Monday, February 2, 2026
CHENNAI

THE HINDU

EDUCATIONPLUS

GET THE EDGE Follow us facebook.com/thehindu twitter.com/the_hindu instagram.com/the_hindu

John J. Kennedy

A significant development in Indian higher education has not yet found a place in public discourse. A steady stream of young Ph.D.s, who once dreamed of spending their lives teaching, reading, and thinking, are quietly walking away from universities. Many shift to think-tanks, NGOs, Edtech firms, or corporate research units while others prepare for the civil services. Some others drift into unrelated work, unsure of their next step, but clear about one thing: academia no longer feels like a viable or meaningful future. This slow exit raises a question: why are the people trained to become scholars choosing not to pursue a scholarly career?

Change in character

The answer lies in the changing character of the university. Over the past decade, the institution that once promised intellectual freedom, community, and the luxury of deep thinking has turned into a compliance-heavy and metric-driven workplace. What was once a profession rooted in curiosity has become a maze of checklists, rankings, and deadlines. Young academics are realising that the intellectual life they imagined bears little resemblance to the institutional life they now face.

Nowhere is this more visible than in the way research is treated. In theory, research is the heart of academic life. But, in reality, it has been reduced to an administrative task. Appraisal systems and accreditation demands mean research matters only after it can be counted. A publication is valued not for its argument but for its appearance in a Scopus-indexed journal. A citation counts not because it shapes debate but because it boosts a metric. Young scholars quickly learn that they must publish constantly, whether or not they have something meaningful to say. They chase citation-rich topics, trendy areas, and quick-turnaround journals. They prioritise speed over depth and visibility over substance. All this while managing heavy teaching loads, committee work, mentoring responsibilities, accreditation preparation, and, often, contracts that may or may not be renewed.

The irony is obvious. A system claiming to promote research excellence now encourages scholars to produce superficial, hurried, and formulaic work. The more we try to measure quality, the more we end up distorting it. Metrics now dominate every corner of university life. National Assessment and Accreditation Council (NAAC) scores, National Institutional Ranking Framework (NIRF) rankings, Academic Performance Indicator (API) points, impact factors, citation counts, revenue targets, student satisfaction surveys ... all these numbers govern what faculty do, how they spend their time, and what they prioritise. Metrics were introduced for accountability, but they have grown into an ideology. They determine whether teaching "counts", which activities are "productive", and how academic time should be allocated. Inevitably, teaching suffers. When promotions depend on research and documentation, young teachers often rush through classes so they can return to tasks that earn points.

However, the real crisis for young academics is not workload but precarity. Many early-career faculty work on contractual or ad-hoc appointments, with low pay, no security, and the constant need to reapply. This is a built-in aspect of how institutions operate, relying on a rotating pool of inexpensive teachers. For young scholars, this uncertainty is crippling. It makes long-term research difficult, disrupts personal decisions, and turns an academic career into a gamble.

Emotional cost

There is also an emotional cost that is rarely acknowledged. Many young academics enter the university for the love of ideas, but soon find themselves spending more time uploading documents than reading, writing, or teaching. They seek meaningful engagement, but face endless compliance work; they want to contribute to knowledge, but end up chasing deadlines Bureaucracy slowly drains their enthusiasm. Institutions so consumed by performative activity end up draining the intellectual life out of the very people who sustain them.

This shift matters far beyond individual careers. A country cannot build a knowledge economy if its best minds feel pushed out of the institutions meant to nurture them. Universities cannot claim excellence while treating young scholars as expendable. If India hopes to be an innovation hub or a global academic destination, reform must start with supporting the people who produce knowledge by reducing dependence on crude metrics, providing more stable positions, and offering genuine time and autonomy for research. Ultimately, we must decide whether we want universities that generate documents or ones that generate ideas.

The writer is a former professor and dean, Christ University, Bengaluru.

SCHOLARSHIPS

MynVidya: Myntra Cares Scholarship
An initiative from Myntra
Eligibility: Minimum 60% in Class 12 in any stream and pursuing a full-time graduation course at recognised university and from a family of full-time garment workers or artisans and an annual family income of less than ₹5,00,000.
Rewards: ₹20,000 a year for three years.
Application: Online
Deadline: February 15
www.b4s.in/edge/MVMCSP2

Newcastle University Vice-Chancellor's Excellence Undergraduate Scholarship
Offered by the Newcastle University, the U.K.
Eligibility: International students with an offer of admission for an eligible, full-time UG degree who demonstrate exceptional academic achievement and have achieved grades equivalent to AAB or higher at A-level or their international equivalent.
Rewards: Up to 50% reduction in tuition fees
Application: Online
Deadline: February 26
www.b4s.in/edge/NUVC1

University of Auckland India High Achievers Scholarship
Offered by the University of Auckland, New Zealand.
Eligibility: Indian passport holders living outside New Zealand at the time of application who have received a a conditional or unconditional offer of admission or has enrolled in a full-time PG Diploma, UG, PG or UoA programme.
Rewards: Up to $20,000 towards tuition fees.
Application: Online
Deadline: April 2
www.b4s.in/edge/UAIS3

Courtesy: buddy4study.com

KRUU GRASP 2026

KRUU, in association with the American Society of Mechanical Engineers, has launched the KRUU GRASP 2026, a national AI hackathon.
When: February 6 to February 8
Eligibility: Open to UG and PG students across Engineering, Science, Healthcare, Management, Design, and interdisciplinary programmes.
Themes: AI for Social Good, AI for Education, AI for Medicine, and Applied engineering.
Supported by: The Capital Goods and Strategic Goods and Strategic Skill Council and Information and Communication Technology Academy of Kerala (ICTAK).
Details at https://clic.getkruu.com/

OFF THE EDGE
Nandini Raman

Rate your priorities

Uncertain about your career options? Low on self-confidence? This column may help


GETTY IMAGES/ISTOCK PHOTO

I am in the third year of BSW. How can I balance academics, fieldwork and UPSC prep? Should I focus on completing this degree, pursue an MSW before taking the UPSC or take a gap year? Aishwarya

Dear Aishwarya,

Focus on completing BSW now, as that is a prerequisite for your UPSC exam. Prepare when you have time after the coursework and fieldwork. Fieldwork will help build social awareness and provide exposure, which is extremely useful for UPSC interviews and the Ethics paper. I would recommend delaying the pressure of juggling MSW and UPSC prep. Give yourself a cut-off time for the attempts you want to take to crack your UPSC. Take a gap year if necessary. If this does not work, consider an MSW only if you want a strong academic grounding in social work or plan to work in the policy or NGO sector. You could also start working in NGOs and prep alongside after your BSW.

I am in Class 10 and want to pursue higher education in Maths. However, I do not want to study Physics, Chemistry, and Biology in Classes 11 and 12. What do I do? Palash

Dear Palash,

For higher education programmes such as B.Sc. Maths, B.A. Maths, B.Stat., or B. Math, the only essential subject is Maths at the 10+2 level. Many top Indian institutions allow students to take Maths with any combination of non-Science subjects such as Economics, Computer Science, Statistics, or even Humanities.

Physics, Chemistry, and Biology are only needed if you plan to study Engineering, Medicine, or Pure Sciences. Your focus should be on Maths and one complementary subject (Computer Science, Statistics, Economics) that aligns with your interests.

However, the ideal combination is Maths and Computer Science for the B.Sc. Math, B.Tech (if you change your mind later) or Data Science. You could also consider Maths and Economics if you are keen on mathematical economics, finance, or statistics. This opens doors for B.Sc. Economics, B.Stat, B. Math (Hons). Maths and Statistics are ideal for data analytics, statistics, and actuarial science. It will help prepare for exams like Actuarial, SSC, Banking, and Data Science careers.

Maths and Humanities or Social Science, if offered by your school, can open doors for a B.A. Maths or applied mathematics in Social Sciences.

I chose English Literature as my UPSC optional and have written the Mains, but I find parts of it boring. My true interest lies in Physics (B.Sc. in Physics and Maths, M.Sc. in Electronics). I am conflicted between pursuing Physics, which excites me but demands more effort, and continuing with English Literature, which is easier but less engaging. Syed

Dear Syed,

This is the classic 'comfort vs. passion' conflict. Are you committed to UPSC as your primary career path or do you find a Science/Tech career more luring? Are you willing to invest 3–5 years learning Physics and Maths for long-term satisfaction? Or do you want to pursue UPSC now to complete your current cycle? How important is immediate career progress vs. long-term passion?

You need to think about all this deeply, honestly, and sincerely because this is not just about UPSC but about deciding a long-term career choice that you enjoy and are motivated about. Rate your priorities, your passion, ease, career security and financial stability.

I would recommend that you give UPSC a shot first, given that you have already written Mains. Then decide and evaluate your options if Physics/ Maths is worth a career shift.

I appeared for NEET but did not clear it. I am doing a B.Sc. (Hons) Community Science at a state university. What are the career options for this? Should I switch to Microbiology or Biochemistry for a Master's? Suhani

Dear Suhani,

Clarify your career interest. Do you enjoy field/community work? Then stay in Community Science. Does a lab/research-heavy Science career excite you? Then switch to Microbiology/Biochemistry.

Community Science is an interdisciplinary course that offers exposure to Nutrition and Dietetics, Public Health and Community Development, Human Development/Psychology, Food Technology and Quality Control, and Family and Consumer Sciences. You can consider an M.Sc. in Nutrition, Dietetics, Community Health, or Human Development and look for internships in NGOs, hospitals, health programmes, or the food industry.

Career options include dietician, nutritionist, health educator, community health officer, programme coordinator, research assistant, or in quality control, product development and food analysis.

You can also consider teaching roles by taking the TGT after graduation or PGT after postgraduation. Other options include government exams such as the UPSC, state PSC and health department. Microbiology/Biochemistry offers more lab-based, research-heavy career options in Biotechnology, Pharma, Molecular Biology, and Clinical Research.

Disclaimer: This column is merely a guiding voice and provides advice and suggestions on education and careers.

The writer is a practising counsellor and a trainer. Send your questions to eduplus.thehindu@gmail.com with the subject line Off the Edge.


GETTY IMAGES/ISTOCKPHOTO

From blueprints to boardrooms

Why engineering students need management skills

Phani Madhavi Talasila

Today, technocrats play a pivotal role in shaping the future. From designing smart cities to developing sustainable energy solutions, the journey requires a new breed of engineers equipped with strong management and leadership skills. Higher education has yet to fully acknowledge, embrace, and integrate this significant evolution. The gap between technical expertise and management skills needs to be addressed due to the increasing demand for manpower who can wear multiple hats. How can we do this?

Interdisciplinary courses: Integration of knowledge from multiple domains such as Civil, Mechanical, Electrical, and Computer Engineering and Social Sciences can equip the students with analytical versatility essential to handle complex, real-world problems. Courses such as Technology and Innovation Management equip students with tools to lead product development, manage R&D projects and understand market dynamics. Construction Management prepares students to plan, coordinate, and execute projects.

Environmental/ Green Management ensures that every student, irrespective of their area of study, gains an understanding of sustainable development, ecological balance, and environmental ethics and of sustainable practices, eco-friendly innovations. Sustainable Engineering enables students to integrate sustainability principles and ethical design practices into diverse engineering and non-engineering fields.

Engineering Economics integrates the principles of finance and management to help engineers assess project feasibility, cost, and resource optimisation. Systems Engineering fosters the ability to analyse, design and manage complex systems by blending Mechanical, Electrical, and Software Engineering knowledge. Human-Centred Design and Product Innovation emphasises design thinking and user experience, ensuring solutions meet human needs effectively. Entrepreneurship for Engineers develops business acumen. Business Communication and Leadership Styles and Strategies equip students with essential skills and foster a culture of initiative, innovation, and accountability. By integrating these courses into engineering management education, students gain a comprehensive skill set that blends technical proficiency with leadership, strategy, and creativity.

Experiential learning: Rather than relying solely on theoretical instruction, students should be involved in real-world activities, live projects, and simulations that mirror professional challenges. This enables them apply classroom knowledge to practical scenarios, enhancing a solution-oriented mindset, creativity, and critical thinking. By engaging in project-based learning, leadership simulations, and sustainability-driven initiatives, students gain a strategic and inclusive understanding of engineering management.

Mentorship: Fostering connections between students and industry leaders offers personalised guidance and insight into the multifaceted nature of engineering management and professional development pathways. Learning from those who have successfully transitioned from technical roles to executive positions can inspire and prepare students for their own leadership journeys. Through structured mentor-mentee relationships, students can learn from the experiences of engineers, managers, and entrepreneurs, enabling them to navigate complex technical and Business complexities with confidence.

Beyond individual growth, the structured mentorship programmes cultivate a collaborative culture and enhance professional networks, encouraging students to engage with diverse perspectives and cross-functional teams. By embedding mentorship into Engineering Management education, institutions equip graduates not only to excel in technical roles but also to assume leadership responsibilities.

The writer is a Professor, Department of Project and Construction Management, MIT College of Management and Computer Applications, MIT Art, Design and Technology University, Pune.

Green logistics

Why students need to be trained to manage sustainability in the supply chain processes

GETTY IMAGES/ISTOCKPHOTO

Vijay Kumar

The logistics sector is moving beyond conventional transportation and storage functions and emerging as a discipline driven by sustainability, technology and strategic efficiency. As India moves closer to becoming the world's third-largest economy, green logistics is fast gaining prominence. From electric mobility-enabled delivery networks and solar-powered warehouses to data-driven transport planning, the shift toward sustainable operations is redefining the industry. The transformation will be led largely by how well today's students are trained to manage sustainability in supply chain processes.

Sustainability is at the core of logistics innovation. More than 80% of domestic express freight movement now happens via surface transport supported by better road networks and cleaner fuel systems, while electric vehicle adoption is expanding across first and last-mile deliveries. Express operators are among the largest users of cargo aircraft, with dedicated freighter fleets now operating on digitally optimised air routes. The sector is also gradually adopting sustainable aviation fuels to reduce emissions, making aviation a relevant part of green logistics. Warehouses across India are adopting solar capabilities, packaging waste is being reduced through recyclable models, and route optimisation engines are helping minimise fuel consumption.

Educational pathway

For students, this shift represents an opportunity to build careers in roles that combine technology, operations strategy and environmental responsibility. Students can enter the industry at different academic stages. Fresh graduates from any discipline usually begin in entry-level operational roles such as logistics coordination, warehouse operations or digital process tracking.

Undergraduate degrees in Logistics and Supply Chain Management offer structured learning and allow smoother progression into roles focused on planning and efficiency improvement. Increasingly, postgraduate diplomas and Master's degrees in sustainability-linked logistics are being preferred by organisations looking for professionals who understand ESG standards and clean mobility initiatives.

Aviation professionals also have significant opportunities within logistics. Express operators employ pilots, aircraft engineers, aircraft technicians and loadmasters. As sustainability becomes integral to cargo movement, expertise in aviation supported by supply chain exposure will be increasingly valuable. International programmes in sustainable supply chain and environmental operations, particularly in the U.K., Germany, Singapore and the U.S., provide broader exposure to global sustainability benchmarks and circular logistics practices.

Students from Engineering backgrounds, particularly in the Mechanical, Industrial, and Aviation streams, are well-suited for technical roles such as route optimisation, fleet modernisation, and automation-led transformation.

Focus subjects

Students should focus on subjects related to supply chain management, business operations, transportation systems and analytics to establish conceptual clarity. Familiarity with tools such as warehouse management software, spreadsheet optimisation, and IoT-driven tracking technologies is an advantage. Project assignments focussed on process automation, route performance improvement, or sustainability-driven logistics optimisation reflect a strong industry orientation.

Internships in warehousing, fleet coordination, customer operations or compliance tracking during graduation and post-graduation help students build real-world exposure, improve adaptability and understand ground-level dynamics. Internships also enable students to identify suitable functional areas. Roles in warehouse management, inventory planning, order fulfilment and customer interaction provide practical insight into logistics workflow. Exposure to projects involving last-mile delivery performance, digitisation, compliance tracking or route improvement supports long-term career progression and builds supervisory potential.

Students considering careers in this field should assess their interest in working in fast-paced, technology-enabled sectors. Success requires strong analytical thinking, quick decision-making, resilience under time-sensitive situations, and commitment to sustainability-led transformation. In addition, the ability to collaborate across functions and foresee operational impacts contributes to effective career growth in the sector.

Keep learning

Continuous knowledge building is essential as logistics is adapting rapidly to emerging technologies. Students should engage with industry journals to keep up with best practices. Attending webinars and workshops hosted by the Logistics Sector Skill Council (LSC), the National Skill Development Corporation (NSDC), CII and FICCI helps connect academic learning with market realities. Case studies, campus-industry discussions and expert interviews on areas such as electrification of fleet, reverse logistics and circular economy models encourage innovative thinking and application-based learning.

Today's logistics is influenced by technology, powered by innovation and shaped by environmental responsibility. Professionals are involved in integrating alternative transport energy systems, designing process automation and leveraging AI to improve operational impact. With sectors such as pharmaceuticals, automotive and electronics contributing significantly to the express industry, the need for sustainability-focused supply chain talent will continue to rise.

The writer is the Chief Executive Officer, Express Industry Council of India

GETTY IMAGES/ISTOCKPHOTO

Close the gap

Why Food Science and Technology programmes need an industry connect

Balkumar Marthi

One of the hardest challenges for new nutrition and Food Science and Technology students is the application of nutritional science standards to real-world business environments. While they learn principles of health and evidence-based guidelines, many students graduate without knowing how to effectively advocate for good nutrition at work.

This is because many schools don't teach students how to promote nutrition science while keeping costs in mind, meeting deadlines, and dealing with competition in the market. Without proper preparation, graduates seeking to create healthier products often lack the necessary tools, potentially undermining their nutrition goals.

Significant gap

Academic nutrition education focuses on biochemistry, micronutrient metabolism, dietary guidelines, and empirical research. However, students also need an understanding of business constraints, such as cost structures, supply chain operations, consumer preferences, and regulatory compliance. For example, students learn that reducing sodium and added sugars improves health, a non-negotiable principle in professional practice.

But what about the technical and economic problems that come with reformulation? Such as finding new ingredients, how they change the taste, and how much they cost.

The significant gap between academia and industry arises from insufficient collaboration. While education systems rightly emphasise scientific rigour, evidence-based methods, and regulatory awareness, students also need business knowledge to effectively advocate for nutrition within commercial constraints. The industry needs professionals who will champion nutritional science rather than simply follow business directives. Industry innovation outpaces academic curriculum updates, leaving students uninformed about new technologies or market changes that could facilitate healthier products. Limited collaboration between food companies and educational institutions means students graduate unprepared to be the nutrition advocates that industry and public health truly need.

This disconnect is alarming for students who want to work in marketing, food science, product development, and nutrition. They know the theory, but have a hard time selling health-focused solutions in the workplace. They have to answer questions such as "How can we make food healthier without spending too much money?" or "What changes to the recipe make food healthier while still tasting good?" They need to see these as chances to work together to solve problems, not as choices where nutrition loses.

Taking strategic steps can help bring these two groups closer together. It's important to use real-world examples in business classes and hands-on learning in things like product fortification. When students look at real business decisions that take into account taste, nutrition, and following the rules, they are better prepared for the job market. Industry mentorship and internship programmes help students apply classroom learning to real-world challenges while helping professionals understand emerging perspectives. Guest lectures from food scientists, regulatory experts, and product managers provide authentic industry insights into challenges, limitations, and commercial decision-making factors. Regulatory science, food laws, and business basics should be part of educational paths, as should administrative processes, patents in food innovation, and market research.

What is needed

The current gap between industry and academia represents an opportunity. Students learning both nutritional science and business problem-solving can drive decisions that lead to healthier products, better nutrition policies, and improved public education. Companies successfully delivering truly healthy, convenient options naturally achieve profitability. Rather than compromising nutrition for profit, businesses should lead in nutrition science for long-term success.

What is required is to teach students to champion nutritional science within commercial environments and not accept compromises. Better education shows that scientific integrity and commercial success aren't competing goals but interdependent ones. This is nutrition education's next frontier.

The writer is President of Nutrify Today Academy.

Only an aid

Can we reap the benefits of AI without succumbing to its pitfalls?

THINK
Aruna Sankaranarayanan

GETTY IMAGES/ISTOCKPHOTO

For better and worse, AI is upending education. While bots can accelerate and enhance learning, they can also supplant deep engagement and reflection. How can educators help students reap the pluses of AI without succumbing to its pitfalls? At what stage of the learning process should AI be introduced?

In an article in *Harvard Magazine*, Olivia Farrar reports on a conference at the university where professors shared thoughts on how they were integrating AI while trying to safeguard student learning and authenticity. Teddy Svoronos, a lecturer at the Harvard Kennedy School, recommends a "traffic light" model for AI usage. Green indicates that AI can be used sans restrictions, yellow suggests limited access, and red indicates when AI is banned.

When introducing a topic, tasks are usually marked in red so that students first wrestle with concepts on their own. In the exploration stage, students may be allowed full access to AI to both broaden and deepen their understanding. They are asked to reflect on questions like how AI change my understanding, or what aspects AI overlooks or does not address adequately. For one assignment, students had to engage in a "Socratic dialogue" with a bot that was trained on the course content. However, the conversation was evaluated by the professor rather than the bot.

Tari Tan, a lecturer in neurobiology, asks students to first make notes on a lesson and then compare their notes to what ChatGPT produces for the same content. During this exercise, students analyse the "quality of their prompts" and how biases may impact the process. By doing this, students realise that, while AI can be a useful tool, it is not an "infallible source of information."

Depends on the use

In an article in *Psyche*, Nick Kabrel avers that AI, like any tool, is not inherently a boon or bane, but depends greatly on how it is deployed. Over-dependence and mindless use can indeed jeopardise our cognitive capacities. He cites research that shows that students who depended on AI more had poorer critical reasoning skills. Another study revealed that, when students used AI to help them write an essay, they didn't remember what they had produced a few minutes after doing the assignment.

To avoid these pitfalls, Kabrel recommends that you engage with the bot more deliberatively and strategically. First, you need to identify your long-term goals as a learner or a professional in a particular field. If you want to become a design thinking consultant, for example, you need to be able to ideate and generate creative ideas on your own. If you use a bot to come up with designs before engaging in the hard work yourself, you will not flex your creative muscles, and are more likely to be replaced by a bot in the future. Don't be lured by the short-term gains of saving time or scoring better grades on an assignment.

Kabrel recommends a sandwich approach when using AI. Always come up with your own thoughts first. Then you may ask AI to "critique your work," to suggest alternative viewpoints or find lacunae in your arguments. Finally, you need to evaluate the suggestions given by AI and decide which ones strengthen your work. This way, your learning is enhanced and not hampered by AI. Most importantly, don't believe everything AI says. Know that it can hallucinate and outright lie. Double-check the sources it cites, as it is known to fabricate citations.

You may also use AI like a tutor who pushes the envelope of your thinking. Kabrel calls this the non-directive mode, where you ask the bot to flag potential flaws in your reasoning or to highlight where you have made a mistake in your problem-solving, without giving out the answers. This way, you still have to do the hard work of figuring out what's wrong and fix the errors.

The writer is visiting faculty at the School of Education, Azim Premji University, Bengaluru, and the co-author of Bee-Witched.

A forensic upgrade

Why simulation learning and STEM principles are essential in Forensic Science courses

Anurag Gupta

GETTY IMAGES/ISTOCKPHOTO

From fingerprint dusting to DNA decoding, Forensic Science has long fascinated the public imagination. But beyond the drama of TV crime labs lies a demanding discipline that relies on rigorous scientific training and practical skills. As India's education landscape evolves, there's a growing need to make forensic learning more hands-on, technology-driven, and aligned with the realities of modern crime.

Tech-savvy criminals

The new-age criminal is often tech-savvy: using AI, encryption, or synthetic media to conceal identity or distort truth. In such a landscape, forensic experts can no longer depend solely on traditional methods like fingerprinting or blood-sample analysis. This evolution demands an equally strong transformation in education that prepares students not just to understand theory but to apply it effectively in fast-changing, tech-driven environments.

Most Forensic Science courses still rely heavily on classroom lectures and static lab demonstrations. But, they often fail to capture the unpredictability of real investigations. A crime scene is rarely neat; evidence may be contaminated, timelines unclear, and emotions high. To help students prepare for such conditions, simulation-based learning and STEM education can play a crucial role. Through VR and AI-powered simulations, students can now walk through digital crime scenes, collect virtual evidence, analyse samples, and even test hypotheses, from the safety of a classroom.

Simulation learning

Simulation learning creates realistic scenarios where students learn by doing. Imagine donning a VR headset and stepping into a recreated murder scene. Students can examine objects, capture photographic evidence, or identify possible clues without the risks or costs of physical set-ups.

STEM principles can transform how students learn forensic science. Science explains the biological and chemical principles behind fingerprinting or DNA analysis. Technology enables faster data processing and image reconstruction. Engineering introduces precision instruments and devices that simplify evidence gathering. Maths ensures accuracy in studying patterns, probabilities, and timelines. When combined, these disciplines help students move beyond rote learning and begin thinking like investigators.

Instead of passively listening to lectures, students can virtually enter crime scenes, identify and preserve evidence, and use AI-based platforms to find correlations between clues. They can experiment with robotic kits to design simple investigative tools or use data analysis software to study behavioural or digital patterns that point toward motives and suspects. This builds not just technical know-how but also essential soft skills like confidence, teamwork, and critical thinking.

Building a fully equipped forensic lab requires significant investment, a challenge for many smaller institutions. However, digital and simulation-based tools help bridge this gap. Virtual labs and cloud-based software now allow students from even remote colleges to access high-quality, interactive training.

Reimagining forensic education through simulation and STEM is not merely an upgrade in teaching tools. It's a fundamental shift that replaces rote memorisation with exploration, and passive learning with participation. When education becomes immersive, students don't just study forensic science; they experience it. They become analytical thinkers, effective collaborators, and responsible professionals ready to meet the challenges of an evolving world.

The writer is the co-founder of STEMROBO