant individuals with a strong sense of social responsibility, rooted in cultural heritage yet capable of global leadership.

The National Education Policy, 2020, marks a landmark shift in India's educational trajectory, aiming to overhaul the structure, pedagogy, and inclusivity of learning. While the policy represents a forward-looking blueprint, its philosophical resonance with Kalam's vision merits deeper exploration. Both emphasise multidisciplinary learning, skill development, technology integration, and universal access. Yet, Kalam's humanistic emphasis on moral leadership and national character building adds a dimension that can further enrich policy implementation.

This paper investigates how Dr Kalam's educational philosophy converges with NEP- 2020 and where it diverges, offering a critical framework for embedding visionary ideals into national reform strategies. By situating NEP-2020 within Kalam's philosophical contours, the study provides valuable insights into aligning policy design with transformative educational values.

Rationale of the Study

Education in the 21st century faces the dual challenge of preserving core human values while equipping learners with the skills required to thrive in a rapidly changing, technology-driven world. India's National Education Policy (NEP), 2020 emerges as a comprehensive reform blueprint addressing these needs by promoting holistic, multidisciplinary, and inclusive education. However, translating such a broad vision into practice demands a philosophical foundation that can inspire and guide its implementation.

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The educational philosophy of Dr. A P J Abdul Kalam, one of India's most respected scientist-statesmen, offers a compelling and relevant framework in this context. His vision for education emphasized creativity, innovation, research orientation, technological literacy, and ethical responsibility—principles that strongly align with NEP-2020's objectives. Despite this alignment, there is limited scholarly work that systematically examines the synergy between Kalam's educational thought and NEP-2020 in order to identify actionable strategies for educators and policymakers.

This study addresses that gap by conducting a qualitative thematic analysis of Kalam's speeches, writings, and interviews alongside key sections of NEP 2020. The rationale lies in the belief that bridging a visionary's ideals with policy directives can enhance the clarity, coherence, and effectiveness of educational reforms.

Moreover, in an era where policy changes often struggle to influence classroom realities, understanding Kalam's human-centred yet technology-positive approach can help ensure that NEP 2020 reforms are not only structurally implemented but also value-driven, innovative, and contextually relevant.

By exploring this connection, the study provides a conceptual roadmap for integrating Kalam's vision into policy implementation, thereby contributing to both educational philosophy and applied educational practice in India.

Review of Related Literature

Dr. APJ Abdul Kalam's educational philosophy consistently advocates the cultivation of creativity, curiosity, and moral responsibility as foundational pillars of national development (Sharma, 2020). His speeches and writings highlight the transformative potential of youth empowerment and skill development, aligning closely with modern experiential and learner-centred pedagogies (Ghosh, 2021). Khan and Iqbal (2019) identify mentorship and the establishment of rural innovation hubs as critical components of Kalam's vision, anticipating contemporary policy priorities that aim to bridge disparities in educational access between urban and rural regions and foster community-based innovation.

The National Education Policy 2020, introduced after more than three decades without major structural reform, represents a comprehensive blueprint for overhauling India's educational system (Government of India, Ministry of Education, 2020). Among its major provisions are the 5+3+3+4 curricular structure, integration of vocational education across all levels, and the promotion of technology-enabled and flexible learning pathways. Patel (2022) praises the policy's structural flexibility and potential to accommodate diverse learner needs, while Sharma and Yadav (2023) caution that implementation challenges—particularly in rural and resource-limited contexts—may hinder the realisation of its ambitious objectives.

Studies on the convergence between Kalam's vision and NEP- 2020 underline deep philosophical and practical synergies. Singh and Bhattacharya (2021) note strong alignment in their shared emphasis on critical thinking, innovation, and inclusive education. Verma (2022) expands on this by illustrating how Kalam's ideas could serve as a guiding framework for NEP's effective execution, though she also points to a need for more deliberate embedding of moral and ethical education. Banerjee (2024) emphasises this ethical shortfall, arguing for systematic integration of value education into NEP frameworks.

International perspectives further strengthen the case for integrating Kalam's ideas into contemporary reforms. Lee (2025), through a cross-national comparative study, demonstrates that embedding ethical leadership philosophies within national education policies produces deeper and more sustainable societal transformation. This global evidence lends support to the proposition that incorporating Kalam's leadership ideals into NEP 2020 could not only enhance its philosophical coherence but also broaden its long-term developmental impact.

Objectives of the Study

1. To explore the core principles and themes of A P J Abdul Kalam's educational philosophy as expressed in his speeches, writings, and public addresses.
2. To examine the key provisions of the National Education Policy (NEP), 2020 in the context of their intended philosophical and practical orientations.
3. To identify thematic parallels and areas of convergence between Kalam's educational vision and the goals outlined in NEP-2020.

Research Design

This study adopted a qualitative research design, specifically using documentary and thematic analysis, to examine the alignment between Dr. A P J Abdul Kalam's educational philosophy and the National Education Policy (NEP), 2020. A qualitative approach was chosen as it enables an in-depth exploration of philosophical themes, policy orientations, and underlying values expressed in speeches, writings, and government documents. The design was interpretive in nature, focusing on uncovering meaning, identifying patterns, and drawing thematic parallels between Kalam's vision and NEP 2020.

The study employed purposive sampling, selecting documents that were most relevant to the research objectives. Three key categories of sources were used:

1. **Primary Sources:** Speeches, books, and public addresses of Dr. A P J Abdul Kalam (e.g., *Ignited Minds*, *Wings of Fire*, *India 2020*, and convocation speeches).
2. **Policy Documents :** The official text of the National Education Policy (NEP), 2020, published by the Government of India.
3. **Secondary Sources :** Scholarly articles, commentaries, and reviews (2019–2025) providing critical perspectives on both Kalam's philosophy and NEP 2020.

This sampling ensured depth, relevance, and credibility in capturing both philosophical ideals and contemporary policy discourse.

A document analysis framework was developed as the primary data collection tool. The framework included criteria such as:

- Core values and themes emphasised in Kalam's educational thought (creativity, innovation, rural–urban equity, moral development, scientific temper).
- Key provisions of NEP 2020 (holistic education, skill development, inclusion, and innovation).
- Points of convergence and divergence between Kalam's philosophy and NEP objectives.

The procedure involved:

- **Collection of Sources** through libraries, online repositories, and official government portals.
- **Systematic Reading and Coding** of texts using thematic codes aligned with the study objectives.

- **Categorisation** of codes into broader themes such as creativity, equity, innovation, skill development, and nation-building.
- **Comparative Analysis** between Kalam's ideals and NEP provisions to identify intersections and contrasts.

Ethical Considerations in the Study

While the study used publicly available documents and did not involve human subjects, strict adherence to qualitative research ethics was maintained:

- All sources were properly acknowledged and cited in accordance with APA 7th edition guidelines.
- The researcher ensured an unbiased interpretation of Kalam's philosophy and NEP 2020, avoiding selective quotation or misrepresentation.
- The research process complied with institutional guidelines for secondary data studies and the principles of integrity, transparency, and academic honesty.

To enhance credibility, themes were cross-checked across multiple texts of Kalam and verified against NEP 2020 provisions. Triangulation of primary and secondary sources was used to strengthen interpretive reliability. Peer debriefing with subject experts was conducted to reduce researcher bias.

Results and Discussion

The thematic analysis identified five key areas of convergence between A P J Abdul Kalam's educational philosophy and the National Education Policy (NEP), 2020, as well as certain divergences in their operational frameworks. Findings are presented in alignment with the study's objectives and are supported by textual evidence from Kalam's works and policy documents.

Creativity, Innovation, and Scientific Temper

Findings

Kalam consistently stressed the cultivation of creativity and innovation as essential for national progress, urging education to "ignite the minds" of learners through experiential learning and problem-solving (Kalam, 2002). NEP-2020 reflects this ethos through its emphasis on design thinking, innovation-oriented curricula, and integration of coding and vocational exposure (Ministry of Education, 2020).

Discussion

Both visions converge on preparing learners for the knowledge economy through creativity-driven education. However, NEP-2020 operationalises this through structured curricular reform. Kalam envisioned a more grassroots innovation network involving rural schools, local industries, and scientific mentorship. This highlights a policy-practice gap: NEP-2020 formalises innovation within classrooms, whereas Kalam underscored a community-based innovation ecosystem that remains underdeveloped in the policy framework.

Inclusivity and Equitable Access

Findings

Kalam emphasised bridging urban-rural divides by integrating rural talent into mainstream education (Khan & Iqbal, 2019). NEP-2020 advances equity through measures targeting socio-economically disadvantaged groups (SEDGs), gender parity, and early instruction in mother tongue languages.

Discussion

The philosophical overlap is evident in the shared commitment to inclusive education as a national imperative. Yet, NEP-2020 frames inclusion largely as a policy intervention, while Kalam envisioned it as a societal mission involving the participation of scientists, educators, and local communities. This divergence suggests a need for stronger community-driven mechanisms in NEP's implementation.

Moral and Ethical Foundation of Education

Findings

Kalam's philosophy integrates moral values, national pride, and social responsibility into the educational framework, asserting that "a nation's strength is not in its wealth, but in the character of its people" (Sharma, 2020). NEP 2020 similarly embeds ethics, constitutional values, and global citizenship within its curricular aims.

Discussion

While both visions prioritise moral education, Kalam places personal role modelling by teachers and value-oriented leadership training at the core of this process. NEP 2020 offers a more generalised approach, incorporating ethics into curricular content without prescribing robust teacher capacity-building measures in value transmission. This highlights an opportunity for NEP-2020 to incorporate Kalam-inspired teacher mentoring frameworks.

Skill Development and Employability

Findings

Kalam consistently advocated for blending academic learning with vocational and entrepreneurial skills, particularly in the science and technology sectors. NEP 2020 integrates vocational exposure at all stages, including the introduction of skill modules from Grade 6 onward.

Discussion

Both approaches recognise the urgency of preparing students for future labor markets. However, Kalam emphasised localised innovation hubs and direct industry-student partnerships, particularly at the undergraduate level. NEP-2020 adopts a broader framework, which risks being generic unless supplemented by context-specific, community-driven initiatives—an area where Kalam's model offers clear guidance.

Multidisciplinary and Holistic Education

Findings

Kalam's educational vision supports the dismantling of rigid disciplinary boundaries, encouraging a fusion of science, arts, and ethics in the learning process. NEP-2020 institutionalises this through flexible curricular structures, multiple entry-exit options, and the promotion of multidisciplinary universities.

Discussion

NEP-2020 resonates strongly with Kalam's holistic vision; its reforms are primarily structural. Kalam emphasised active integration of disciplines through collaborative projects, rather than structural flexibility alone. This distinction underscores the need for a culture shift in pedagogy to fully realise holistic learning.

Synthesis of Findings

The findings reveal significant philosophical convergence between Kalam's educational ideals and NEP 2020 in areas such as creativity, inclusivity, ethics, skills, and holistic learning. The key divergence lies in implementation: NEP-2020 relies on structural and policy-driven reforms, whereas Kalam emphasised locally grounded, community-based and mentor-supported models of education.

Conclusion and Implications

This study explored the philosophical underpinnings of A P J Abdul Kalam's educational

vision and examined their alignment with the National Education Policy (NEP), 2020. The findings reveal a notable convergence between the two, particularly in their shared commitment to creativity, inclusivity, moral education, skill development, and holistic learning. Both emphasise preparing learners for a dynamic knowledge economy while instilling strong ethical values and national pride.

However, a critical insight emerging from this study is that while NEP 2020 offers a comprehensive structural framework for reform, Kalam's philosophy offers a grassroots, mentor-driven, and community-embedded approach that complements and strengthens policy implementation. Kalam envisioned education as a mission involving educators, scientists, industries, and local communities in a collective effort to nurture talent, especially in underserved areas. This people-centric model addresses potential gaps in NEP's policy-driven execution, ensuring that reforms are not only implemented but internalised within India's socio-cultural context.

Theoretical Implications

- The study reinforces the relevance of visionary leadership in educational reform, illustrating how an individual's philosophy can align with, influence, and enrich national policy frameworks.
- It underscores the importance of integrating philosophical ideals with operational strategies to create sustainable and culturally grounded education systems.

Practical and Policy Implications

- ***Curricular Integration:*** Embedding Kalam's emphasis on grassroots innovation, rural inclusion, and mentorship into NEP's curricular and co-curricular design.
- ***Teacher Capacity Building:*** Developing structured teacher mentorship programs inspired by Kalam's value-based pedagogy to strengthen ethical and moral education.
- ***Community Engagement:*** Establishing local innovation hubs and community partnerships to bridge the gap between NEP's structural provisions and real-world implementation.
- ***Monitoring and Evaluation:*** Incorporating qualitative performance metrics, such as creativity and social responsibility, alongside conventional academic indicators.

Limitations and Future Research

Like all qualitative inquiries, this study has certain limitations that must be acknowledged. First, the analysis is largely interpretative, relying on selected writings and speeches of Dr. A P J Abdul Kalam alongside policy texts of the National Education Policy (NEP), 2020. While rigorous coding and thematic analysis were undertaken, the interpretation of philosophical ideas and policy orientations may carry inherent subjectivity. Second, the study is limited to textual analysis and does not incorporate the perspectives of practitioners, policymakers, or students, which could have provided a richer and more multidimensional understanding. Third, the scope is confined to the Indian context; hence, the findings may not be directly generalizable to other countries or education systems, though the philosophical insights may hold broader relevance.

Future research can build upon these findings in several ways. Comparative studies may be conducted to examine how other national education policies align with visionary leaders' educational philosophies, both within and beyond India. Empirical research involving interviews with educators, policymakers, and students can further validate the thematic parallels identified in this study. Additionally, longitudinal studies could explore how the implementation of NEP 2020 evolves over time and whether its outcomes resonate with Kalam's grassroots and mentor-driven vision. Finally, action research projects that pilot Kalam-inspired practices—such as rural innovation hubs, mentorship networks, or community-integrated pedagogies—could provide concrete insights into bridging philosophical vision with policy reform.

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Editor

A Much-needed Reassurance beyond the Syllabus for Gifted Students: Exploring Opportunities and Available Provisions in India

Ketika Kasetwar* and Ranjna Thakur**

Giftedness is more than just high intelligence or academic success—it's a complex and multifaceted trait that includes exceptional abilities in areas like problem-solving, creativity, leadership, and arts. It's often described as a natural ability to think, learn, or create at a level far beyond one's peers. However, defining giftedness has been a subject of ongoing debate among psychologists, educators, and researchers. While some focus on intellectual giftedness, others emphasise creativity, motivation, leadership, or even a deep emotional sensitivity.

In India, the term 'gifted' is still widely misunderstood. Many people mistakenly associate it with learning difficulties or Special Educational Needs (SEN). However, with the National Education Policy (NEP) 2020 formally recognising 'giftedness' and calling for provisions to support these students, awareness is slowly growing. Parents, educators, and researchers are now actively seeking accurate and up-to-date information to better support high-ability learners and their unique needs.

Gifted students often exhibit advanced intellectual abilities, intense curiosity, deep emotions, and a strong drive to explore ideas. According to the National Association for Gifted Children (2002), gifted individuals are those who perform—or have the potential to perform—at significantly higher levels than their peers in one or more domains. Traditionally, IQ scores above 130 were used as the primary measure of giftedness. However, modern research shows that gifted individuals are far more diverse in their cognitive, emotional, and behavioral characteristics. Some display rapid learning and advanced problem-solving skills, while others are highly creative thinkers or natural-born leaders.

It's important to understand that giftedness doesn't look the same in every individual. Some students are profoundly gifted, showing extraordinary abilities at a very young age, while others have what is known as asynchronous development—excelling in certain areas while struggling with social or emotional maturity. Then there are twice-exceptional (2e) students, who are both gifted and have learning disabilities like dyslexia or ADHD, requiring specialized educational support. Cultural and socio-economic factors also play a role in how giftedness is identified and nurtured, highlighting the need for inclusive and flexible support strategies.

Beyond academic intelligence, giftedness takes many forms. Some students are creatively gifted, displaying originality in the arts, writing, or problem-solving. Others possess leadership giftedness, with a natural ability to inspire and guide people. Some excel in psychomotor skills, such as athletics or dance, demonstrating extraordinary coordination and physical talent. However, with these strengths also come challenges. Many gifted students experience heightened emotional sensitivity, perfectionism, or social isolation because they think and process the world differently from their peers. Without proper support, they may become disengaged, struggle with anxiety, or even underachieve.

In India, the absence of a formal Gifted Education Policy means that many high-ability students are unable to receive the support they need. This is why it's crucial for educators, especially in higher education institutes, to understand giftedness in a well-rounded way. By fostering an environment that nurtures not only the high-ability students' academic talents but also their emotional and social development, institutions can help these students thrive, in turn helping them become strong ambassadors of the institutions. Enrichment programs, mentorship opportunities, and flexible learning approaches can ensure that gifted individuals reach their full potential—contributing meaningfully to academia, innovation, and society at large.

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Approaches to Understanding Giftedness

In the early days, intelligence was mostly measured by IQ tests, and being "gifted" was often equated with having a high IQ score. Giftedness has come a long way from the way we used to understand it. One of the most well-known pioneers in this field, Lewis Terman, conducted a groundbreaking study in the early 20th century, tracking gifted children over several decades. His work reinforced the idea that intelligence was the key factor in giftedness. However, as researchers dug deeper, they realised that giftedness isn't just about being exceptionally intelligent - it also involves creativity, leadership skills, motivation, and even emotional sensitivity.

By the mid-20th century, experts started moving away from a narrow, IQ-based definition of giftedness. In 1978, Joseph Renzulli proposed his Three-Ring Model of Giftedness, suggesting that giftedness isn't just about raw intelligence but emerges when above-average ability, creativity, and task commitment intersect. Around the same time, Robert Sternberg began challenging traditional views with what would become his Triarchic Theory of Intelligence, formally introduced in 1985, which emphasised that giftedness could manifest in analytical, creative, and practical ways—not just through academic achievement. These expanded perspectives helped educators recognise that gifted students come in many forms, not just those who perform well on standardised tests.

Education policies also started shifting as researchers realised that simply pushing gifted students through school faster (acceleration) wasn't enough. While acceleration can help in some cases, gifted students often need more than just speed—they need depth. Differentiation and enrichment approaches gained popularity, focusing on deeper learning experiences, problem-solving, and interdisciplinary studies. Instead of just racing ahead, gifted students were encouraged to

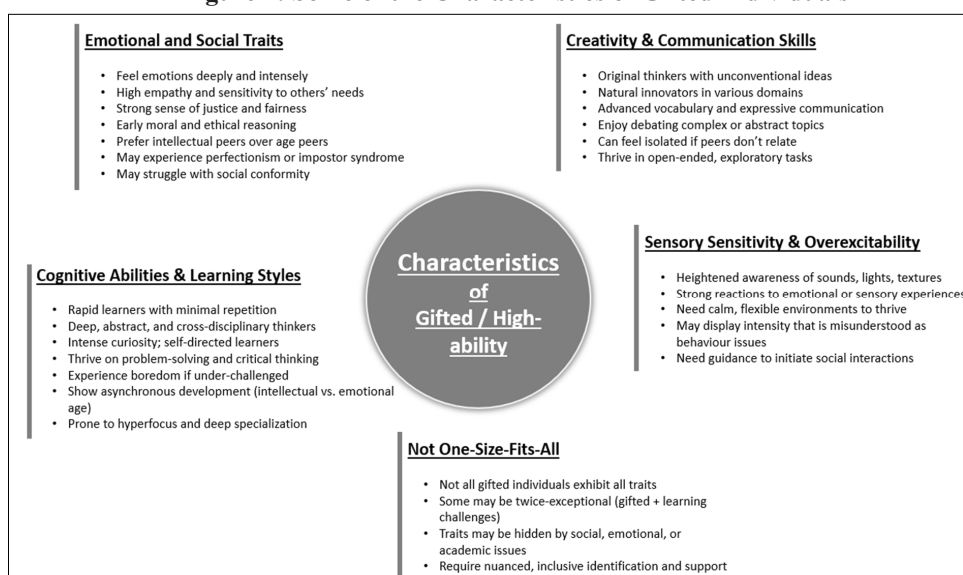
engage with complex ideas, work on independent projects, and think critically about real-world problems.

In 2022, Chowkase and Watve proposed a new approach to gifted education for today's hyperconnected world. They suggested focusing on teaching gifted children to contribute to society's greater good, rather than on individual achievements. Their 3C's framework promotes competence in actions, commitment to tasks, and Concern for others. Competence is the ability to gain necessary skills, task commitment is the drive to complete tasks, and empathy involves perceiving others' needs and helping meaningfully. Concern for others emphasises integrating empathy, compassion, and prosocial behaviour into the educational process. The goal is to develop gifted behaviours that are used for the well-being of both oneself and others, rather than just for personal gain.

Characteristics of Gifted Individuals

Gifted individuals stand out not because of their academic abilities but due to their unique ways of thinking, feeling, and interacting with the world. Their intellectual depth, emotional intensity, and creative problem-solving skills set them apart, often making their experiences vastly different from those of their peers. Understanding these characteristics is essential for educators, parents, and policymakers to ensure that gifted individuals receive the right support to reach their full potential. Figure 1 gives an idea about these characteristics, though not all.

Figure 1: Some of the Characteristics of Gifted Individuals



To help identify and differentiate a gifted student from a bright student, Janice Szabos in 1989 tabulated the differences between a gifted and a bright child (Table 1).

Table 1: Differences between Bright and Gifted and Individuals

Bright Individual	Gifted Individual
Knows the answer	Asks the questions
Is interested	Is highly curious
Is attentive	Is mentally and physically involved
Has good ideas	Has wild and silly ideas
Works hard	Plays around yet tests well
Answers the questions	Discusses in detail, elaborates
Top group	Beyond the group
Listens with interest	Shows strong feelings and opinions
Learns with ease	Already knows
6-8 repetitions for mastery	1-2 repetitions for mastery
Understands	Constructs abstractions
Enjoys peers	Prefers adults
Grasps meanings	Draws inferences
Completes projects	Initiates projects
Is receptive	Is intense
Copies accurately	Creates new designs
Enjoys school	Enjoys learning
Absorbs information	Manipulates information
Technician	Inventor
Good memorizer	Good guesser
Enjoys straightforward, sequential presentations	Thrives on complexity
Is alert	Is keenly observant
Is pleased with own learning	Is highly self-critical

Profiles of Gifted Individuals

Gifted individuals are often thought of as high achievers, but their experiences, challenges, and behaviours can vary widely. Educational researchers Betts & Neihart (1988) identified six distinct profiles of gifted individuals, each with unique strengths and struggles. Understanding these profiles helps educators, parents, and policymakers create environments that support gifted students in reaching their full potential.

The Significance of Supporting Gifted Students at the College Level is Crucial

Though limited, many programmes exist to recognise and nurture giftedness at the school level in India - through specialised schools, early enrichment programs, and national talent search initiatives. However, once these high-ability students transition into higher education, they face environments that lack the recognition, flexibility, and support they need to continue thriving. This discontinuity may create a critical gap in the academic journey of gifted individuals, many of whom enter universities with tremendous potential but little structured guidance to navigate the next phase of their intellectual development.

Gifted undergraduate (UG) and postgraduate (PG) students typically exhibit advanced curiosity, deep intrinsic motivation, and a desire for complexity and interdisciplinary exploration. Yet, they may simultaneously face emotional and social challenges such as perfectionism, impostor syndrome, and difficulty connecting with age-peers. These nuanced needs if not actively addressed in traditional university systems, which prioritise uniform curricula, rigid timelines, and standardised assessments, may lead to many gifted students experiencing disengagement, underachievement, or mental health struggles—not because of lack of ability, but due to a mismatch between their learning needs and the institutional offerings.

Supporting these students requires a shift in institutional mindset and academic design. Tailored mentorship, access to advanced research opportunities, inquiry-based learning models, and peer networks of like-minded individuals can significantly enhance the educational experience of gifted learners. Leveraging digital tools, interdisciplinary coursework, and global academic collaborations can further enrich their pathways, enabling them to innovate, question, and contribute meaningfully. Neuroscience and educational psychology research clearly show that gifted learners process and respond to information differently; acknowledging this diversity is key to unlocking their potential.

When higher education institutions invest in structures that support giftedness - such as mentorships, clubs, internships, discussions beyond curricula, interactions with varied experts and exchange programmes - they do more than support

Table 2: Profiles of Gifted Individuals

Profile	Description	Challenges	Support Strategies
1. Successful	High-achievers; responsible, diligent, and perform well in structured academic environments.	Fear of failure, over-reliance on external validation, avoidance of risks.	Encourage creative problem-solving, provide independent projects, emphasize growth over grades.
2. Challenging	Independent thinkers; question authority, resist conformity, and often push back against rigid systems.	Misinterpreted as disruptive or uncooperative; risk of disengagement or misdiagnosis.	Offer flexible learning paths, promote independent study, and pair with mentors who value their thinking.
3. Underground	Hide abilities to fit in socially, especially during adolescence; may underperform to blend in.	Suppressed potential, identity conflicts, and low self-esteem.	Create safe, inclusive environments; use small group learning or peer mentoring; promote acceptance of diverse abilities.
4. Dropout	Seem disengaged; often bored, frustrated, or feel school doesn't meet their intellectual/ emotional needs.	Labelled as lazy or unmotivated; risk of leaving school.	Offer acceleration, interest-based learning, alternative pathways, and early intervention for signs of withdrawal.
5. Twice-Exceptional (2e)	Gifted with coexisting learning disabilities or emotional challenges (e.g., ADHD, dyslexia, anxiety).	Strengths and struggles mask each other; often misunderstood; risk of academic failure.	IEPs, provide accommodations, use a dual-focus approach supporting both challenges and strengths.
6. Autonomous	Self-directed, intrinsically motivated learners who seek knowledge independently.	May feel isolated; limited by traditional school systems; struggle to find peers.	Encourage project-based and advanced coursework, offer mentorships, and support independent research opportunities.

individual students. They elevate their own academic value proposition. Gifted students, when supported, are more likely to contribute to original research, lead campus innovation, and represent the institution in prestigious academic forums. Their success reflects directly on the institution's reputation, attracting external funding, distinguished faculty, and international collaborations. In this sense, supporting gifted students is a strategic imperative for universities aiming to be future-ready and globally relevant.

Supporting Gifted Students leads to an increase in the value of HEIs

Recognising and nurturing gifted students—particularly those with low visibility—offers profound advantages to colleges and universities. These students, who may not always top examinations or stand out in traditional classroom settings, often possess deep intellectual curiosity, high creative potential, and the capacity for original thinking. Gifted students frequently engage with complex ideas early, contributing to research, independent projects, and scholarly publications. By acknowledging and supporting such learners, institutions can foster academic excellence and innovation.

A supportive environment for gifted learners also strengthens an institution's reputation and appeal. Colleges and universities that are seen as nurturing high-potential individuals are more likely to attract quality faculty, research partnerships, and institutional collaborations. Furthermore, programs designed to identify and support gifted students can help secure grants, CSR funding, and philanthropic investments. These benefits make a compelling case for embedding gifted education into the strategic vision of higher education institutions.

Equally important is the role such initiatives play in promoting diversity and inclusion. Many gifted students come from underrepresented or marginalised backgrounds and remain invisible in mainstream educational spaces due to systemic barriers. By creating pathways for these students, institutions can uphold the principles of inclusive excellence. This approach is closely aligned with the aims of the National Education Policy (NEP) 2020, which emphasizes personalisation, equity, and the cultivation of talent across the spectrum.

Special provisions like admissions to professional courses without undergoing the process

of routine competitive examinations will go a long way in promoting these students to professional courses. Gifted students may be selected for the professional courses on the basis of their aptitude and talent, as many gifted students may not be competent enough to succeed in routine competitive examinations conducted in India. Institutions like the Association of Indian Universities, which has expertise in examination reforms, may conduct research and devise tools for assessing the competence of gifted students for entry into different professional courses.

In the long run, the impact of nurturing gifted learners extends well beyond the campus. These individuals often emerge as thought leaders, innovators, entrepreneurs, and agents of social change. Their achievements contribute to the prestige and legacy of their alma mater, reinforcing the institution's influence in academic and public spheres. Supporting giftedness, therefore, is not only a step toward fulfilling institutional responsibility but also a strategic investment in the future of education and society.

Existing Initiatives and Provisions for Gifted Students in Higher Education

Having explored the concept of giftedness and its various dimensions, it is equally important to examine the provisions that exist to support gifted students in higher education institutes in India. Even in the absence of a Gifted Education Policy, there are various institutions that have introduced several initiatives to support talented students, particularly in research, STEM fields, and interdisciplinary learning. And NEP 2020 outlines some recommendations that will cater to academic and intellectual needs of some gifted students. Here's a closer look at these existing initiatives.

National Fellowship and Scholarship Programmes

Financial and academic support can make a significant difference in the lives of high-achieving students, especially those from underprivileged backgrounds. The following scholarship programmes aim to encourage and sustain excellence in higher education:

- ***Prime Minister's Research Fellowship (PMRF):*** PMRF offers attractive fellowships as well as research grants to PhD scholars in India in the area of Science and Engineering. It's a launchpad for visionary thinkers, daring innovators, and relentless problem-solvers. (<https://www.pmrfin/>)

- ***Kishore Vaigyanik Protsahan Yojana (KVPY) / INSPIRE Programme:*** Originally an independent initiative, KVPY has now merged with the INSPIRE program, offering fellowships to students with exceptional talent in science and research. (<https://dst.gov.in/inspire-scheme-innovation-science-pursuit-inspired-research>)

Initiative at the Association of Indian Universities

Anveshan, The Research Conventions: The Research Division of the Association of Indian Universities (AIU) organises *Anveshan-Student Research Convention* every year to identify and nurture the young talents and gifted researchers and innovators in the Indian Universities at the national level. In these Conventions, Innovative Research Projects from the disciplines of Basic Sciences & Applied Sciences, Engineering and Technology, Agriculture and allied fields, Health Sciences and allied fields, Social Sciences, Humanities, Commerce, Business Management, and Law are invited from the students of HEIs and adjudicated by a group of experts in the field on a well-laid criterion. The best Research Projects are conferred with certificates, awards, Cash Prizes and Gold Medals. From 2025, the international research conventions were initiated. The winners of Anveshan get seats in the best institutes in India and abroad.

AICTE Provisions for Gifted Students

AICTE (All India Council for Technical Education) has provisions in place to support gifted students in India by providing an educational environment that recognises their unique abilities. This means offering more flexible academic programs, personalised mentorship, and opportunities to engage in specialised activities or research. For gifted students, the goal is to create learning experiences that go beyond the usual curriculum, allowing them to explore their passions and talents more deeply. This approach helps them stay challenged and motivated, while also ensuring they have the resources they need to thrive. Ultimately, the aim is to create an inclusive higher education system that not only supports gifted students but also helps them reach their full potential and make a significant impact in their chosen fields. (<https://www.aicte-india.org/content/gifted-child-scheme>)

Besides the supernumerary seats, AICTE offers several initiatives that may benefit gifted, talented, and academically advanced students, particularly in engineering and technology disciplines:

- **Smart India Hackathon** – This is a nationwide competition where students tackle real-world challenges, coming up with innovative tech-based solutions. It provides a great opportunity for bright minds to apply their knowledge, collaborate with peers, and showcase their problem-solving skills. (<https://www.aicte-india.org/Initiatives/smart-india-hackathon>)
- **SWAYAM** – An online learning platform offering free courses across various disciplines, helping students enhance their knowledge beyond the standard curriculum. Gifted students can use it to explore advanced subjects at their own pace and earn certifications from top institutions. (<https://swayam.gov.in/>)
- **Startup Contest** – A platform that encourages students to present their startup ideas and gain support for their entrepreneurial journey. It helps innovative students access resources, networking opportunities, and potential investors to bring their ideas to life. (<https://www.aicte-india.org/Initiatives/startup-contest-2017>)
- **National Education Alliance for Technology (NEAT)** – This initiative integrates AI-based technology solutions to personalise and enhance learning experiences. Academically advanced students can benefit from adaptive learning tools that match their pace and learning style. (<https://neat.aicte-india.org/>)
- **Student Learning Assessment (PARAKH)** – A national-level assessment program designed to help students understand their strengths and areas for improvement. Gifted students can use it as a benchmarking tool to evaluate their skills and further refine their academic and intellectual pursuits. (<https://parakh.aicte.gov.in/>)
- **AICTE Scholarships and Fellowships:** AICTE offers various awards and scholarships to support gifted students. These initiatives are designed to recognize and support the academic excellence and research potential of gifted students, fostering their contributions to technological and societal advancements. (<https://www.aicte-india.org/schemes/students-development-schemes>)
- **IITs:** While Indian Institutes of Technology (IITs) don't have a formal "gifted / talent program", but their rigorous admission standards and focus on research can be considered a setting for identifying and nurturing academically bright students, some of whom may later be identified as gifted students. (<https://www.iitsystem.ac.in/>)
- **NISER and IISERs:** National Institute of Science Education and Research, Bhubaneswar and Indian Institutes of Science Education and Research (IISERs) located in Berhampur, Bhopal, Kolkata, Mohali, Pune, Thiruvananthapuram, and Tirupati may not have a formal gifted education program, but they naturally nurture talented students through the strong focus on research, mentorship, interdisciplinary projects and hands-on experiential learning—perfectly aligning with NEP 2020's vision for supporting high-ability students. Programs like CoESME, iRISE, STEM Ready, and the Summer Student Programme create an intellectually rich environment where curious minds can explore, experiment, and innovate.
- **Indian Statistical Institute (ISI):** ISI provides rigorous academic environments, catering to students with exceptional abilities in science, technology, and mathematics.
- **Centre for Excellence in Basic Sciences (CEBS), University of Mumbai:** In collaboration with the Department of Atomic Energy, this centre nurtures gifted students in fundamental sciences, offering specialised coursework and research exposure. (<https://www.cbs.ac.in/>)
- **JNU, TIFR, and Ashoka University:** These universities emphasize research-oriented learning, offering mentorship programs and interdisciplinary education designed for high-potential students.
- **Sikkim Manipal Institute of Technology:** It offers an admission scheme for gifted students, in accordance with AICTE's provision for gifted and talented students. (<https://smu.edu.in/smu/about-us/ADMISSION-SCHEME-FOR-GIFTED-CHILD.html#:~:text=AICTE%20will%20appoint%20a%20'committee,as%20per%20the%20prevailing%20norms.>)
- **National Board for Higher Mathematics (NBHM):** Set up by the Government of India in 1983 under the Department of Atomic Energy (DAE), it currently grants Postdoctoral fellowships, Ph.D. scholarships, MA/MSc Scholarships for research/education in mathematics, along with a

Provisions at Institutes of National Importance and Some HEIs

Several prestigious institutions in India have developed specialised programs for gifted students, offering advanced coursework, research opportunities, and mentorship:

research project on higher mathematics. (<https://nbhm.dae.gov.in/about.html>)

Provisions in NEP ---2020 for Gifted Students in Higher Education

The National Education Policy (NEP)–2020 marks a significant step toward a more flexible and inclusive academic framework, recognising the need to nurture gifted and talented students. Some key provisions include:

- **Multidisciplinary and Flexible Learning:** NEP 2020 promotes an adaptable curriculum, allowing gifted students to customise their education based on their interests and strengths.
- **Academic Bank of Credits (ABC):** This initiative enables students to accumulate and transfer credits across different institutions, supporting interdisciplinary learning and accelerated education.
- **Research and Innovation-Oriented Learning:** The establishment of the *National Research Foundation (NRF)* and university-led incubation centres encourages institutions to foster research-driven environments.
- **Online and Digital Learning Platforms:** Massive Open Online Courses (MOOCs), AI-driven adaptive learning, and virtual labs provide gifted students with access to advanced knowledge beyond the standard curriculum.
- **Fast-Track and Dual-Degree Programmes:** NEP 2020 supports accelerated learning pathways, enabling high-achieving students to complete their degrees at an advanced pace.
- **Mentorship and Talent Identification Programmes:** The policy emphasizes structured mentorship programs where gifted students can receive guidance from experienced faculty, industry professionals, and researchers.

Way Forward

India's higher education system has made notable strides in supporting gifted students, but there is still much work to be done. While existing initiatives provide valuable opportunities, many gifted individuals remain underserved due to a lack of sufficient structured talent identification programmes and customised learning experiences. To truly nurture these bright minds, institutions must adopt a multi-pronged approach—strengthening policy frameworks, expanding institutional support, and

enhancing mentorship opportunities. By fostering an inclusive and intellectually stimulating environment, Indian universities can empower gifted students to reach their full potential and make meaningful contributions to science, technology, the humanities, and beyond, both nationally and globally.

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The *Amrit Kal*: Nurturing the Contributions of Youth

Droupadi Murmu, Hon'ble President of India, delivered the Convocation Address at the 10th Convocation Ceremony at the Central University of Tamil Nadu, Thiruvavur on September 03, 2025. She said, “*You are part of a society that has contributed to your achievement today. Others have helped you reach here, and so you should help those who need a helping hand. That is how a society progresses and a nation grows. You should be sensitive towards the needs of people and the environment around you. Your strong values and character will not only guide you in making a positive impact but will also help you succeed in every aspect of life.*” Excerpts

I congratulate all the students, especially the medal winners, as well as their parents and teachers on this occasion. For students and their families, it is an unforgettable day. What they have achieved today is the culmination of years of hard work, and it will form the foundation of their careers ahead.

The teachers and administrators, both past and present, of the Central University of Tamil Nadu deserve special appreciation for maintaining high standards of academics and creating a stimulating environment that fosters intellectual curiosity and critical thinking. Similarly, they must be applauded for extending the benefits of learning to a wider segment of society through extension education. I am told that the university has been taking up various issues to raise the awareness level of people in rural areas. This university has been making praiseworthy efforts to widen the net of extension education in rural areas of Tamil Nadu. This is a very good initiative.

Similarly, this university is actively contributing to the comprehensive development of the marginalised sections through initiatives like the Community College and the Dr. Ambedkar Centre for Excellence. Education, after all, must aim to link individual development with social development. Dr. S. Radhakrishnan, a renowned philosopher and one of my distinguished predecessors, put it very beautifully, when he said that literacy is not education; knowledge is not education; but the growth of wisdom, the capacity to look upon others with compassion, that is what is necessary. Whenever I have an opportunity to speak at convocation ceremonies, I emphasise that the education must be oriented towards the benefit of the society. In this context, I will also urge you to collaborate with the industry to make use of science and technology for the larger good of humanity, particularly enriching nature and ecology.

In the 14 years of its existence, this university has come to represent the diversity of India and nurtured talent from all over the country – literally from Ladakh to Lakshadweep. What is more heartening is the fact that the gender ratio of its nearly 3,000 students is tilted in favour of females. Moreover, I was especially delighted to see that girls have won more than two-third of the gold medals today. These are signs of a healthy and inclusive growth of the society. The *Amrit Kal* is going to be shaped by the youth, and I am confident that among the youth, our daughters' contributions are going to make all the difference.

Dear Students, I have been a school teacher. As they say, once a teacher, always a teacher. So I still love to interact with students. Today, I am happy to see the excitement on your faces. You are on the cusp of a new phase in your life. Many of you want to pursue education further, and many plan to start working. You have dreams about your career and about your life ahead. On today's memorable occasion, let me share a few points for you to think over.

Even for those whose formal studies are getting completed today, it is worth remembering that being a student is a lifelong affair. Mahatma Gandhi, for example, remained a student all his life, learning languages like Tamil and Bangla, scriptures like the Gita, and skills like making sandals and spinning of Charkha, and so on. The list is practically endless in his case. Gandhiji remained exceptionally alert and active till his very last day. You should keep the sense of wonder alive and remain curious. This will promote continuous learning. Continuous learning will keep your skills always in demand.

In India, we have great and ancient traditions that sought knowledge for the sake of knowledge. In

today's digital age, you are in the enviable position of having so many learning resources available to you. It is far easier for you to rediscover our rich legacy than it was for any previous generation. This is at the heart of the National Education Policy; it brings together the best of tradition and modernity.

Even to the more practical-minded among you, my advice is: keep learning. In the last couple of decades, the internet revolution has transformed our world in such a way that many new professions which we had never imagined have come up. Artificial Intelligence and Industrial Revolution 4.0, will further change the work culture. In such a dynamic environment, those who can adapt and learn new skills will become leaders of change.

It is also worth being mindful of what it means to be a citizen of this great nation. It is a source of pride and confidence. It also places great responsibilities on you. You are part of a society that has contributed to your achievement today. Others have helped you reach here and so you should help those who need a helping hand. That is how a society progresses and a nation grows.

Your university's stated mission is to build "a strong character and nurture a value-based transparent work ethics". I hope you will extend that ethical aspect from work to the rest of life. That will develop in you the sensitivity, which is what we need today. You should show special concern for those sections of people who are underprivileged or deprived. You should be sensitive towards the needs of people and the environment around you. Your strong values and character will not only guide you in making positive impact but will also help you succeed in every aspect of life.

I once again congratulate all of you, students, teachers and others. To the students, my best wishes for their career and for their role in shaping the future of the nation.

Thank you!



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

CAMPUS NEWS

Outreach Programme on Empowering the Tribal Communities

The one-day programme on 'Empowering the Tribal Communities through Inclusive Programmes' was organised by the Centre for the Study of Social Inclusion, University of Mysore, Karnataka, recently. The event commenced with an Inaugural Address by Dr Siddaraju V G, Director, Centre for the Study of Social Inclusion. Setting the tone for the day, Dr Siddaraju highlighted the critical importance of disseminating accurate and accessible information about government welfare schemes. He spoke extensively about various Central and State government initiatives covering sectors like Education (Scholarships, residential schooling programs, midday meals), Health (Ayushman Bharat, free primary healthcare initiatives), and Livelihood (Skill development missions, Mudra Scheme, microfinance programs for tribal entrepreneurs). Dr Siddaraju emphasised that simply launching schemes was not enough. Without awareness, document readiness, and confidence, marginalised communities remain unable to access the intended benefits. He stressed that the Kottigekaval programme was designed not just to inform, but also to empower participants with procedural clarity, such as: What documents are needed to apply for a welfare scheme? How to enrol under welfare schemes? Whom to approach for land rights under the Forest Rights Act? etc.

One of the most stirring parts of Dr Siddaraju's address was his deep concern about the educational status of tribal children. He revealed that many tribal students drop out after Class 5, which hampers their chances for upward mobility. He urged parents to encourage regular schooling, foster an environment of learning at home, and demand accountability from local schools. A surprising statistic emerged: 40% of the villagers in Kottigekaval lacked Aadhaar Cards, making them invisible to government databases and depriving them of welfare benefits. Parents voiced their frustrations: despite their willingness to educate their children, systemic obstacles kept pushing them back.

Following Dr Siddaraju, Dr Nanjunda, Faculty Member at the Centre, spoke about the role of *Ashram* schools. *Ashram* schools, he explained, were specially designed to provide residential education

close to tribal habitations, create culturally sensitive curricula respecting tribal heritage, and offer a safe environment free from discrimination. Dr Nanjunda stressed the need to upgrade existing *Ashram* schools in Karnataka to meet contemporary educational standards. He proposed, deployment of motivated teachers trained in inclusive education, provision of sports, arts, and vocational training alongside academics, and involvement of tribal elders to preserve indigenous knowledge systems.

Dr Srikanth, Director, Development, Education, Empowerment and Development (DEED) Organisation, took the stage next to highlight the rights dimension. He outlined that apart from welfare schemes, constitutional safeguards for tribal communities must be effectively enforced, reservation policies in education and employment, protection under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, and Access to free legal aid under the Legal Services Authorities Act. Dr Srikanth called for strengthening awareness at the grassroots, pushing for simplified application processes for tribal-specific schemes and building advocacy groups from within the tribal youth population. He concluded, "Empowerment is possible only when rights are known, demanded, and protected."

During the dialogue session, tribal representatives, including Mastamma, Gouramma, Vittal, Nagaraju, Kallurayya, Shivanna, Muniramaiah, Subbamma, and Jayappa, narrated their experiences, hurdles, and aspirations. Many elders lamented that they were not 'invisible by choice', but due to systemic negligence. By creating a space for open dialogue, the programme enabled tribal people to share their lived realities, ranging from challenges in accessing government schemes to systemic barriers such as documentation issues and school dropouts. The programme not only empowered the tribal community of Kottigekaval but also renewed the collective commitment to build a more inclusive and equitable India, where no community is left behind.

International Conference on Advanced Multidisciplinary Research and Innovation

A three-day International Conference on 'Advanced Multidisciplinary Research and Innovation' is being organised by the Centre for

Advanced Multidisciplinary Research and Innovation (CAMRI), Chennai Institute of Technology, from Dec 22-24, 2025 through a hybrid mode. The event aims to bring together leading academicians, researchers, industry professionals, and policymakers from across the globe to foster interdisciplinary collaboration and knowledge exchange. The conference will spotlight how cutting-edge cognitive and smart technologies can address real-world engineering challenges while accelerating progress toward the United Nations Sustainable Development Goals (SDGs). The Key Themes are:

- Cognitive Computing and Artificial Intelligence in Engineering Applications.
- Smart Manufacturing and Intelligent Materials Development.
- Cognitive Robotics, Automation, and Intelligent Systems.
- Biomedical Cognitive Innovations and AI-based Healthcare Solutions.
- Cognitive Infrastructure and Smart Civil Engineering Solutions.
- Data-Driven Renewable Energy Systems and Smart Grids.
- IoT, Edge AI, and Cognitive Communication Networks.
- Machine Learning for Environmental Engineering and Climate Resilience.
- Digital Twin, Cognitive Simulations, and Industry 5.0 Applications.
- AI-Enhanced Sustainability Studies and Green Technologies.

For further details, contact Conference Chair, Dr. S. Raja, Director, Center for Advanced Multidisciplinary Research and Innovation, Chennai Institute of Technology, Chennai-600 069, E-mail: director.camri@citchennai.net. For updates, log on to: <https://www.citchennai.edu.in>

Faculty Development Programme on AI-Driven IoT for Smart and Sustainable Systems

A six-day Faculty Development Programme on 'AI-Driven IoT for Smart and Sustainable Systems' is being organised by the Motilal Nehru National Institute of Technology (MNNIT), Allahabad, from December 01-06, 2025, through online mode. The event is sponsored by the All India Council for Technical Education.

The fusion of Artificial Intelligence (AI) with the Internet of Things (IoT) is transforming how physical systems interact, respond, and evolve. This integration, commonly known as AIoT, enables intelligent automation, real-time decision-making, and context-aware responses across a wide range of applications. From smart cities and industrial automation to precision agriculture and intelligent healthcare, AIoT is revolutionising modern systems to become more sustainable, efficient, and responsive. One of the key enablers of this transformation is edge computing, where AI algorithms are executed closer to the data source, such as sensors or IoT devices, minimising latency and reducing the need for constant cloud communication. This not only improves real-time responsiveness but also supports energy-efficient operations and enhances data privacy. The Topics of the Event are:

- Edge AI for Real-time IoT Decision-making.
- Federated Learning in IoT Environments.
- Secure and Privacy-aware AI Models for IoT.
- AI-powered Predictive Maintenance Using IoT Sensors.
- AI in Smart Cities: Applications in Traffic, Energy, and Waste Management.
- IoT Data Analytics and Visualisation with AI Techniques.
- Integration of AIoT (AI + IoT) in Industry 5.0 and Healthcare.

For further details, contact the Coordinator, Dr. Pragya Dwivedi, Associate Professor, Department of Computer Science and Engineering, Motilal Nehru National Institute of Technology, Allahabad, Prayagraj-211004, Mobile No: 08601850563, E-mail: pragyadwi86@mnnit.ac.in. For updates, log on to: <https://mnnit.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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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. Mujalde, Dipeeka. **Efficacy of pre-emergence and post-emergence herbicides on weed management and yield in wheat.** (Dr. V K Paradkar), Department of Agronomy, Dr B R Ambedkar University of Social Sciences, Indore.

Biotechnology

1. Amit Kumar. **Characterization of diazotrophs from rhizosphere of agricultural crops to improve the wheat growth.** (Dr. Pooja Sharma), Department of Bio-Technology, Maharishi Markandeshwar (Deemed to be University), Ambala.

Forestry

1. Ajay Kumar. **Nursery and field performance of Mycorrhizically tailored seedlings of *Cedrus deodara* (Roxb. ex D. Don) G Don.** (Dr. Ashwani Tapwal), Department of Forest Pathology, Forest Research Institute, Deemed to be University, Dehradun.
2. Elias, Deevena. **Evaluation of health and management of Renuka Wetland: A Ramsar Site, Himachal Pradesh.** (Dr. Tara Chand and Dr. Keely Mills), Department of Forest Ecology and Environment, Forest Research Institute, Deemed to be University, Dehradun.
3. Lekhendra. **Species Diversity of Macro-moths (Lepidoptera: Heterocera) in Uttarakhand: Comparison between tropical moist deciduous Sal forests and moist temperate Ban Oak Forests.** (Dr. Arun Pratap Singh), Department of Forest Entomology, Forest Research Institute, Deemed to be University, Dehradun.
4. Nandy, Rakhi. **Studies on ecology and productivity of *Diospyros melanoxylon* Roxb in Jharkhand.** (Dr. Sanjay Singh), Department of Forest Ecology and Environment, Forest Research Institute, Deemed to be University, Dehradun.
5. Rashid, Mubashir. **Biodiversity study of pteromalid (Hymenoptera: Chalcidoidea) Fauna from Jammu Region.** (Dr. Arvind Kumar and Dr. Shambhavi Yadav), Department of Forest Entomology, Forest Research Institute, Deemed to be University, Dehradun.

6. Ray, Aishwarya. **Taxonomic study of pteromalidae (Hymenoptera: Chalcidoidea) from Odisha, India.** (Dr. Arvind Kumar and Dr. Shambhavi Yadav), Department of Forest Entomology, Forest Research Institute, Deemed to be University, Dehradun.

Horticulture

1. Sarkar, Sahadeb. **Characterization of soil, harvested tea leaves and their effect on manufactured tea: A study on small tea growers of Terai Region.** (Dr. Malay Bhattacharya), Department of Tea Science, University of North Bengal, Darjeeling.

Silviculture

1. Rathod, Digvijaysinh Umedsinh. **Effect of low-cost in-situ soil moisture conservation measures on soil moisture and ground vegetation in chir pine forest.** (Dr. Dinesh Kumar and Dr. Parmanand Kumar), Department of Silviculture, Forest Research Institute, Deemed to be University, Dehradun.
2. Sugandha. **Prolonging storage of *Bahunia variegata* and *Celtis australis* fodder through ensilage.** (Dr. Dinesh Kumar and Dr. Santan Barthwal), Department of Silviculture, Forest Research Institute, Deemed to be University, Dehradun.

BIOLOGICAL SCIENCES

Biochemistry

1. Bhowmick, Samrat. **Study on the effect of sub-lethal exposure of brick-kiln refusals on some toxicological parameters in gills, hepatopancreas and kidneys of *channa punctata* (Bloch, 1793).** (Dr. Prasanta K Choudhury and Dr. Santanu Sarma), Department of Biochemistry, Assam Don Bosco University, Guwahati, Assam.

Biotechnology

1. Datta, Vasudha. **Development of in vitro propagation and genetic transformation protocol for *Eclipta alba* (L) Hassk.** (Dr. Diwakar Aggarwal), Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University), Ambala.

- Sharma, Surya Prakash. **Precise identification of causative micro-organisms in bacterial and fungal culture negative patients of infective Keratitis.** (Dr. Sonal Datta), Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University), Ambala.

Botany

- Ibrahimali, Saiyed Kamartaha. **Assessment of folk and traditional medicinal knowledge in modern era with reference to Unani systems of medicines.** (Prof. Vinay M Raole), Department of Botany, M S University of Baroda, Vadodara.
- Sharma, Jaydeep Jagdishchandra. **Systematic studies of asteraceae members of South Gujarat.** (Dr. P S Nagar), Department of Botany, M S University of Baroda, Vadodara.

Life Science

- Uzma Salim. **Mapping of RNA G-quadruplexes in mirtrons and understanding their biological role.** (Prof. Vivekanandan Perumal), Kusuma School of Biological Sciences, Indian Institute of Technology Delhi, New Delhi.

Microbiology

- Chakraborty, Sambuddha. **Development of bacteriophage-based treatment regimen against biofilm of clinically relevant bacteria.** (Dr. Ashwini Chauhan and Prof. Shaon Ray Chaudhuri), Department of Microbiology, Tripura University, Suryamaninagar.

Zoology

- Sangma, Jakrimchi A. **A study on the role of antimicrobial peptides in the innate immunity of *Eri silk worm philosamia ricini*.** (Dr. PK Choudhury Dr. Bhavna P Baroowa), Department of Zoology, Assam Don Bosco University, Guwahati, Assam.

EARTH SYSTEM SCIENCES

Atmospheric Science

- Chaudhary, Rohit Kumar. **Environmental heat stress vulnerability in India.** (Prof. Sagnik Dey and Prof. Dilip Ganguly), Department of Atmospheric Science, Indian Institute of Technology Delhi, New Delhi.

ENGINEERING SCIENCES

Biomedical Engineering

- Singh, Sonu. **Design and development of drug eluting additively manufactured porous Ti6Al4V implant.** (Prof. Dinesh Kalyansudaram), Centre for Biomedical Engineering, Indian Institute of Technology Delhi, New Delhi.

Chemical Engineering

- Farooqui, Saleem Akhtar. **Hydroconversion of triglycerides to fuel.** (Prof. M Ali Haider and Prof. Ali K Sinha), Department of Chemical Engineering, Indian Institute of Technology Delhi, New Delhi.
- Jindal, Parul. **Synthesis of biopolymer (Polyhydroxyalkanoate) using fungus (fusarium moniliforme) extracted from infected rice plant.** (Dr. D P Tiwari), Department of Chemical Engineering, Deenbandhu Chhotu Ram University of Science and Technology, Murthal.

Civil Engineering

- Das, Kasturima. **Parametric optimization and fabrication of a plastic extruder machine for the manufacturing of building blocks.** (Dr. Girija TR Dr. Bikramjit Goswami), Department of Civil Engineering, Assam Don Bosco University, Guwahati, Assam.
- Shukla, Manish. **Hydrodynamics of interaction between coastal water bodies and open seas: A case study of the Kochi-Vembanad wetland system in Kerala, India.** (Prof. R K Khosa and Prof. K N Jha), Department of Civil Engineering, Indian Institute of Technology Delhi, New Delhi.

Computer Science & Engineering

- Chauhan, Prashant Kumar. **Adaptive authentication system to countermeasure the problem of email security.** (Prof. Apurva Shah), Department of Computer Science & Engineering, M S University of Baroda, Vadodara.
- Guruswamy, Sunantha. **Development of artificial intelligence based algorithms for outcome prediction and analysis of response to treatment using clinical cancer reports.** (Dr. Bobby Sharma Dr. Satishkumar Chavan), Department of Computer Science & Engineering, Assam Don Bosco University, Guwahati, Assam.
- Meesala, Y V Nagesh. **Dynamic and high dimensional clustering with improved evolutionary optimization algorithms.** (Dr. Ajaya Kumar Parida and Dr. Anima Naik), Department of Computer Science and Engineering, Kalanga Institute of Industrial Technology, Bhubaneswar.
- Tejbir Singh. **Preserving security in blockchain-based WSN (BWSN).** (Dr. Rohit Vaid), Department of Computer Science & Engineering, Maharishi Markandeshwar (Deemed to be University), Ambala.

5. Vyas, Ravi Kant. **Develop a framework firewall and intrusion detection for data protection in IoT.** (Prof. Vikas Somani and Dr. Shashi Kant Dargar), Department of Computer Science & Engineering, Sangam University, Bhilwara.
5. Ratnam, Yerlanki Venkata. **Implementation of optimal coding and decoding for underwater communication.** (Dr. B Prabhakara Rao), Department of Electronics & Communication Engineering, Jawaharlal Nehru Technological University, Kakinada.

Electrical & Electronics Engineering

1. Das, Atmabhu. **Design of nanophotonic devices for green energy and environment.** (Dr. Pratap Kumar Panigrahi and Dr. Gopinath Palai), Department of Electrical and Electronics Engineering, GIET University, Gunupur.
2. Kabra, Dinesh. **IOT based solar charge controller with auto adjustable panel using image recognition.** (Prof. R K Somani and Prof. Vinesh Agarwal), Department of Electrical Engineering, Sangam University, Bhilwara.
3. Shaik, Javid Basha. **Performance analysis of graphene based multi-valued logic circuits and through silicon vias.** (Dr. P Venkatramana), Department of Electronics & Communication Engineering, Jawaharlal Nehru Technological University Anantapur, Ananthapuramu.
4. Tripta Kumari. **Performance improvement of MIMO dra for advance wireless applications.** (Prof. Ravi Kumar Gangwar Dr. Raghvendra Kumar Chaudhary), Department of Electronic Engineering, Indian Institute of Technology, Dhanbad.
6. Reddy, K Venkateswara. **Efficient VLSI implementations for neuromorphic computing.** (Dr. N Balaji), Department of Electronics & Communication Engineering, Jawaharlal Nehru Technological University, Kakinada.
7. Saritha Raj, K. **Design and implementation of a capricious digital FIR Filter using Baugh-Wooley multiplier and reversible adder for ECG noise removal in bio-medical applications.** (Dr. P Rajesh Kumar and Dr. M Satyanarayana), Department of Electronics & Communication Engineering, Jawaharlal Nehru Technological University, Kakinada.

Energy Studies

1. Jain, Shubham. **Investigation on versatile cascade latent heat storage system for solar cooking applications.** (Prof. K Ravi Kumar and Prof. Dibakar Rakshit), Department of Energy Science & Engineering, Indian Institute of Technology Delhi, New Delhi.
2. Sharma, Shweta. **Investigation of ECE-produced hydrogen plasmas suitable for large-area applications.** (Prof. Debaprasad Sahu and Prof. Satyanand Kar), Department of Energy Science & Engineering, Indian Institute of Technology Delhi, New Delhi.

Electronics & Communication Engineering

1. Adepu, Ashok Kumar. **Design of low power and high spurious free dynamic range current steering digital to analog converter.** (Dr. N Balaji), Department of Electronics & Communication Engineering, Jawaharlal Nehru Technological University, Kakinada.
2. Anoosha, Chukka. **Radar target echo cancellation using optimized non-periodic interrupted sampling repeater jamming with enhanced meta-heuristic algorithm.** (Dr. B T Krishna), Department of Electronics & Communication Engineering, Jawaharlal Nehru Technological University, Kakinada.
3. Medikonda, Neelima. **Optimized feature selection with ensemble models for enhanced automatic voice spoof detection.** (Dr. I Santi Prabha), Department of Electronics & Communication Engineering, Jawaharlal Nehru Technological University, Kakinada.
4. Mulaparti, Meena Kumari. **Advanced wearable textile antennas for on-body wireless communication applications.** (Dr. U V Ratna Kumari), Department of Electronics & Communication Engineering, Jawaharlal Nehru Technological University, Kakinada.

Mechanical Engineering

1. Dhakar, Atul. **Fault diagnosis of air compressor set up using signal processing and machine learning techniques.** (Dr. Bhagat Singh and Dr. Pankaj Gupta), Department of Mechanical Engineering, Jaypee University of Engineering and Technology, Guna.
2. Pathak, Bibeka Nand. **Studies on high iron containing Al-V-Si alloys.** (Dr. Madhawanand Mishra and Dr. K L Sahoo), Department of Mechanical Engineering, Deenbandhu Chhotu Ram University of Science and Technology, Murthal.

Textile & Apparel Design

1. Dhore, Rajesh Tulshiram. **Design and development of novel positive twist insertion technique for existing yarn spinning setup.** (Dr. V R Sampath), Shri Vaishnav Institute of Science, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore.

MATHEMATICAL SCIENCES

Mathematics

1. Jain, Roosel. **Reliability modeling and cost-benefit analysis of systems comprising automatic power factor controllers.** (Prof. P K Bhatia and Prof. Gulshan Taneja), Department of Mathematics, Deenbandhu Chhotu Ram University of Science and Technology, Murthal.
2. Kavin, R. **Analytical study of nonlinear stochastic evolutionary p-laplace type equations driven by levy noise.** (Prof. Ananta Kumar Majee), Department of Mathematics, Indian Institute of Technology Delhi, New Delhi.
3. Malhotra, Khushboo. **Flow shop scheduling with parallel machines.** (Dr. AK Tripathi), Department of Mathematics, Maharishi Markandeshwar (Deemed to be University), Ambala.
4. Mohd Sadab. **Design and modeling of shear wave propagation in piezoelectric composite structures.** (Prof. Santimoy Kundu), Department of Mathematics and Computing, Indian Institute of Technology, Dhanbad.
5. Naithani, Anjali. **Information based modeling to analyse reliability and other measures for systems with induced draft fans.** (Prof. P K Bhatia and Dr. Bhupender Parashar), Department of Mathematics, Deenbandhu Chhotu Ram University of Science and Technology, Murthal.
6. Thadani, Satish. **A study on applications of graph coloring and predict its mathematical model.** (Dr. Seema Bagora), Shri Vaishnav Institute of Science, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore.

MEDICAL SCIENCES

Homoeopathy

1. Jasmine. **An exploratory study of monitoring the effects of different potency scales during homoeopathic treatment by electrophotonic imaging.** (Dr. Ruchi Biswas), Department of Homeopathy, Tanta University, Sri Ganganagar.

Nursing

1. Parveen, Asmat. **An explorative study to assess the availability, utilization of selected public health-care services with a view to develop need based technological intervention in three selected district hospitals of Kashmir Valley.** (Dr. Kiran Deep), Department of Nursing, Maharishi Markandeshwar (Deemed to be University), Ambala.

Pharmaceutical Science

1. Bagchi, Arnab. **Assessment of phytochemical portrayal and evaluation of antioxidant and antidiabetic potential of an unexplored plant found in North Sikkim Verdure.** (Dr. Bapi Ray Sarkar), Department of Pharmaceutical Technology, University of North Bengal, Darjeeling.
2. Gupta, Ankur. **Quality by design based formulation and characterization of poorly water soluble drug via advanced solubility enhancement techniques.** (Dr. Arvind Sharma and Dr. Kamaljeet), Department of Pharmacy, Career Point University, Hamirpur.
3. Handa, Udit. **Formulation and evaluation of superfluity drug delivery system of BCS-II drug.** (Dr. Anuj Malik Dr. Kumar Guarve), Department of Pharmaceutical Science, Maharishi Markandeshwar (Deemed to be University), Ambala.
4. Manna, Sreejan. **Application of taro (*Colocasia esculenta*) stolon polysaccharide in drug delivery.** (Dr. Gouranga Nandi), Department of Pharmaceutical Technology, University of North Bengal, Darjeeling.
5. Patel, Darshana Naranbhai. **Development of novel lipid based topical formulations for treatment of skin and nail fungal infection.** (Dr. Hetal P Thakkar), Department of Pharmacy, M S University of Baroda, Vadodara.
6. Pulla, Sravanthi. **Design *Invitro* and *Invivo* evaluation of calcium channel blockers loaded hollow microspheres.** (Dr. Kanjarla Narasimha), Department of Pharmacy, Chaitanya (Deemed To Be University), Himayatnagar, Hyderabad.
7. Vineela, Sangu. **Formulation and evaluation of gastro retentive drug delivery systems for some drugs.** (Prof. Puligilla Shankaraiah), Department of Pharmacy, Chaitanya (Deemed To Be University), Himayatnagar, Hyderabad.

PHYSICAL SCIENCES

Chemistry

1. Bhardwaj, Amit. **Plant-mediated green synthesis of metallic nanoparticles for photocatalytic and sorptive applications.** (Dr. Arun Kumar Singh), Department of Chemistry, Maharishi Markandeshwar (Deemed to be University), Ambala.
2. Dubey, Atul Kumar. **Synthesis and characterization of nanoparticles and their application in development of latent fingerprints.** (Dr. Maninder Kaur and Dr. Deepika Bhandari), Department of Chemistry, Alakh Prakash Goyal Shimla University, Shimla.

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Physics

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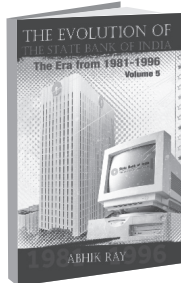
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**Extension of Last Date – Engagement of
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In reference to Vacancy Notification No. AIU/ Admn/Rectt./2024/ dated 04.09.2025 regarding the engagement of *Young Professionals* in AIU, the last date for submission of applications has been extended till **16.10.2025**.

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Sr. No.	Posts	No. of Posts	Subject & Vacancies	Reservation
1	Professor	04	1) Pharmaceutics (01) 2) Pharmaceutical Chemistry (01) 3) Pharmacognosy(01) 4) Pharmacology (01)	Open (01) SC (01), VJ-A (01), OBC (01)
2	Associate Professor	04	1) Pharmaceutics (01) 2) Pharmaceutical Chemistry (01) 3) Pharmacognosy(01) 4) Pharmacology (01)	Open (01) SC (01), VJ-A (01), OBC (01)
3	Assistant Professor	07	1) Pharmaceutics (02) 2) Pharmaceutical Chemistry (02) 3) Pharmacognosy(01) 4) Pharmacology (01) 5) Pharmacy practice (01)	Open (02) SC (01), ST (01) VJ-A (01), OBC (01), SEBC (01)

Note: According to GR dated 25.01.2024 Teaching post reservation for ladies is as follows:

Professor-01, Associate Professor-01, Assistant Professor-01

Educational Qualifications and experience applicable for above posts is as per the norms specified by PCI New Delhi, Govt. of Maharashtra and SRTM University, Nanded.

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1	Principal	1FT	1	-
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Date: 29/09/2025

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Applications are invited for the post of Principal (Granted) to be filled in Azad Mahavidyalaya, AUSA Dist. Latur (Minority Status) run by Hindusthani Education Society, AUSA. Eligible candidates should submit their application along with necessary documents within Fifteen days from the date of publication of the Advertisement by R.P.A.D. only.

Sr. No	Name of post (Designation)	No. of Post	Full Time	Reservation	Granted/ Non-granted
1.	Principal	One (01)	Full Time	Unreserved	Granted

a) Education Qualifications:

- 1) A Master's Degree with a least 55% 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 Universities, College and other institutions of Higher Education.
- 4) A minimum of 10 research publication in peer reviewed or UGC listed Journals.
- 5) A minimum 110 research score as per Appendix II, Table 2 of UGC Regulations 2018.
- 6) Academic Eligibility and other Rules Regulations as per UGC Regulation 18 July 2018 and Govt. Resolution No.Misc-2018/C.R.56/UNI-1 Date 08 March 2019.

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

Salary & Allowances:

Pay Scale shall be given as per the rules of UGC, State Government & Swami Ramanand Teerth Marathwada University, Nanded.

NOTE :

- 1) Prescribed application form is available on the University website (www.srtmun.ac.in)
- 2) No TA/DA will be paid for attending the interview.
- 3) Eligible candidates should submit their application through proper channel.
- 4) Attested Xerox copies of S.S.C. certificates, Degree certificate, Mark sheets etc. should be attached to the application form.
- 5) The original certificates must be provided at the time of interview.
- 6) Selection and appointment will be done as per Minority institution's rules. (Article 30(i) of Indian Constitution).
- 7) The vacant post is under the decision of Hon. High Court, Aurangabad Bench petition No.12051/2015.

Correspondence Address:

The Secretary, Hindustani Education Society, AUSA Dist. Latur (MS) 413520.

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