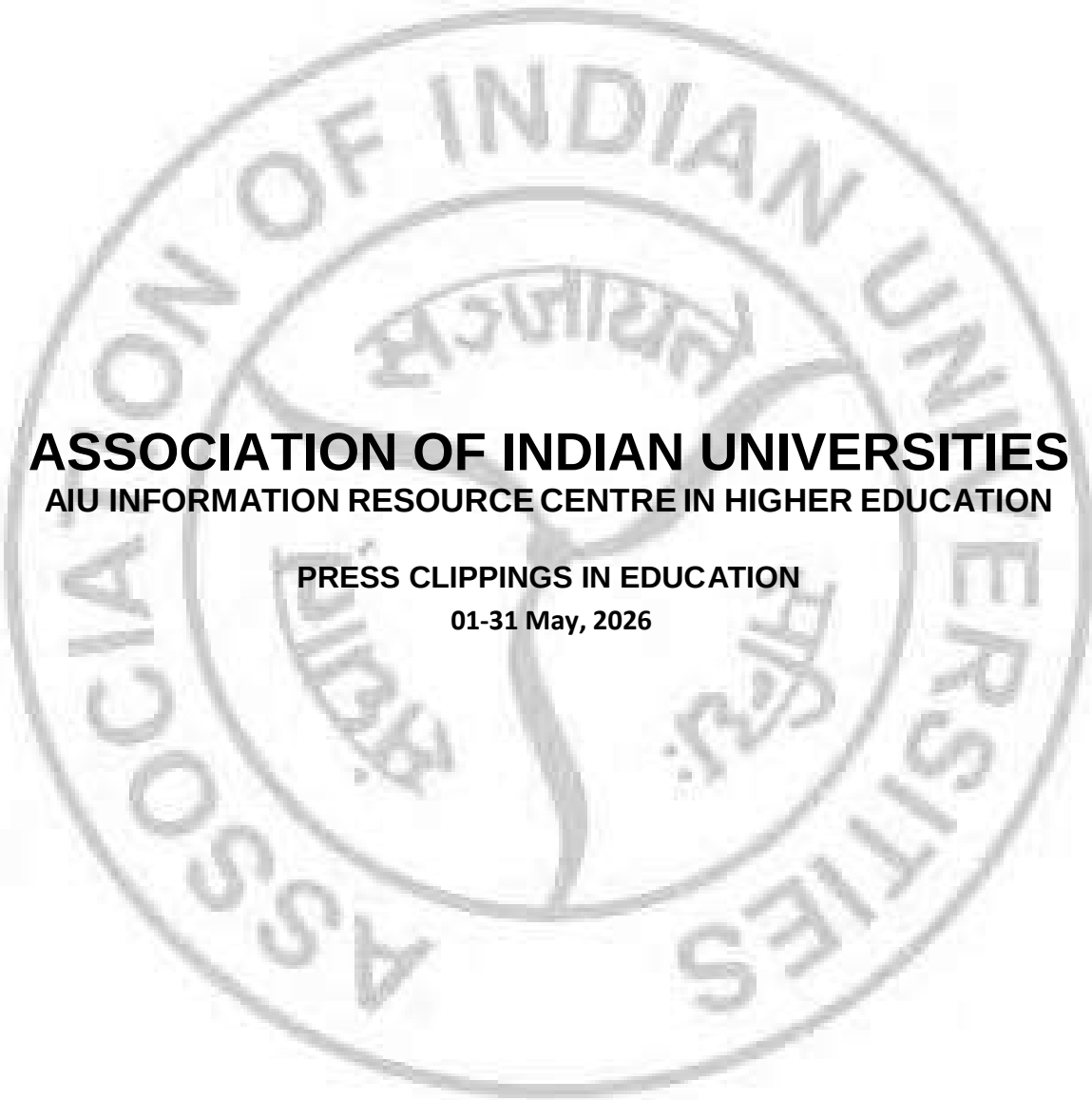




ASSOCIATION OF INDIAN UNIVERSITIES

AIU INFORMATION RESOURCE CENTRE IN HIGHER EDUCATION

PRESS CLIPPINGS IN EDUCATION

01-31 May, 2026

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REIMAGINING CLASSROOMS

AI can complement education, not replace it

In an age of disruption, educators must re-emerge as facilitators of critical thinking and meaningful learning

**MUKTA KULKARNI AND
RISHIKESHA T KRISHNAN**

A few months ago, two different groups of MBA students came to one of us with the same curiosity. They wanted to study how AI is changing higher education. Big question. Bigger assumptions. In one of the very first conversations, one group said something that seemed unsettling. Degrees may not matter anymore, they said. Professors may become irrelevant.

By the end of the term, after much back-and-forth, a few arguments, surveys, interviews, and readings, they concluded that degrees are not disappearing anytime soon. And professors? Not irrelevant. But their role must change.

Around the same time, the other one among us got invited to podcasts and public forums. And the questions were always some version of the same thing. Are degrees losing value? Is AI replacing professors? Over time, these conversations made us pause and ask: What is a higher education degree really supposed to do for the student? And what, then, is the role of a professor?

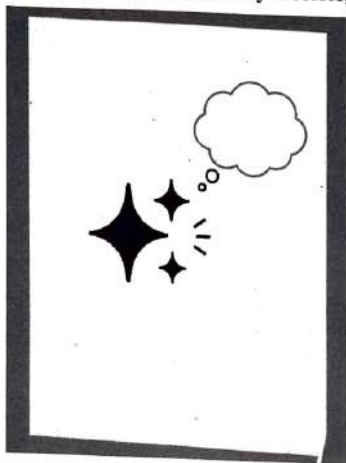
When people say degrees are becoming less useful, they are usually working with a very specific idea of education. In their minds, education is about knowledge and skills. What you know. What you can do. Fair enough. But that is also incomplete. Because education has never been and never will be just that. It is also about character. Values. Civic awareness. Responsibility. Empathy. Self-discipline. In a world increasingly mediated by technology, these things don't become less important. They become more important.

Education is also about learning how to live with other people. Not just next to them, but with them. Working together. Disagreeing without breaking things. Respecting differences. Holding a group together even when it would be easier to walk away. This is social integration. And it matters. For jobs, yes. But also for life.

A degree alone does not make some-

one ready. Not for work. Not for life. It is the ecosystem around it that does the heavy lifting. Student clubs. Competitions. Festivals. Group projects. The late-night arguments. The wins. The disappointments. This is where skills are tested, formed, and reshaped. This is where people learn how to deal with other people – through collaboration, through conflict, through camaraderie. Because at the end of the day, we're wired to be social, and education strengthens that.

And somewhere in the middle of all this stands the professor. A good professor is not just someone who walks into a room, runs through slides, and leaves. That version is already obsolete,



AI or not. A good professor is closer to a catalyst. They make things happen without being the centre of anything. They connect ideas to real life. They ask questions that are slightly uncomfortable – the kind that stay with you longer than the answers. They don't hand out neat conclusions; they leave you with better questions, and the ability to keep asking them. And in an age of AI, their role matters even more: not to outsource thinking, but to keep that muscle in use, to make sure students don't lose the habit of thinking for themselves.

They also shape the room in ways hard to replace – whether it feels safe to speak up, to disagree, to be wrong, and to try again. They influence whether one voice dominates or many voices find space. These things don't show up on a syllabus, but they define learning. And at its core, learning isn't just about absorbing information – it's about curiosity, about sparking creativity and ingenuity.

Often, their impact spills outside the classroom. A nudge towards a competition. A recommendation letter that opens a door. A conversation that changes how a student sees herself. So what do we do now, as professors, in a world where AI can explain concepts faster and sometimes more clearly than we can? We can design the room so that thinking actually happens.

Thinking, clear and visible

AI can deliver content. Good. Let it. Use it. Our role shifts to creating experiences. Asking harder questions instead of giving cleaner answers. Bringing in messy, real-world problems that don't have obvious solutions. Creating moments where students have to take a stand, not just submit something on time. Making space for disagreement. For collaboration. For failure that teaches something.

It also means paying attention to the human side of learning. Who is speaking? Who is silent? Who is trying? Who is coasting? And why. These are things AI cannot see. Not yet.

The problem in classrooms is no longer a lack of information. It is sameness. When many students can produce similar, polished answers using AI, the task itself must change. We need more open-ended questions. Assignments tied to local realities. Personal interpretations. The goal is not to avoid AI. It is to push students beyond what AI can generate.

We also need to teach students how to use AI well. Ask them to compare AI-generated responses. To question them. To find inconsistencies. To decide what to trust and why. Because a skill now is not finding answers. It is judging them. And perhaps most importantly, we need to rethink what we evaluate. If the final output can be generated or heavily assisted by AI, the output alone is not enough. We need to look at the process. How did you get here? What did you reject? What did you miss? What would you do differently? Make thinking visible again.

But then, wasn't that always the point? To make students think. So AI is not a disruption of our purpose. It is a reminder of our purpose as educators. A powerful tool. It is changing our classrooms. But it will not erase them.

(Mukta is Dean – Programmes, IIM Bangalore; Rishikesha is former director, IIM Bangalore, and Professor of Strategy)

May is here and the Board exam results are out. Your phone is buzzing with calls from relatives and your parents are fielding calls from people you barely remember. Everyone wants to know how you did. Before you answer that, can we pause for a moment? Not to avoid the question, but to ask a better one: what is a result, really?

Think of it like a milestone on a highway. It tells you where you are right now, not where you are going; definitely not who you are. When you see a board that says 500 km to Chennai, it is just a marker. It does not tell you if Chennai is even where you want to go. What matters is what you do when you reach it.

Clues to yourself

If you did well in the exam, enjoy it. But do not stop there. Did you find your own way of understanding things? Did you stay consistent when it got tiring? Was there a subject you genuinely enjoyed? These are clues, not just about exams, but about you.

Each of us has what I like to call a power zone. It is that space where the way your mind naturally works meets something the world actually needs. Some people make complicated things simple without trying. Some carry 10 moving parts in their head without dropping any. Some are the person everyone calls when a conflict needs sort-



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Beyond the marksheet

As board exam results season begins,
an educator reflects on what marks mean
and how to deal with success and failure

ing. These are not soft skills. These are the engines that run careers and lives.

However, if you did not do well, stay with me. An exam you did not clear is not a wall. It is a question: what happened here? Not "am I a failure?" Because that is a story you are telling yourself. Instead, ask

"What did this exam expect from me? Where did I fall short?" Was it time-management? A gap in understanding? Anxiety taking over? Each has a different answer.

Own the win and the miss

Panic will not help you find it, but an honest question

situation, you give away your ability to change things. The gap it shows will stay until you are willing to look at it.

If success goes to your head, it makes you careless. If failure goes to your heart, it makes you shrink. What you need is for both to reach your mind. However, be careful of quick fixes.

After the results are declared, there will be a lot of advice: do a course. Take a certification. Try something else. Some of this may genuinely help. But, sometimes, it is just a way to avoid a difficult question. If you move on without understanding why you struggled, the same pattern will repeat itself. The real question is not just "what next?" but "what am I building towards?"

Here is something we do not talk about enough. Many people go through life without asking what they are good at. It is easier to compare marks, colleges, placements. But that is someone else's measure, not yours. What comes naturally to you? What do you enjoy? What makes you lose track of time? If you do not know yet, it is okay. Look at where the world is heading, then look at what you are drawn to. Where those two meet is a good place to begin. You do not need perfect clarity. You just need direction.

A word to parents. Your child's result is not your report card. When we make it about our own image, we add to the pressure they are already carrying. What they need is someone who can stay calm and say "this is one moment. I see you beyond this."

You know your score. Ask yourself what it is telling you and what it is not. The people who go on to do meaningful things are not always the ones with the highest marks. They are the ones who learned to understand themselves and keep moving forward, through both success and failure.

That confidence does not come from marks. It builds when you choose honesty over excuses and curiosity over comparison. May is a good month to begin.

The writer is Junior Faculty - Organisation Behaviour and Human Resource at Great Lakes Institute of Management, Chennai.

SCHOLARSHIPS

Sports Global Excellence Scholarship

Offered by the University of Gloucestershire, the U.K.
Eligibility: Open to international self-funded fee-paying students, who can cover 100% of their tuition fees and are enrolled in a full-time UG or PG taught degree programme and can demonstrate performance at the required level in their respective sports categories.

Rewards: Waiver of up to £7,500

Application: Online

Deadline: May 31

www.b4s.in/edge/SGSE2

King's College London Vice-Chancellor's Awards

Offered by the King's College London, the U.K.
Eligibility: Open to domiciled Indian students pursuing full-time, on-campus postgraduate taught degree under one of the specified faculties.

Rewards: £5,000

reduction in fees

Application: Online

Deadline: May 31

www.b4s.in/edge/KCLV1

Nottingham Trent University International Scholarships

Offered by the Nottingham Trent University, the U.K.
Eligibility: Open to international students seeking enrolment in the first year of an eligible UG or PG programme or pursuing second/ third year of a UG course in September 2026.

Rewards: Fee waivers

Application: Online

Deadline: June 24

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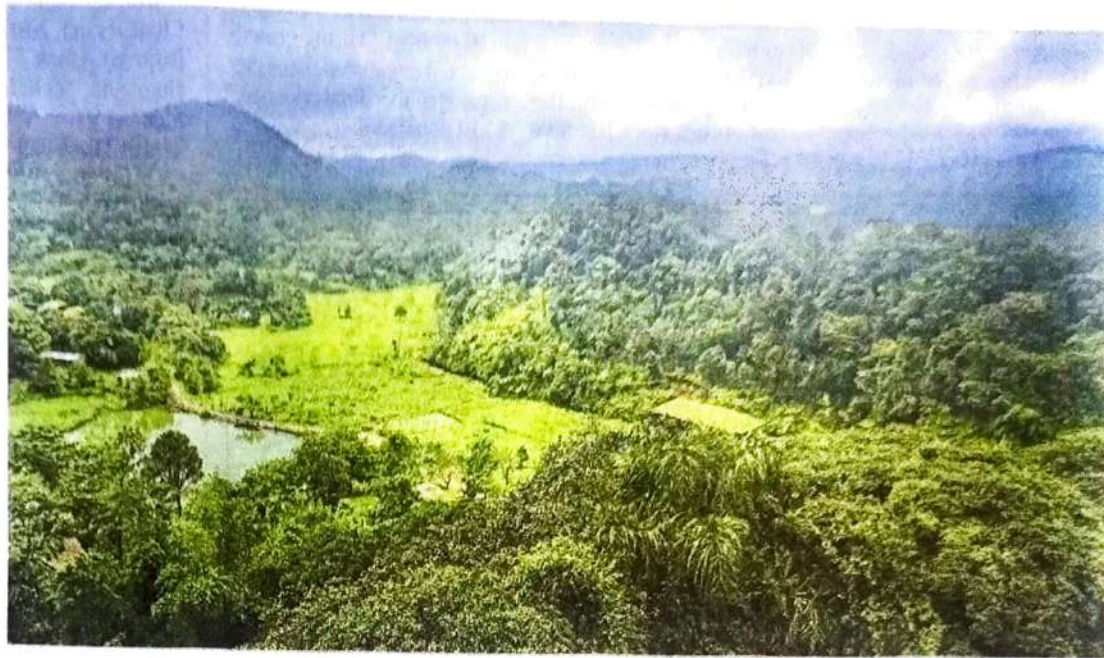
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Exploring green studies

Environmental education is becoming a mainstream subject with job options on the rise in the sustainability sector, writes Vijay Prakash Srivastava



For decades, mankind has exploited nature and caused enough damage to it. Now, for a decade or so, concern about environmental loss has become more visible. Today, individuals, groups, and activists do their bit to nurture and shape the environment in a desirable way. Expanding environmental education can boost that.

Environmental education as an academic discipline has existed for a long time. However, this was hardly considered a mainstream subject. Now is the time to reevaluate the value of this education and make young people aware of the opportunities it offers.

Environmental education is unique in its various dimensions. Some are described below:

■ **Environmental science:** This popular subject helps students learn about forests, water, food, minerals, and energy resources available in nature, as well as biodiversity and the need to conserve it. Concepts of the carbon footprint, carbon credits, and clean development practices are covered in this course. Environmental impact assessment of the extraction and use of land/mineral/water resources, as well as disaster management, is studied in this science.

Environmental science can be studied as a full-fledged subject at the undergraduate level. BSc and MSc courses are widely available at universities and their affiliated colleges, with some engineering institutes also offering them. MSc in Environmental Science is open to students who have completed

a BSc in physics, chemistry, biology, or mathematics. B.E. and B.Tech students are also considered eligible.

■ **Environmental engineering:** Environmental engineering focuses on developing and applying tools to mitigate adverse environmental impacts, protect ecosystems, and improve environmental quality. Environmental engineers work to improve public health by developing technologies for recycling, waste disposal and pollution control. They are key to creating solutions for clean drinking water, waste recycling, rain harvesting and renewable energy sources.

Courses in environmental engineering are available at engineering and technological institutions, though not all of these offer this branch. The good thing is that many IITs and NITs offer B.Tech, M.Tech, and integrated programmes in this branch of engineering. For example, IIT Bombay offers B.Tech-M.Tech (dual degree), M.Tech, M.Tech-PhD, and PhD programmes in environmental engineering.

■ **Environmental economics:** A sub-discipline of economics, environmental economics examines the effects of economic and population growth on the environment and how climate change affects economies. The subject provides guidance on estimating the costs and benefits of different environmental actions. Projects involving the cutting of trees, the displacement of people, etc., have to be evaluated in terms of the economic costs.

Environmental economics can be studied at prestigious institutes such as the Madras School of Economics, IIT Roorkee, and the TERI School of Advanced Studies. Economics of Climate Change is offered as an elective in the MSc Economics programme at Dr B R Ambedkar School of Economics, University of Bengaluru. Indira Gandhi Institute of Development Research has a Master of Science in Energy, Environment and Climate Change.

■ **Environmental sociology:** This is a subfield of sociology that studies the interactions between societies and their natural surroundings, including the environment. It seeks to understand how social structures, cultural norms, and human behaviours impact the environment, and how, in turn, environmental changes and pollution affect societies.

In India, environmental sociology is mostly offered as an elective paper or specialisation in MA Sociology programmes, though a number of foreign universities offer master's programmes in the subject.

■ **Environmental law/policy:** Environmental law courses cover environmental governance in national and international contexts; trade and environment; the right to a healthy environment as a human right; multilateral environmental agreements and dispute settlement mechanisms; climate change policy; urbanisation/tourism and the environment; the National Green Tribunal and its powers, etc.

India has a network of law universities, a few of which offer courses or specialisations in environmental law. Maharashtra National Law University, Mumbai, conducts a Postgraduate Diploma in Environmental Law. The Worldwide Fund for Nature-India and the National Law University, Delhi, jointly offer a Postgraduate Diploma in Environmental Law and Policy.

In recent years, many IIMs, IITs, and other bodies have launched master's programmes in Public Policy that also cover environmental policy.

An MA in Environment and Development by Dr B R Ambedkar University, Delhi, may be considered by interested students. The websites of TERI and the Centre for Environmental Health and Safety may be consulted to learn about various useful courses.

Based on the course undertaken by the students, they may apply for suitable career opportunities. Like courses, work opportunities are also varied. Roles exist in pollution control, waste management, policymaking, consulting, compliance, climate change, and disaster management.

Manufacturing units, mining companies, engineering companies, public and private sector organisations, non-governmental organisations, international agencies, big consulting firms and regulatory bodies have requirements for environmental experts.

(The author is a human resource development professional)

A student's guide to finding part-time job

BHIMA RAO

Every student who wants to take up a part-time job will have initial hesitation, shyness, an inferiority complex and a big fear is that they will not get a job without work experience. In reality, all part-time jobs can be done with little training or by gaining exposure. It is important to have interest, passion, zeal, the ability to learn, and a positive mindset. Students should prepare to enter the job market systematically and go the extra mile to secure the plentiful jobs available.

In general, part-time jobs do not require high qualifications or the skills of a scientist, doctor, or lawyer. Most part-time jobs are doable, e.g., delivery boy or girl, hotel waiter, kitchen assistant, receptionist or attendant. However, certain jobs like graphic design, content writing, video editing, design, coding, or digital marketing will require brief on-

the-job training or short-term training courses.

Many ways

Finding a part-time job is very easy, but sometimes it is very tough. It all depends on where the students live and the opportunities available there. In major cities, there will be plenty of opportunities in well-developed areas. A good number of part-time jobs will be available in areas with plenty of commercial activity or industries. However, finding the most suitable high-salary jobs requires a mix of targeted search strategies, optimised personal contacts, a proactive approach, and the use of local and digital networks. Below are a few practical tips to find part-time jobs.

■ **Define your priorities and constraints:** how many hours you can work daily and per week, your preferred schedule (evenings, mornings, or weekends), and your commute radius (distance from



the workplace). Keen to work remote-only, or ready to work in an unorganised sector (retail stores or hotels, etc.), or organised sectors (BPO, Hospitals, MSMEs, etc), expected wage per day, work duration (two-four hours or full-time in one shift or seasonal vs ongoing), Job skill levels required and preferred industry type. Be prepared to take up a particular job or jobs, or be ready to take up any job that comes my way.

■ **Prepare to enter the job market:** Prepare a short résumé tailored to part-time roles, emphasising relevant, recent experience and availability. Two-line elevator pitch summarising what you can do, hours available, flexibility and highlight your top skills and strengths.

■ **Start applying to jobs:** Send resumes by email and to all WhatsApp contacts, Facebook. Send resumes to specific part-time job portals and local job groups, if any, and start applying to poster advertisements. Target local businesses: cafes, retail stores, gyms, tutoring centres, care homes, and delivery services. Visit in person during off-peak hours with your résumé to find out about job availability.

■ **Apply directly to employers:** Apply on company careers pages for chains (Café Coffee Day, Starbucks, McDonald's, Pizza Hut, Kentucky Fried Chicken, local Malls/supermarkets, Petrol bunks). More often, they prefer part-time and locals.

Send cold emails to local small businesses, MSMEs, restaurants, hospitals/clinics, and event management companies that offer very specific short-term jobs on weekends, holidays, or evening shifts.

■ **Network strategically:** Tell friends, family, neighbours, and professional contacts about your availability and the type of work you want to do. Attend community events or industry meetups; mention you're available for part-time assignments. Use Naukri and LinkedIn; update the headline to "available for part-time" and post a brief profile highlighting strengths, skills, and availability. Contact local recruiters/ job consultants.

■ **Tapping community resources:** It is very rare for universities and colleges to offer part-time jobs to students on campus. Still, one can try for part-time campus jobs, research assistant roles, and tutoring. Sometimes, religious or community centres and NGOs need part-time help,

paid volunteers, or interns. One can also find market survey jobs, which are low-paying but immediately available during certain seasons. Join for event-based work; festivals, marriage functions, sports and summer camps.

■ **Staffing firms and outsourcing agencies:** Look for jobs, both part-time and full-time, in admin, warehouse, and security services. Speciality staffing for hospitality, healthcare, or IT can offer part-time contract assignments.

Finally, keep an eye on newspaper advertisements and job portals. Watch all national and local newspapers regularly, including local/regional newspapers. Scout suitable jobs in job portals or LinkedIn groups.

Next part: How to apply for part-time jobs

(The author is a human resource adviser)

(Mail us: dheducation@deccanherald.co.in)

CLASS ACT

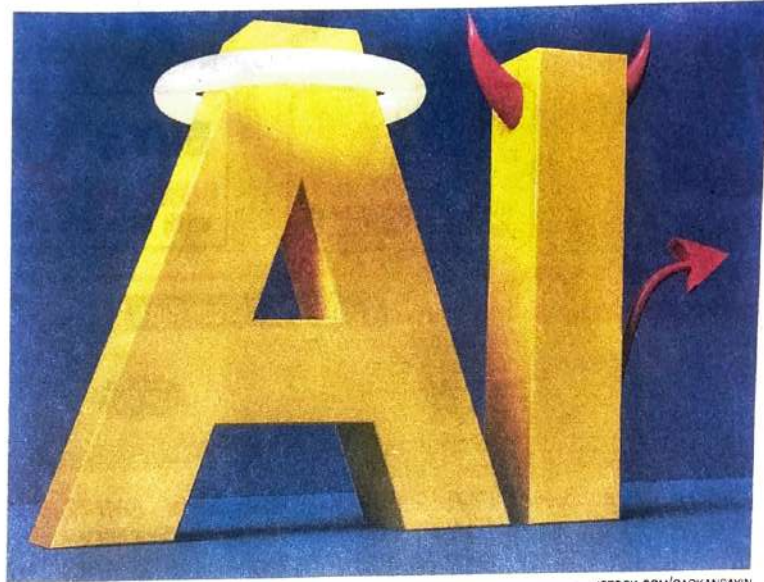
Learning about the machine

Things about AI the youth should know. **Debabratee Dhar** asks an expert

At IIT-Kharagpur, they teach a course called AI and Ethics. The instructor is Animesh Mukherjee whose research has tackled some of the pressing challenges in AI ethics, from bias mitigation in machine learning models to the safety and reliability of AI-driven platforms. The reason for teaching such a course to would-be-engineers is this, according to Mukherjee. "Using AI is the need of the hour. Previously, AI was confined to the realms of research. Now that AI has become a commodity and is widely used, there could be good and inadvertent consequences," he says. As per the course outline, there are no books, though there is a reading list in case students want to refer to it. Should AI and ethics be taught in schools as well? Says Mukherjee, "If it is, it should be structured, practical and intellectually honest about trade-offs. It should address questions like, 'Should I trust AI to help with homework?' or 'Is it okay to use AI in exams?'" Here, Mukherjee answers questions about issues he feels the youth should be aware of. Excerpts:

Q Can AI systems be made free from bias in the real world? I am asking about prompts of e-commerce websites or search engine results.

We can see inadvertent consequences across platforms, be it social media or e-commerce. That's because we do not know what kind of AI algorithm they operate under. How the various shopping platforms prompt items to buyers, some brands over others, it's all very opaque. Such algorithms that we cannot "see" (do not have access to) are called black box algorithms. The algorithms that we can "see" are called white box, and it is possible to develop a fair algorithm for them. And many researchers and practitioners are developing



ISTOCK.COM/CAGKAN SAYIN

such algorithms.

Q What about the facial recognition bias in AI systems based on Western datasets?

In law enforcement, facial recognition is a very common tool. Surveillance cameras are used for capturing these images. In case of a false positive, there is a massive social repercussion. We read about this case where an elderly gentleman went to a shopping mall and came back home without buying anything. He was captured in the mall's CCTV footage. Later, in connection with a case of shoplifting, the police came to his house and accused him. It was done on the basis of face-matching through AI datasets. The police got that data from the CCTV footage, and based on that, he was arrested. And then this man had to go through a trial to prove his innocence. In the West, these models are trained on their own population and yet, such biases exist. Now, if we used these models in our country, where ethnicity, facial features,

complexion, everything differs, there would be even more cases of such false matches.

Q There is also some talk of AI-governance.

Governance is done through laid-out rules and policies. These policies have to be fed into the computer. When policies are operationalised, there are several interpretations, and AI will behave differently for each policy. One cannot possibly feed all permutations and combinations of interpretations to the AI. Besides, AI only understands algorithms, while an interpretation requires a more human approach, which also requires philosophising. Accountability becomes a big issue. For example, if an automatic car meets with an accident, who is to blame — the traffic controller, the software engineer who programmed the car or AI itself?

It is also difficult to obtain good, unbiased data. Training AI systems with noisy and biased data might be very problematic. If all the interpreta-

tions of the policies that we are feeding into AI are made public, some of this dilemma can be mitigated. Any good AI software should release a data card and a model card. The model card tells us about the parameters, all the interpretations used and even the energy consumed to train the AI model. The data card precisely describes the data, its source, steps taken to clean it and the annotation procedure.

Q How can AI be used for real-time crisis response in rural India?

Disaster management works through several disaster response systems. We have many volunteers. They collect data on how much food or medicines need to be sent and where. When a disaster strikes, other than rescue workers, local people also post about the situation. At IIT-Kharagpur, we have the DisARM project. Basically, we collect social media data and sift through situational and non-situational information. Helpline numbers, how much food and medicines are needed, how many people are stranded — these are situational information. Fake and irrelevant news qualify as non-situational information.

Q This time AI was used in the West Bengal Assembly elections to help parties get a sense of who the Bengali is. Can AI systems be tuned to understand nuanced linguistic or cultural diversity?

It's very difficult. But people these days are trying to make multi-objective and pro-social systems, meaning systems that can handle cultural nuances, linguistic and contextual differences.

Q In these AI times will students still care for classroom teaching?

Students don't skip class just because AI is there. If teaching becomes routine and mundane, then students will lose interest. There is no alternative to a good teacher.

A student's grit, a Lucknow school's lesson in inclusion



**KAUSHIK DAS
GUPTA**

THE DECLARATION of school passing-out results often brings to light accounts of remarkable grit and fortitude — of young people taking important steps in their aspirational journey despite formidable odds. Among this year's exceptional graduates is Sarah Moin, who scored more than 98 per cent — the highest among 258 students at Lucknow's Christ Church College. But her achievement is much more than academic excellence in conventional terms. It is a testament to the 19-year-old's resolve in the face of layered challenges, one that was nurtured by an ecosystem that responded with empathy and imagination.

Sarah's life took a difficult turn early. Diagnosed at the age of four with a rare condition that gradually dimmed her vision, she would, within a few years, lose her hearing as well, followed by the onset of speech difficulties. The youngster's parents formed the first circle of resilience around her. They chose a school that gave wings to her dreams. Christ Church College arranged individualised classes, ensured that textbooks were scanned and converted into accessible digital formats, and enabled her to engage with them through a Braille-based device. Question papers were adapted so she could read them through touch, and her responses were transcribed into standard text for evaluation.

In recent years, students' enrolment has increased appreciably. Yet, survey after survey has shown that this achievement remains incomplete in the face of rigid pedagogies that are not sensitive to varied learning experiences. Sarah's journey shows that inclusion is not just about bringing the child to the classroom but also a result of creative efforts to transform institutional culture to respond to diverse needs.

Therein also lies an irony. Sarah's story is compelling because it directs attention to a larger, more uncomfortable question. Is India's educational ecosystem, as a whole, equipped — or even willing — to become an enabler in the way her school did?

Flagship programmes and legislative frameworks, such as the Sarva Shiksha Abhiyan and the Right to Education Act, have sought to institutionalise the idea that education is a right, not a privilege. At the level of policy, the government acknowledges that

education must respond to diversity — of ability, gender, caste, language, and socio-economic background. The National Education Policy 2020 has foregrounded inclusion, flexibility, and multidisciplinary learning; it has spoken of teachers' autonomy. Yet, teachers like Salman Ali Qazi, who stood by Sarah, enabling her to use the assistive technologies and build bridges between curriculum and cognition, are rare.

The scattered, but significant, instances of schools and educators rising to the challenge of diverse learners also underline the flip side — overworked, disempowered and undertrained teachers and curricula that often privilege rote learning. For every student who gets adaptive support, a large number of children at intersections of disadvantage — from marginalised castes, minorities, girls, to those with disabilities — struggle to navigate structures which do not recognise their needs. India stands at a demographic crossroads, with one of the youngest populations in the world. This dividend can only be earned if the education system equips young people — not a privileged subset, but all of them — with the confidence and capabilities required to participate meaningfully in the economy.

There is, of course, no template to address diversity and inequality. And, it may not be correct to replicate Christ Church College's programmes in another context. However, Sarah's story is illustrative of what an inclusive system can achieve. The question, then, is whether the choices she had can be scaled — whether the sensitivity and creativity demonstrated by the Lucknow school can become the norm rather than a rarity. Can classrooms across the country be reoriented to accommodate diverse learning needs? Can teacher training programmes equip educators to engage with difference not as a challenge to be managed, but as an opportunity to enrich the learning environment?

These are not easy questions, and they do not admit quick answers. Today, as Sarah stands at the threshold of a major transition, let's all wish her the best. And, hope her story becomes the catalyst for expanding the horizons of many others.

The writer is senior associate editor, The Indian Express. kaushik.dasgupta@expressindia.com

Sarah Moin's achievement is a testament to her resolve in the face of layered challenges, one that was nurtured by an ecosystem that responded with empathy and imagination

To teach or to research: We must be honest about what we want from our teachers



ANMOL JAIN

INDIAN ACADEMIA operates on a foundational fiction that every university faculty member is, at once, a brilliant researcher and an inspired teacher. This assumption, baked into hiring norms, promotion criteria, and institutional rankings, is actively damaging higher education in India and is simply unrealistic.

The university system today demands that anyone wishing to build a career as a college teacher must first earn a PhD, then continuously publish research to qualify for increments and career advancement. While the logic may seem reasonable on the surface, in practice, it produces a quiet catastrophe.

Teaching and research are distinct vocations, each demanding a different temperament, a different set of skills, and a different relationship with knowledge. A researcher must possess the patience to sit with uncertainty, the rigour to challenge existing ideas, and the drive to produce original thought; often in isolation, over years. A good teacher, by contrast, must be able to break complex ideas into digestible parts, hold a room, adapt to different learners, sustain curiosity in young minds, and build a course that has pedagogical coherence. There is no reason to assume these qualities naturally coexist in the same person. It is, in fact, rather rare.

By forcing every faculty member to do research, we have created a perverse incentive structure. Those who are natural teachers but lack research aptitude are compelled to produce academic papers regardless. The result is a flood of standard research and a thriving predatory journal industry that profits from it. Journals that charge a fee and publish without meaningful peer review are not a fringe phenomenon in India. They are a struc-

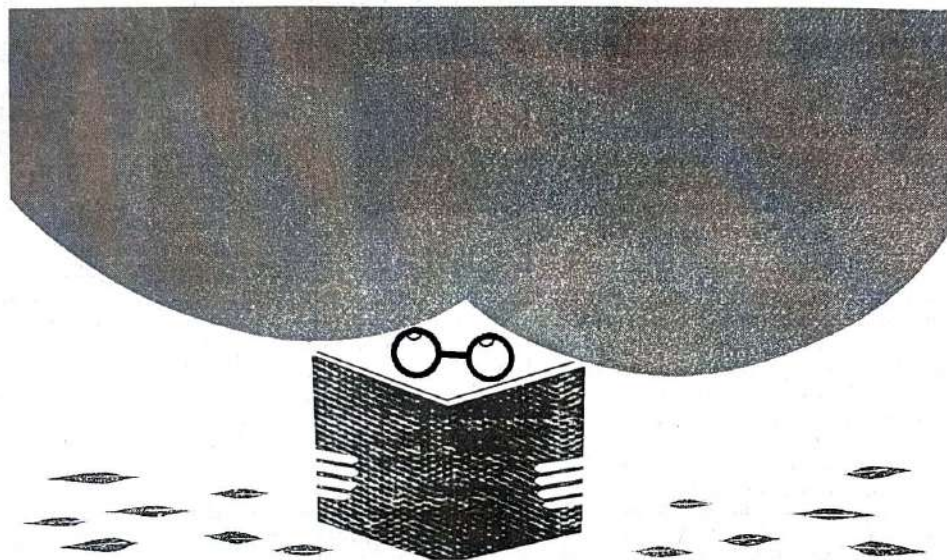


ILLUSTRATION: C R SASIKUMAR

tural response to a structural demand. Add to this the well-documented trade in PhD degrees and ghost-written dissertations, and what emerges is an ecosystem of institutionalised academic dishonesty sustained by a system that asks people to do what they are not built to do.

The flip side is equally damaging. Researchers, those genuinely engaged in the production of knowledge, are poorly served by mandatory full-time teaching loads. Good research demands uninterrupted time to read, to think, to write, to revise. A teaching-heavy semester fractures exactly this kind of time. Researchers also face evaluation pressures tied to their classroom performance, creating disincentives that are both unfair and counterproductive. Meanwhile, students in their classes suffer, not because researchers are bad people, but because standing before undergraduates and explaining the basics of a discipline, with patience and skill, is simply not what many of them do well or wish to do.

The question of institutional

rankings adds another layer. University rankings, both domestic and global, heavily rely on research output. These pressure institutions to require all faculty to publish, regardless of their actual role or skill set. Institutions have even adopted policies that structurally prefer quantity over quality, also termed as a focus on "bibliometric output", and encourage unethical research practices, including unwarranted institutional self-citations and dubious collaborations. As Kishore Paknikar has rightly noted, this unhelpful race to win the rankings game has resulted in the adoption of "research strategies [that] tilt toward publication counts rather than conceptual

depth." Due to this, many Indian and global institutions continue to boycott such rankings, as reported by The Indian Express recently. Rankings must be reformed to incorporate teaching quality metrics adequately and bring more transparency to their evaluation parameters, but that is a longer battle. In the interim, India's universities need a structural separation between teaching and

research tracks.

Such a division of labour is not radical. Many countries maintain lecturer or teaching-track positions for those who are gifted educators, while research-track positions are reserved for those whose primary contribution is knowledge production. Crucially, both tracks must be seen as equally legitimate and equally rewarded. Neither should be considered a lesser calling.

With this structural change must come a reform of entry requirements. Those entering academia through the research track must demonstrate research capability — a PhD, yes, but one judged on the quality of ideas, not the quantity of publications. Those entering through the teaching track, however, should not be required to hold a PhD. What they must hold is a rigorous certification in pedagogy. Unlike schoolteachers, university lecturers receive no formal training in how to design a course, structure a lecture, engage a diverse classroom, or assess learning outcomes. The assumption that subject-matter knowledge automatically translates into teaching ability has no basis in evidence. The UGC-NET, as currently structured, tests neither; it is a relic that needs fundamental reimagining.

This does not mean researchers and teachers must live in entirely separate worlds. Researchers can enrich undergraduate education through elective courses, seminar series, or guest lectures, formats that allow them to share their work without bearing a full teaching load. Regular faculty seminars that discuss new research can serve as a bridge between the two tracks.

The urgency of this reform is hard to overstate. India has one of the youngest and fastest-growing populations in the world. The number of young people entering higher education is rising at a pace that no system relying exclusively on research-active faculty can sustainably meet. To expand access without destroying quality, we must be honest about what we are asking people to do and stop asking one person to be two things at once.

The writer is an honorary senior fellow at Melbourne Law School

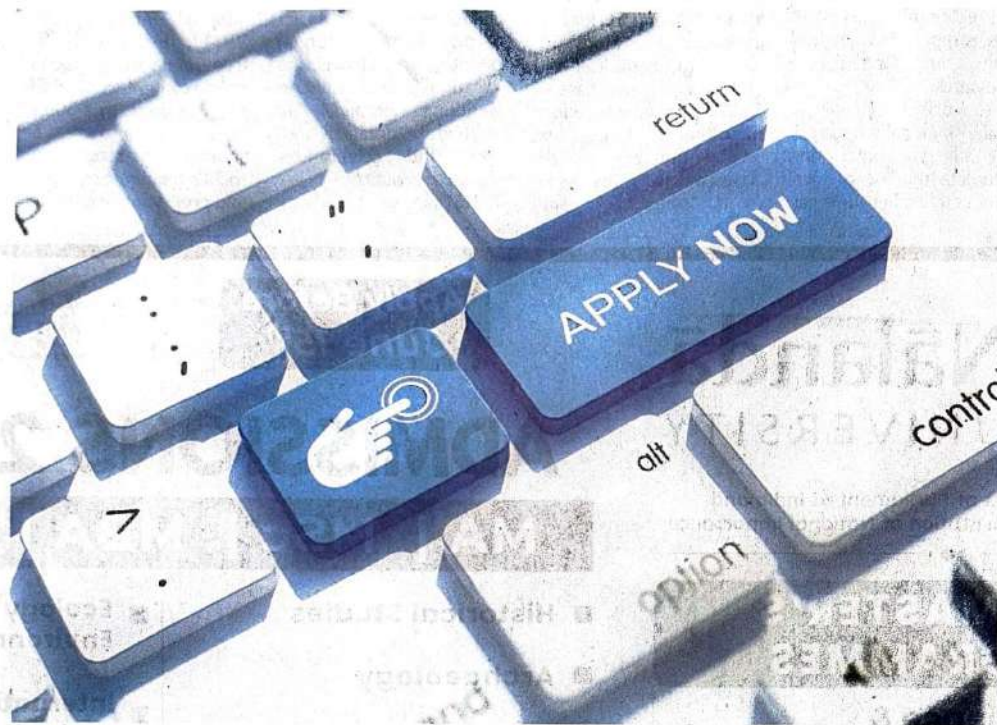
Geraint Rees

For generations, families choosing universities have relied on a familiar checklist: rankings, reputation and selectivity. The logic was straightforward: if an institution ranked higher, it was assumed to offer better preparation for the future. But the economy that today's students will navigate is different from the one their parents prepared for.

Artificial Intelligence (AI) is transforming industries and reshaping the skills people will need. In this new landscape, the real question is no longer "Which university is the best?" but "Which university will prepare me for a future that's still taking shape?" When choosing institutions, rankings appear to offer clarity in a crowded world. But this can be misleading.

Rankings can capture useful information about research strength and reputation, but they don't tell you how students actually learn or how well they adapt once they leave. A university can score highly on both and still run lecture-heavy courses with little room for independent inquiry.

According to the World Economic Forum, nearly 44% of workers' core skills will change by 2027. AI can already analyse datasets in seconds, generate code, summarise documents and automate tasks that once required years of training. But what machines still



Look beyond rankings

Three questions student should ask before choosing a university

struggle with are the human skills of curiosity, creativity and judgment; defining new problems, bridging disciplines and making decisions with incomplete information. These depend on how students are educated, not just what they are taught. When evaluating universities today, three questions can help:

First, what do graduates actually go on to

do? A university's true value is shown not just in the job they land at 21, but who they go on to become. Look beyond the university's own showcased alumni. Search LinkedIn for 10 recent graduates from the specific department or discipline you are considering, not the institution as a whole. Track where they are five years after graduation.

All this information is publicly available. Alumni networks, professional platforms such as LinkedIn and independent reports on graduate outcomes often reveal more about a university's influence than any marketing brochure. A pattern of adaptive, initiative-driven careers is a stronger signal than a list of famous names from decades past.

Second, what does the institution believe education is for? Some universities still treat education as a one-way transfer of knowledge within neatly defined boundaries. Others view it as developing thinkers who can navigate ambiguity, cross-disciplinary borders, and connect ideas. In an AI-driven world, the second approach is far more

valuable.

Therefore, consider if a university rewards questioning or mastery of received wisdom. To assess this, read actual course syllabuses from the department you wish to join. Does the programme require a research project, ideally with an external partner or real-world brief? Are students encouraged to collaborate across fields, rather than remaining confined to a single subject?

Finally, what surrounds the university? Learning does not happen only inside lecture halls but also through engagement with industry, research organisations and communities. This too can be assessed before you apply. Look at whether the university has a technology transfer office with a documented track record of spin-out companies. Check whether faculty members appear on government advisory panels or in policy consultations. Consider the city or region: a university situated within an active technology or biomedical cluster will routinely connect students to live problems in ways that an isolated campus cannot, regardless of where both rank.

Universities that best prepare students for the future are embedded in vibrant innovation ecosystems: start-ups, research institutes, public agencies, creative industries. These partnerships give students the chance to work on real problems, not hypotheti-

cal ones, long before graduation. These experiences also cultivate an entrepreneurial spirit. Entrepreneurial spirit, in this sense, is not about business. It is an orientation: intellectual ownership rather than deference to authority, comfort with ambiguity rather than dependence on instruction, bias toward action rather than waiting for permission.

First filter

However, rankings are not worthless. They are a reasonable first filter and a way to identify institutions with research strength and global standing. But they should be the starting point, not the destination. Students who look at what graduates actually do, who read actual syllabi rather than summary descriptions, and who map the ecosystem around a university before accepting an offer are better placed before they even arrive.

The task is not to find the institution with the highest rank but to find the environment that will stretch students intellectually, expose them to diverse ways of thinking, and challenge them to engage with real-world issues. In the decades ahead, the universities that matter most will not simply be those with strong reputations but those that prepare students to not only navigate change but to drive it.

The writer is the Vice-Provost-Research, Innovation and Global Engagement, University College London, the U.K.

SCHOLARSHIPS

University of Surrey GREAT Scholarships

India
Offered by the University of Surrey, the U.K., in partnership with the British Council under the GREAT Britain Campaign.

Eligibility: Indian citizens with a valid passport who have an unconditional offer to pursue a full-time postgraduate course from September. Applicants must engage in the U.K. higher education, attend networking events, and promote the value of U.K. scholarships and maintain contact with the British Council to share their experiences with future candidates and scholars.

Rewards: £10,000.

Application: Online
Deadline: May 29
www.b4s.in/edge/USGSI

Newcastle University India Leadership and Innovation Scholarship

Offered by Newcastle University, the U.K.
Eligibility: Indian students with the equivalent of a first-class U.K. honours degree, hold an offer for an eligible full-time Master's or M.Res. course at the city centre campus from September and are classified as an international student for fee purposes.

Rewards: Full tuition fees.
Application: Online
Deadline: June 4
www.b4s.in/edge/NUID2

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AI isn't disrupting education. It's diagnosing what's wrong



SUBHASHIS
BANERJEE

THE ARRIVAL of powerful AI systems in higher education has triggered a familiar cycle of excitement and anxiety. Students can now generate essays, solve problem sets, write code, and even summarise entire bodies of literature in minutes. Predictably, concerns about plagiarism, assessment integrity, and the declining value of education have followed.

But this framing misses the deeper point. AI does not fundamentally threaten higher education. Instead, it exposes an uncomfortable truth: Much of what we have been measuring and rewarding in education was never central to it. At its core, higher education has never been about producing answers or imparting job skills. It has been about cultivating judgement — learning how to reason, justify claims, recognise the limits of one's knowledge, and decide what can be trusted. If AI appears to disrupt education, it is only because we have conflated learning with its proxies — outputs, surface-level coherence, and measurable performance.

Consider computer science. AI can generate moderately complex code with ease. However, this does not render the study of algorithms redundant. The central issue was never merely whether a program works, but understanding why it works, the assumptions under which it is valid, and whether one can provide a convincing proof of its correctness. A program without clearly specified preconditions and invariants is not just incomplete; it is untrustworthy. AI can produce code, but cannot certify its correctness through disciplined reasoning. As Edsger W Dijkstra famously observed, "Program testing can be used to show the presence of bugs, but never to show their absence."

The same distinction applies across disciplines. A student can produce an essay on history, but can they distinguish between competing explanations and defend their interpretation? A model can report "95 per cent accuracy", but does the student understand what that number means in context? These are not narrow skills; they are habits of mind — forms of intellectual discipline and epistemic rigour that cannot be outsourced.

AI systems are extremely good at producing the "artefacts" we treat as evidence of ability, such as coherent essays, functional code, and sophisticated-looking analyses. In

doing so, they destabilise the proxies we rely on. When outputs become cheap and abundant, they cease to be reliable indicators of understanding. The "assessment crisis" is not simply that students can cheat more easily. It is that our methods — take-home assignments and coding exercises without personal interaction — were always imperfect measures of learning. AI has simply made their limitations impossible to ignore.

AI tools can summarise large literatures and generate plausible syntheses, but can also fabricate citations and produce misleading conclusions. This raises a question of epistemic trust: If we cannot distinguish well-founded knowledge from plausible-sounding fabrication, the integrity of scholarly communication is at stake.

The appropriate response then is not to retreat from AI or increase surveillance, but to re-centre education on its original purpose. This has several implications: First, the shift from outputs to reasoning. It is no longer sufficient to ask for answers; we must ask for justification. Oral examinations and iterative problem-solving that probe understanding become essential.

Second, we must prioritise verification. Students must be trained to question claims, interrogate metrics, and identify assumptions. In an information-rich environment, the ability to decide what to trust is foundational. Third, intellectual maturity involves an awareness of uncertainty. A student who recognises the limits of an argument demonstrates deeper understanding than one who confidently presents a machine-generated answer. Finally, institutional leadership must resist framing AI as a mere technological upgrade. The challenge is aligning these tools with educational purpose rather than reinforcing failing proxies.

AI is not a disruption but a diagnostic. It reveals where we have substituted measurable outputs for meaningful learning and mistaken fluency for understanding. When answers are cheap, judgement is the scarce resource. Higher education must decide whether it is in the business of producing the former or cultivating the latter.

The writer is professor of Computer Science (also associated with the Centre for Digitalisation, AI, and Society) at Ashoka University. Views are personal

It reveals where we have substituted measurable outputs for meaningful learning and mistaken fluency for understanding. When answers are cheap, judgement is the scarce resource

AI turns up heat on campuses to close degree-capability gap

While NEP2020 outlines competency-based learning, on-ground progress remains uneven, placing urgency on institutions to convert intent into real outcomes, writes **Rajiv Dalbhadkar**

With foreign universities setting up campuses in India, the pressure on the domestic education system is intensifying. As AI reshapes the nature of work, learning is rapidly shifting from degrees to proven capability — exposing what campuses certify between and what industry truly requires. While the National Education Policy 2020 outlines a clear path to forward competency-based learning, progress on the ground remains uneven, placing growing urgency on institutions to convert intent into real, demonstrable outcomes.

Breaking Point

In 2024, many universities and college campuses are facing a harsh and unavoidable reality. For the past two-plus decades, higher education has been sustained by the IT services industry's ability to absorb graduates into basic entry-level roles. Students could move through weak curricula, underdeveloped labs, and limited exposure to real problem-solving — and still find employment, not only in India but overseas as well.

That cushion is now disappearing. With the rise of AI copilots, automation platforms, intelligent testing systems, low-code, even no-code ecosystems, and AI-assisted development environments, the demand for large volumes of instruction-following freshers is rapidly declining.

AI now asks a simple but urgent question: can this graduate think, can this graduate build, can this graduate reason through systems, can this graduate work with AI to produce meaningful outcomes, and can this graduate move beyond tool usage into true engineering imagination?

This is where campuses will be tested — not by regulators or rankings — but by the labour market. The AI era employer will not carry the burden of educational shallowness. The old placement-driven model is fading. The emerging capability-driven model will not be.

Critical Thinking

What makes this moment more significant is that this gap is not new. India's policy framework, particu-

Higher education must shift from information delivery to capability formation, from placement chasing to talent building

larly the NEP2020, has already acknowledged the need for change. It calls for critical thinking over rote learning, competency-based education over syllabus completion, and a shift toward multidisciplinary, experiential learning. Institutions are supported structurally by bodies such as the All India Council for Technical Education (AICTE),

National Assessment and Accreditation Council (NAAC), and National Institutional Ranking Framework (NIRF), all of which emphasise outcomes and accountability. The intent is clear. The direction is not the problem. The challenge lies in translation.

In practice, much of higher education today still operates in the old paradigm. Outcome-based education is often reduced to documentation rather than transformation. Faculty capability has not scaled

with policy ambitions. Industry alignment remains superficial, with internships and projects lacking depth. Assessment systems continue to reward memorisation over reasoning. Placement-driven incentives still dominate institutional behaviour.

As a result, campuses that treat education as syllabus completion, placements as transactions and produce degrees without building capability will struggle. In 2026, the gap between degree and capability

New Demands

The response to this moment cannot be incremental. It has to be structural. Campuses cannot longer treat AI as a tool add-on; it must become integral to how thinking, building, and problem-solving are taught. Curriculum must evolve from static content to adaptive, project-driven learning aligned with real-world systems. Faculty roles must shift from content delivery to capability building. Assessment must move from memory validation to proof of work. Industry engagement must go beyond internships to deep collaboration, where real problems enter the classroom.

AI will not destroy education. It will expose what our current education has been failing to deliver. Placements have been mistaken for success. Marks have been equated with merit. Degree completion has been called education. Most degrees today are still preparing students for a world that no longer exists, and we continue to question why graduates remain underemployed. The issue is not the students, it is the design and the incomplete execution of what we call education.

Unavoidable Questions

The institutions that will thrive will not be those that adopt the most tools, but those that redesign learning itself. They will treat AI not as a shortcut, but as a force multiplier for deeper thinking. They will create environments where students engage with ambiguity and build meaningful systems. They will move from producing graduates to producing engineers, builders, and problem solvers.

The year 2026 is forcing a long-delayed question: into the open, A, our campuses preparing graduates for the future? Or are they still manufacturing resumes for a world that has already moved on?

The author is Founder, National Organization For Software and Technology Professionals (NOSTOPS).



Diagnostics rooted in neuroscience go beyond test scores

By understanding each student's cognitive profile, educators can move beyond one-size-fits-all approaches, writes **Srinesh V**

For decades, education relied heavily on standardised methods, as if all students processed information in similar ways. Today, advances in neuroscience are challenging that assumption, offering powerful insights into how individual brains learn, remember, and grow.

At its core, neuroscience reveals that every learner's brain is unique. Neural pathways are formed through experience, practice, and the environment, shaping how students absorb and apply knowledge. This means that two students sitting side by side may interpret the same lesson differently. Traditional assessments often fail to capture these differences, focusing instead on outcomes rather than the cognitive processes behind them. Educational diagnostics seek to bridge this gap by identifying how students learn, not just what they learn.

Different Strategies

One of the most significant contributions of neuroscience to education is the understanding of neuroplasticity. The brain's ability to reorganise itself by forming new neural connections. This discovery challenges the outdated belief that intelligence is fixed. Instead, it emphasises that learning is dynamic and continuous. For educators and diagnostic specialists, this insight shifts the focus from labelling students to supporting their growth. A struggling learner is no longer seen as limited but as someone whose brain simply needs different strategies to thrive.

Diagnostics rooted in neuroscience go beyond test scores. They analyse cognitive functions such as attention, memory, processing speed, and executive functioning. For example, a student who consistently underperforms in reading may not lack comprehension skills but may struggle with working memory or auditory processing. By identifying these underlying

factors, educators can design targeted interventions that address the root cause rather than the symptom.

Another key insight from neuroscience is the role of emotion in learning. The brain does not operate in isolation from feelings. Emotional states significantly influence attention, memory retention, and motivation. Stress, anxiety, and lack of confidence can hinder learning, while curiosity and a sense of safety can enhance it. Student education diagnostics increasingly incorporate this understanding, recognising that academic performance is deeply intertwined with emotional well-being.

Targeted Support

Technology is amplifying the impact of these insights. Adaptive learning platforms, powered by data and cognitive science, can adjust content in real time based on a student's responses. These tools provide valuable diagnostic data, helping educators identify patterns and tailor interventions.

Accordingly, however, technology is most effective when combined with human expertise. Interpreting diagnostic data requires a nuanced understanding of both neuroscience and the individual learner's context.

Importantly, neuroscience also underscores the importance of early intervention. The developing brain is particularly responsive to targeted support, making it crucial to identify learning challenges early. Early identification plays a vital role, offering tools and frameworks to detect difficulties before they become entrenched. Early support not only improves academic outcomes but also boosts confidence and long-term motivation.

Despite its promise, the integration of neuroscience into education must be approached with care. Misinterpretations and neuro-myths can lead to ineffective practices. For instance, the idea that individuals are strictly 'left-brained' or 'right-brained' learners has been debunked, yet it persists in some educational settings. A rigorous, evidence-based approach

is essential to ensure that neuroscience is applied meaningfully and responsibly.

Looking ahead, the future of learning lies in personalisation. As neuroscience continues to uncover the complexities of the human brain, education systems must evolve to reflect this diversity. Such advances stand at the forefront of this change, offering a pathway to more inclusive and effective learning environments. By understanding each student's cognitive profile, educators can move beyond one-size-fits-all approaches and create experiences that truly resonate.

In essence, decoding the student brain is not about categorising learners but about empowering them. It is about recognising potential, addressing challenges with precision, and fostering a lifelong love of learning. As neuroscience reshapes our understanding of education, the goal becomes clear: It is to ensure that every student is seen, understood, and supported in the way their brain learns best.

The author is founder, Student Education Diagnostics.



As vibe coding speeds up digital creation, can developer skills match pace

Firms automating software lifecycles succeed in combining speed and resilience, writes **Anthony Hilo**

Generative AI is transforming the digital economy. After shaking up the way we work, it's now taking the very heart of business productivity — software development. 'Vibe coding', a method for producing code through interactive conversation with AI, is emerging as a symbol of this transformation. Being faster, more accessible and sometimes less technical, it promises to accelerate digital creation. However, behind this promise of greater efficiency lies a veritable skills shake-up, which companies are still struggling to fully grasp.

Rapid Adoption

According to a report, The State of AI in Software Engineering 2025, over 63% of organisations state that, to deliver code, they use AI assistants. Development and engineering teams use between eight and 10 distinct AI tools daily, yet sometimes sporadic. AI-assisted development is no longer a niche experiment. It is becoming a new standard in this specialised field. In knowledge, vibe coding is lowering the barrier to entry. It



users, and even business teams, to generate features with just a few instructions. Software creation is becoming more accessible. For senior management, the benefits are clear: reduced time to market, enhanced product testing, and enhanced in-house innovation. Code is becoming an accessible playground.

Eventually, developers are no longer simply code writers. They are becoming system architects, responsible for ensuring the robustness of pipelines and for supervising generative algorithms. The widespread use of code can lead to a greater reliance on the most skilled developers, who will need to secure and optimise it.

(The author is chief innovation and digital officer, Oracle and an expert in digital transformation and AI.)

Management curricula is adopting a modular, tech-driven model

An MBA degree is seen as a smart investment, where the return includes skill depth, writes **Gaurav Srivastava**



The skills that businesses value today are quite different from the skills that were valued a decade ago. The rapid pace of digital change, the increased focus on sustainability, and the rise in new ventures have changed what it takes to be a successful leader. Organisations no longer want just business knowledge; they seek professionals who can handle complexity, think across different areas, and apply real expertise in fast-growing sectors. Business education is changing as it always has, and the MBA curriculum is evolving with the industry, constantly adjusting its approach to meet the needs of each epoch. In the late 20th century, finance and strategy specialisations were crucial. In the early 2000s, technology-focused courses became more important. Today, business schools have included advanced analytics, ESG-led strategy and entrepreneurship in their programmes as essential parts of modern management education.

Talent Evaluation

A clear shift toward skills-first hiring is reinforcing this change in expectations. According to an Indeed survey 2025, a growing number of Indian companies are prioritising practical skills and real-world experience, with nearly 80% of employers indicating a preference for demonstrable capabilities. At the same time, with around 42% of hiring managers reporting gaps in job-ready skills, organisations are becoming more outcome-focused in their talent evaluation.

Driving Efficiency

This sharper focus on return is also changing how MBA students approach their learning journey. There is a noticeable move in the MBA education must lead to real career results, whether through faster advancement, entry into growing fields, or the ability to confidently change roles.

The author is regional director, APAC, Middle East & Africa, Graduate Management Admission Council (GMAC).

see, they are actively working towards them. The degree is increasingly seen as a smart investment, with returns that go beyond salary to include skill depth, job mobility, and long-term relevance. Aspirants are making more intentional choices and nurturing professional networks outside of learning and exposure to new areas such as AI and ESG-led decision-making. The expectations are clear: the MBA education must lead to real career results, whether through faster advancement, entry into growing fields, or the ability to confidently change roles.

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The author is regional director, APAC, Middle East & Africa, Graduate Management Admission Council (GMAC).

In AI world, future belongs to students who can think beyond the machine



ASHISH DHAWAN
AND PRAMATH RAJ SINHA

WHAT SHOULD I really study? Will the degree I am pursuing matter in five years? Ten years? These questions on the careers best suited for students today are being asked in classrooms, families, and counselling sessions. They are not new. But they are pressing harder.

The unease is one of pressure, of too much changing at once. AI deepens that unease, but the question underneath is older. It is about education itself, and what students need to carry into a working life none of us can fully predict.

AI is now a fact of daily life, including at the workplace. Job roles are being reorganised, tasks and workflows redistributed among teams and tools. Turn-around times are getting shorter, and expectations of productivity rising.

This is showing up across different kinds of work. In design, for example, a field once thought to be the exclusive domain of human intuition, generative tools are already improving output quality and freeing time for higher-order creativity (Figma, 2026). Similarly, in financial services, there is increasing focus on the responsible deployment of AI and its institutional integration (Cambridge Centre for Alternative Finance, 2026).

Used actively and with intention, AI is more than a functional productivity tool. It advances what a single person can take on: A young professional fluent in digital tools for research, analysis, and execution can now do work that once needed a team.

Think of AI as a huge, tireless brain holding answers to almost any question. But what to ask, within which constraints, and what

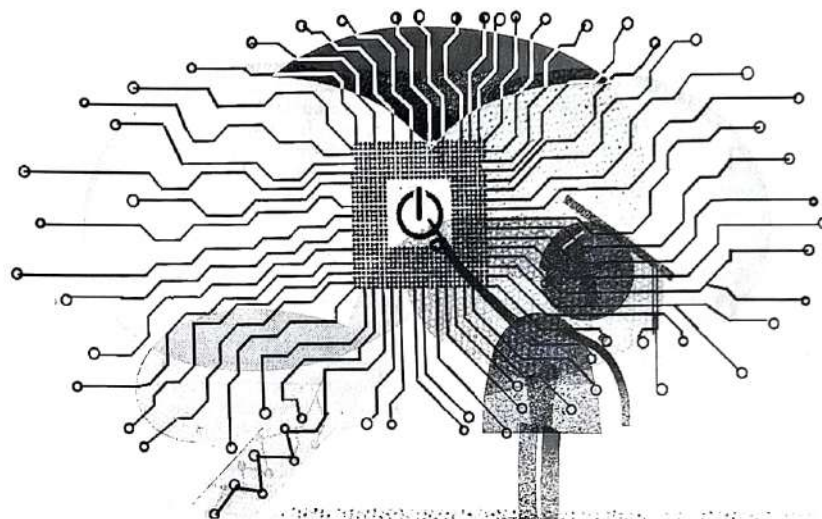


ILLUSTRATION: C R SASIKUMAR

to look for in the answer, is the part only the human can direct. Framing the right problem requires giving AI the right history and concerns. The quality of the answer is, in the end, governed by the quality of asking. For curious minds, that is an ever-present opportunity: To expand learning, go deeper across topics, and follow an idea further than was ever possible before.

While AI is increasingly an always-available collaborator for defined activities, the centre of the work lies elsewhere: In why what we do matters, and to what end.

The mission of the work we do is of an altogether different order. A healthcare company helps people be well. A school teaches a child to think. An agri-tech firm enables a farmer to earn more from the same patch of land. These are inquiries into the world and the human beings who live in it. They demand command over context and a real stake in the outcome.

Global tech leaders developing AI are saying this too. It can support that work. It can generate

options, surface patterns, and accelerate decisions. But choices in the real world carry real consequences. That accountability remains human.

The questions a student today should be asking are not simplistic or even easy. What change do I want to see in my community, my city, my country? How do I want to contribute? And why? These shape the interests and passions of our young people, who, motivated by the mission they want to be part of, will go on to build India and its future.

This is what great universities have always made possible. The transition from school to college is a transition into a more complex, heterogeneous world. A student leaves home, lives among peers from different states and backgrounds, and steps into a place where ideas are debated openly and pushed back against. That is formative in a way no tool can substitute. AI is at its best when it is helpful and obliging; college is where you learn to be tested. When digital tools today can produce comprehensive answers in just a

click, the patience, discipline, and sometimes discomfort, of working out an answer for yourself becomes more valuable, not less.

Employers agree. In entry-level hires, beyond AI fluency, they continue to look for timeless human capacities for a faster world: Structured problem-solving, data literacy, a credible point of view, intellectual humility, and clear communication.

As student outcomes have always mattered, parents, too, are beginning to ask critical questions: About real-world exposure, how technology is being integrated into their child's learning, whether their child will be ready for a dynamic workplace they themselves in their own routine lives are still learning to navigate.

The adjustment Indian universities now need to make is in how they teach, what they assess, and how they prepare students for a market that will keep changing. Treating AI as one more elective is not the answer. Nor is narrowing education to what seems immediately rewarding. Rebuilding the education experience around holistic learning, critical reasoning, and breadth is. Breadth here does not mean dilution. It means awareness across domains, the instinct to connect ideas, and the ability to think and write clearly.

The market itself reinforces this. People today change roles and industries far more often than earlier generations did, and what stays with them is a way of being and doing: With remarkable judgement, clarity, and the readiness to keep learning and skilling.

India today has one of the largest and youngest workforces in the world. That is a unique advantage if our students can collaborate with technology to meaningful effect, while continuing to relentlessly enhance their fundamental human thinking: Seeing which problems are worth solving, holding the line on quality, bringing other people along, and the vision to grow.

A good education has always asked exactly this of its students. AI does not change that ambition. It raises the stakes of meeting it.

The writers are founders of Ashoka University, Delhi-NCR. Views expressed are personal.

Why good teaching still goes unnoticed

Indian universities reward credentials and publications more consistently than meaningful, effective, and student-focused teaching excellence, writes **Anitha Ramachander**

Henry Adams's words, "A teacher affects eternity; he can never tell where his influence stops," encourage us to consider whether influence usually ends at the classroom door or sometimes never begins at all. A typical institution in India has a photograph of a faculty member holding a certificate. Behind them, a banner displays a Faculty Development Programme. Everyone in the photo is smiling. The photograph has been uploaded to the institution's website, and a checkbox is checked somewhere.

This scene is familiar across many universities and affiliated colleges. Too often, however, the programme ends with attendance records and photographs, while classroom practices remain largely unchanged.

We have developed a strong capacity for faculty development programmes, but have not maintained focus on their main purpose. Our system includes faculty development programmes, refresher courses, orientation sessions, and training logs required by NAAC, NEP, and other ranking bodies. Yet what we lack is a shared understanding of what good teaching actually looks like. The deeper problem is not the absence of training opportunities, but the absence of meaningful attention to teaching itself.

Qualifications versus teaching ability

The essential qualifications include a postgraduate degree in the relevant field and a passing score in the UGC-NET or SET, which is mandatory for appointment as an Assistant Professor. Candidates with a PhD may be exempt from the NET requirement. A PhD is required to become an associate professor or professor. In professional courses such as management or engineering, additional qualifications and industry exposure can improve one's prospects.

While these credentials may open doors to a teaching career, classroom effectiveness depends on conceptual clarity, the ability to engage students, and a strong connection between theory and practice. Every institution has its own process for selecting faculty members. Some ask for a demo session, while others conduct interviews, and a few institutions regularly assess academic contributions. Yet these processes often fail to evaluate whether a person can truly teach well.

The issue of entering teaching is just as important as developing oneself within it, yet we rarely discuss it. Not everyone enters teaching out of a deep commitment to pedagogy; for some, qualifications become enough to enter

the profession. Degrees and eligibility tests do not reveal whether someone can explain a difficult idea to a confused student, notice when a classroom has quietly stopped listening, or remain curious about their subject after twenty years of teaching.

Subject knowledge and teaching ability are not the same. Universities often assume that one automatically guarantees the other.

What good teaching looks like

Many faculty members also work under difficult conditions: large class sizes, administrative overload, pressure to publish, and limited institutional support for pedagogical innovation. Yet universities in places such as Sydney, Manchester, and Iowa City demonstrate how seriously teaching can be treated as a professional skill.



The University of Sydney offers its faculty a Graduate Certificate in Educational Studies at no cost, peer review of teaching as a continuous process, and a professional learning framework grounded in the idea that good teaching develops over a career, not just in a weekend. The University of Manchester offers a Postgraduate Certificate in Higher Education, mentoring programmes, and a Teaching Excellence team dedicated to improving classroom practice.

At Colorado State and the University of Iowa, teaching is evaluated through self-reflection, peer observation, and student feedback because institutions believe it deserves that level of attention. Some Indian institutions have also begun creating teaching-learning centres and structured faculty mentoring systems, though such efforts remain uneven across the sector.

In many Indian universities, appraisal forms still focus heavily on how many papers were published and how many workshops were attended. Far less attention is given to whether students understood concepts more clearly, became more engaged, or developed stronger analytical skills.

In most Indian universities, there are still faculty members who are truly exceptional. Someone who has been teaching the same subject for fifteen

years and still keeps up with every major publication in the field. A young lecturer at a small private college in a tier-two city who redesigns her course repeatedly because she keeps finding better ways to explain concepts, without anyone asking her to.

A professor who still makes students think even years after graduation. Such people show what the wider system could produce if good teaching were consistently recognised and supported. Instead, many remain unrecognised and eventually lose the motivation to keep improving.

What universities choose to reward

This is not entirely the teacher's fault. An underpaid profession, overwhelmed by administrative work and excessive workloads, and evaluated mostly on metrics that do not reflect classroom realities, will inevitably produce graduates who are less prepared for professional and civic life.

Research matters deeply to universities. The problem arises when publication metrics overshadow classroom engagement in faculty evaluation systems. There is a clear reward for submitting a paper to a Scopus-indexed journal before the appraisal deadline. There is far less reward for spending a summer rethinking how to teach more effectively. We built this system, and we should not be surprised by what it produces.

Teaching remains one of the professions with the greatest social responsibility. It demands preparation, focus, and the willingness to see whether the student in the third row truly understood the lesson. In many institutions, these practices are becoming harder to sustain. Accountability for teaching quality remains weak, and meaningful classroom evaluation is still rare.

We must acknowledge teachers who truly make a difference. We need more educators who shape lives and help build the country's future. Teaching is not just about lecturing from the podium; it involves paying attention to what students genuinely learn. Better hiring processes, structured mentoring, peer review of teaching, and promotion systems that meaningfully value classroom effectiveness would be a start.

At its core, this is more than an academic issue—it's a matter of purpose. An institution's character depends on what its leadership genuinely values. If the goal is to shape lives and serve society, good teaching will naturally be prioritised. However, if the focus remains solely on numbers and revenue, superficial success will continue to overshadow real learning.

(The author is a pro-vice chancellor of a Dehradun-based private university)

The Fine Art of Doing Science



**V K Saraswat &
V K Singh**

The 2025 Global Innovation Index describes India as an 'overperformer', delivering more innovation output relative to its input levels than many of its peers. Yet, beneath this encouraging headline lies a more complex reality: systems that enable research have not kept pace with the aspirations they are meant to serve.

Focus must now shift to making the R&D ecosystem more responsive, efficient and agile. Nearly a decade ago, Narendra Modi underscored improving 'ease of doing science', calling for a system where researchers spend more time in labs than navigating paperwork. Challenges include both internal factors localised within academic and research institutions, and external factors outside institutional systems that involve broader aspects related to funding, policies, rules and regulations.

Addressing these in isolation won't suffice. What's needed is a coordinated shift in how the ecosystem functions. R&D projects move more slowly because admin systems fail to match scientific timelines. Delays in grant

disbursal, complex procurement procedures, restrictive utilisation norms and repetitive compliance requirements continue to affect R&D efficiency. At the same time, India's R&D ecosystem remains dependent on public funding, with relatively limited participation from industry and philanthropy.

Faster grant approvals, simplified procurement mechanisms, greater institutional autonomy in fund utilisation, and stronger incentives for private-sector R&D can greatly improve research productivity. Encouraging philanthropic and CSR participation can further diversify funding sources.

Expanding post-doctoral support, ensuring timely fellowships through unified portal, and providing greater institutional flexibility in recruitment can help strengthen India's scientific workforce and overall environment. In many institutions, researchers continue to spend considerable time managing approvals, procurement, compliance and documentation.

Admin processes often compete directly with scientific work, reducing both efficiency and research output.

Globally competitive research ecosystems increasingly rely on specialised professional support systems for grant

management, procurement, partnerships and project coordination. Indian institutions would benefit from similar models. Dedicated R&D support offices, simplified approvals, decentralised decision-making and a culture of trust can allow researchers to focus more on scientific work rather than operational processes.

Translation of research into usable products and technologies remains limited. Weak academia-industry linkages and inadequate testing and prototyping infrastructure often prevent innovations from moving beyond labs. Stronger industry collaboration, mobility frameworks, tech transfer systems, and sectoral research development and innovation clusters can help accelerate real-world adoption of research outcomes.

Access to quality research resources continues to vary significantly across institutions. While initiatives such as One Nation One Subscription (Onos) have improved journal accessibility,

access to advanced databases, specialised software and high-end scientific infrastructure remains limited.

Shared infra models, integrated research repositories and wider digital access systems can help reduce disparities across institutions. Expanding access to include private institutions can help building a more inclusive national innovation

ecosystem.

Many state universities and regional institutions continue to face constraints related to infra, faculty capacity and funding. In several cases, state institutions remain weakly connected to larger national research networks.

Improving collaboration between central and state institutions, strengthening state S&T councils and expanding shared research infra can help create more balanced regional innovation ecosystems. Greater support for locally relevant and grassroots innovation can also improve inclusiveness.

An effective R&D ecosystem requires strong monitoring, timely data and better policy coordination. Evaluation systems remain fragmented, data gaps and delays persist, and institutional capacities in science governance and research administration remain limited. Strengthening data analytics infrastructure, evidence-based policy-making and institutional capacities can improve long-term effectiveness of the R&D ecosystem.

Improving 'ease of doing R&D' is not a peripheral reform but central to enhancing research productivity, attracting and retaining talent, and ensuring scientific advances translate into tangible societal and economic outcomes. This will require sustained commitment, coordinated action and a willingness at the institutional level to rethink established processes.

Saraswat is former chairman, DRDO, and Singh is senior adviser, NITI Aayog



Don't make it a mug's game

Goal attainment and youth aspirations are not aligned

Keeping track of youth aspirations against the system's ability to match them is critical if the country is serious about creating a productive labour force

DATA POINT

Garima Agarwal

India's ability to ride the cresting wave of the demographic dividend, before it recedes, depends critically on the education and employment choices of its 367 million young people. While surveys track such outcomes, little is known about how close outcomes are to initial goals. The State of Working India Report 2026, published by Azim Premji University, offers insights into youth aspirations and attainments.

The study utilises the Population Council's dataset – UDAYA: Understanding the Lives of Adolescents and Young Adults – which surveyed adolescents in Uttar Pradesh and Bihar, the two Indian States with the largest youth populations. The sample of interest covers girls and boys aged 15-19 when first contacted in 2015-16 and tracks them three years later in 2018-19 when they are 18-22 years old. Of the full sample of 13,141 youngsters surveyed, aspirations were recorded only for 6,300 who were enrolled in education at the time of the survey. At ages 15-19 when the 6,300 youngsters were first contacted, about 72% aimed for at least graduate education. Three years later, this share grew to 84%. Moreover, aspiration levels were similar across gender, religion, and caste. Uniformly high educational aspirations across social groups indicate a convergence of aspiration windows, possibly due to economic progress and rapid expansion in access to the Internet and social media.

Educational attainments, in contrast, showed that not all dreams came true. In the duration between the two interviews, years of schooling completed grew by only 1-2 years on average instead of the expected three years. In making progress towards their educational goals, over half the sample fell short, on average by 1.7 years

(Table 2).

About 11% of the sample had already exited education by this time. Between the two interviews, another 40% exited formal education. While some may naturally exit on completing desired education, the average number of years of education attained at exit is only 8 years.

It is striking that while aspirations across wealth quintiles are not very different, attainments diverge sharply. Those in the poorest wealth quintile are more likely to fall short of their goals compared to those in the richest quintile. While the share of boys falling below their educational goals hovers between 50% and 60% across wealth quintiles, there is a noticeable variation for girls – from 66% in the poorest to 38% in the richest quintile (Chart 1).

Over half the sample discontinues education before completing Class 12; this group is disproportionately composed of married girls. Married girls face greater barriers than their unmarried counterparts, even within the richest group. In fact, girls who remained unmarried by the time of the second interview (18-22 age group) were as ambitious as boys at setting goals and were more effective at meeting them (Table 2).

In general, girls and boys have different reasons to discontinue education. Boys leave to join the labour market while girls exit at the time of marriage. Failure or disinterest and costs of education are some gender-neutral contributing factors.

Quality of education

A more troubling picture emerges when learning levels are examined. UDAYA employs tools designed by the Annual Status of Education Report (ASER) for students aged 5-16 to measure proficiency in reading and math. UDAYA respondents were well beyond this age and would be expected to achieve the highest levels of proficiency in both dimensions.

However, at age 15-19 when respondents were likely engaged in schooling, 70% of unmarried girls and boys could read a Class 2-level story against only 45% of married girls. The modest gender gap favouring unmarried girls in goal attainment disappears when it comes to learning levels. The share of those who could perform three-digit by one-digit division correctly was just over half for boys, 35% for unmarried girls and only 15% for married girls (Table 3).

The uncomfortable question this raises is: are some groups aspiring for education beyond their reach? This two-State study shows that while aspirations are high, attainments have not kept pace across all groups. It is worth confirming whether this is a country-wide pattern, and focusing policy attention on removing structural barriers to access.

Education programs often default to exposing students to high-achieving role models ostensibly to inspire. While well-intentioned, simply raising aspirations with no realistic pathway to achieving them is short-sighted. These programs need to be supplemented with support for identifying interests, goal-setting, and skill-building. Stronger linkages between educational institutions and employers can provide prospective graduates with a more accurate picture of the labour market and facilitate a smoother transition into the workforce.

While it is tempting to only look at the motivational aspects of goals, consistent failure to achieve targets can cause frustration, which in turn may lead to lower effort and worse life outcomes. Keeping track of youth aspirations against the system's ability to match them is critical if we are serious about creating a motivated and productive labour force for the future.

Garima Agarwal is an Assistant Professor of Economics at Azim Premji University, Bengaluru. The views expressed are personal.

Who falls short

The data for the charts were sourced from UDAYA - Understanding the Lives of Adolescents and Young Adults



TABLE 1: Educational aspirations during both rounds of interview (in %)

Educational aspiration	First interview	Second interview
Below Grade 12	4.93	0.4
Completed Class 12 but below graduate	17.74	10.2
Graduate	53.3	60.35
Post-graduate and above	18.15	23.18
Don't know	5.87	5.87

TABLE 2: The gap between initial aspirations and subsequent attainment (in %)

Attainment-goal gap	Unmarried boys	Unmarried girls	Married girls	Total
Met goal	31.8	45.9	26.3	37.6
Exceeded goal	4.8	5.4	3.1	4.8
Below goal	54	44.2	67.5	51.8
No stated goal	9.4	4.5	3.1	5.9

CHART 1: The share of respondents who fell short of educational goals by wealth quintile and gender. Q1 = Top quintile; Q5 = Bottom quintile

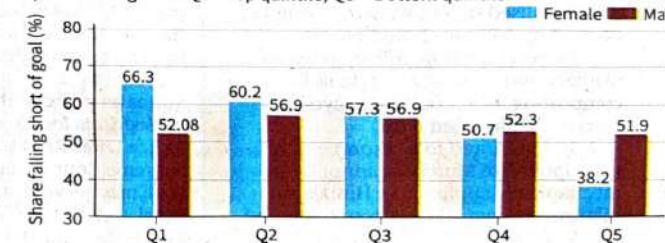


TABLE 3: Learning levels in reading and math (in %)

Learning level	Unmarried boys	Unmarried girls	Married girls	Total
Reads a story	73.97	71.84	44.65	59.74
Solves division problems	51.95	34.53	15.44	29.27

Note: Table 1 and 2 use respondents aged 15-19 years at the initial interview with recorded aspirations; marital status is as recorded at the time of the second interview (N = 6300). Table 3 reports the share of all respondents at the highest proficiency levels using UDAYA data for adolescents aged 15-19 years at the initial interview; marital status is as recorded at the second interview (N = 13141). Reading levels include recognition of letters, ability to read words, ability to read a short paragraph (Class 1 level text), and ability to read a longer 'story' (Class 2 level text). Math levels are recognition of single-digit numbers, double-digit numbers, and ability to perform a two-digit subtraction problem with borrowing and a three-digit by one-digit division problem. Children above Class 3 (older than 8 years) should be able to perform division based on NCERT textbook curriculum

Lab to life shift for innovation in India

Bharat's innovation story is no longer emerging — it is axiomatic, defined by a unique fusion of demographic prowess, digital infrastructure, and an unyielding spirit of ingenuity. As Prime Minister Narendra Modi has emphasised, our journey is about moving from "idea to innovation, and from innovation to impact". That shift is now visible across our higher education institutions. It is also finding expression on the global stage.

In June this year, Bharat Innovates will be held in Nice, France. It will bring together over 100 deep-tech ventures and more than 50 research-led innovations emerging from India's premier institutions. These will engage with global industry, investors, and research partners across critical domains — from health care and advanced computing to space, energy, and agri-technologies.

In many ways, Bharat Innovates represents the next step in this journey. It is where ideas nurtured in our laboratories, and refined through our institutions, are presented to the world with confidence. It reflects a growing national capability — not only to innovate, but to translate that innovation into solutions that can serve both India and the world.

Over the past decade, India has built an enabling environment that connects research more closely with real-world application. This shift has been supported by a steady strengthening of the research ecosystem. Investments in doctoral talent, long-term funding frameworks, and innovation capital are now beginning to work in alignment while the Prime Minister's Research Fellowship is deepening the research pipeline. The Anusandhan National Research Foundation is bringing greater direction and scale to funding. And the Research, Development and Innovation scheme is unlocking capital for high-risk, high-impact work in emerging sectors.

At its core lies a simple principle: Research must not only expand the frontiers of knowledge, but also solve real-world problems. India's approach has been to bring these together ensuring that innovation is not only cutting-edge, but also accessible, scalable, and relevant.

The results are now visible.

Startups emerging from our higher education institutions are shaping entire sectors. Ather Energy, incubated at IIT Madras, has advanced indigenous electric mobility. Sedemac, emerging from IIT Bombay, has become a global player in embedded systems. ImmunoACT is delivering affordable, next-generation cancer therapies. GalaxEye is building multi-sensor satellites with applications across agriculture, maritime, and defence. Tricog Health has enabled early cardiac screening at scale, supporting over 30 million screenings globally.

These are not isolated successes. They are outcomes of a system where research, incubation, and entrepreneurship are closely aligned.

This shift is also visible within institutions. Centres of Excellence are producing deployable technologies across sectors. At IIT Madras, research has led to fibre-optic sensing systems for real-time industrial monitoring. AI-enabled radiography tools are improving defect detection in manufacturing. Autonomous robotic systems are enhancing rail safety. Advances in materials are enabling

diamond traceability and authentication. Work in biotechnology is building capabilities in tissue engineering and regenerative medicine.

Across just 15 such Centres of Excellence, these efforts have already resulted in over 245 patents and 50 startups. This transformation is also reflected in the scale of India's startup ecosystem. From fewer than 500 startups a decade ago, India today has over 2.23 lakh recognised startups, with nearly 55,000 added in the last year alone. We are now the third-largest startup ecosystem in the world, with over 120 unicorns and more than 23 lakh jobs created.

A significant part of this momentum is being shaped by our higher education institutions. Across campuses, we are witnessing a clear cultural shift — from a focus on secure placements to a growing aspiration for building enterprises. This movement from packages to startups reflects the confidence of a new generation ready to create, take risks, and solve problems at scale.

But scale alone doesn't suffice; a successful innovation ecosystem needs to spread too. Nearly half of our startups are emerging from tier II and tier III cities. Over 45% have women in leadership roles. Innovation in India is becoming distributed, inclusive, and deeply rooted across the country.

This is democratisation of innovation, also visible in India's approach to AI in education. Initiatives such as Bodhan AI are leveraging multilingual technologies to make learning more inclusive and accessible across diverse linguistic contexts.

Such efforts reflect India's broader contribution to the Global South — where innovation is not only advanced, but designed to be inclusive, adaptable, and scalable across societies.

As we look ahead, the next phase of this journey must deepen this shift. We are committed to strengthening industry participation in research along with creating stronger pathways for translating research into products. A key step in this direction is to move towards more product-oriented doctoral research — where a PhD does not culminate only in a thesis, but in a tangible product or deployable technology.

This will require a more active partnership with industry. Greater co-creation, early-stage engagement, and long-term investment in research will be critical. Industry must be adopters of innovation and active participants in shaping it. This will accelerate the journey from discovery to deployment. It will also create a new generation of researchers who are equally at ease building solutions and advancing theory.

This is central to the vision of Atmanirbhar Bharat. It is about building technologies in India, for India and the world. It is equally central to the idea of a Viksit Bharat, where growth is driven by knowledge, innovation, and inclusion.

Bharat Innovates reflects where India stands today. More importantly, it signals where India is headed: It is no longer only generating ideas, it is deploying them at scale and with confidence. The journey from lab to life is well underway.



Dharmendra Pradhan

Dharmendra Pradhan is Union education minister. The views expressed are personal

Seeking synthesising generalists in AI age

Coaching factories have killed the infrastructure that enabled multi-dimensional intellectual development. India must rebuild, deliberately and at scale, the competitive public culture that trained its brightest minds to become highly accomplished generalists

Convo Hall in IIT Delhi, sometime around 1983. Two quizzing teams face each other in Rendezvous: St Stephen's and IIT Delhi, two of the best quiz teams in India. On the IIT Delhi side, one contestant cannot stop laughing, because the person he is trying to destroy is his old quizzing partner from St Columba's. At St Stephen's in the early 1980s, Bhaskar Chakravorti is skewering opponents with a wit so devastating that people show up to debates just to watch. A team from IIT Bombay, including Nandan Nilekani and Jairam Ramesh, sweeps college festivals in Delhi in 1974. And Suhel Seth travels all the way from Calcutta to compete in college festivals across India, because that is what you did. You crossed the country to test yourself against the best.

In the age of Artificial Intelligence (AI), these long-ago scenes turn out to

matter more than anyone could have imagined. AI is the most powerful analytical specialist ever built. What it cannot reliably do is synthesise across domains, connect ideas from unrelated fields, and exercise judgement under genuine ambiguity.

That capability is exactly what India's school and college competition circuit was training at national scale. India's competition circuit from the mid-1970s through the late 1980s was the centre of school and college life. Quizzing, debating, elocution, JAM, and theatre, layered on top of one of the world's most demanding examination systems. The institutions were St Columba's, St Stephen's, DPS, La Martiniere, IIT Delhi, IIT Bombay, JNU, SRCC, Presidential College, Madras Christian College, Jadavpur University, St Xavier's Bombay.

Arun Jaitley dominated Delhi University debating. Shashi Tharoor founded the St Stephen's Quiz Club and dazzled across formats. Swapna Dasgupta came from Calcutta's La Martiniere to join St Stephen's. A young Shah Rukh Khan, Sword of Honour winner at St Columba's, was channeling the same competitive energy into theatre with Barry John's Theatre Action Group.

What made this circuit special was that exam results alone meant nothing socially. You had to perform, publicly, across multiple formats, against the best in the country. The quizzers who could not debate were incomplete. The

debater who could not survive a JAM round was not respected. These were the *dadas* of their generation, and their currency was multi-dimensional intellectual performance, not money or connections. The circuit was training bright young people to synthesise, improvise, and shift between analytical and intuitive modes under pressure, the very capability that research on high-performing managers identifies as the hallmark of outstanding achievers.

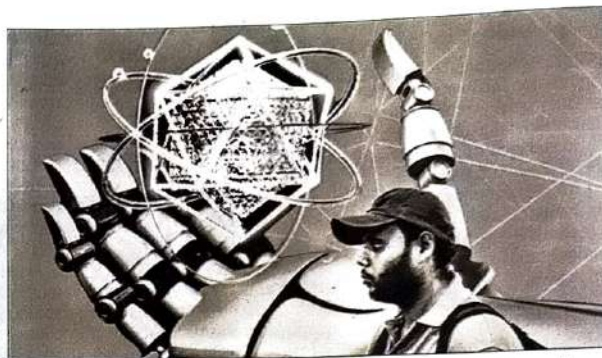
Then the lid came off. The American graduate school pipeline matured. India opened up in 1991. And this generation exploded across every field simultaneously. The institutional and competitive ecosystem of this period produced a Nobel laureate (Abhijit Banerjee), the Governor of the Reserve Bank of

India (Raghuram Rajan), two consecutive Deans of Harvard Business School (Nitin Nohria and Srikanth Datar), the founder of InfoEdge (Sanjeev Bikhchandani), the President of the World Bank (Ajay Banga), the CEOs or co-CEOs of Citigroup, Deutsche Bank, PepsiCo, IBM, Diageo, and the SoftBank Vision Fund, the global COO of Unilever, the inventor of the 4G wireless standard (Rajiv Laroia), the architect of Aadhaar (Nandan Nilekani), India's finance minister (Arun Jaitley), and one of the biggest movie stars in the world (Shah Rukh Khan).

Add to this foundational scholars at Princeton, Duke, Michigan, Cornell, Brown, and MIT, one of the country's finest historians, its most consequen-



Jayant Sinha



In the age of Artificial Intelligence (AI), these long-ago scenes turn out to matter more than anyone could have imagined.

PTI

tial public intellectuals, and its leading journalists. All from the same ecosystem. All within 15 years. The range is the point. These are not a few specialists in one field. They are synthesising generalists who led across technology, finance, scholarship, politics, media, entertainment, and institutional design. The closed economy concentrated talent and the competition circuit trained versatility.

Today's students are as bright and driven as any generation before them. But the system optimising their talent has narrowed drastically. Coaching factories maximise exam scores and nothing else, producing analytical specialists who can crack the JEE but have never debated, quizzed, or thought on their feet in a room full of sceptics. Meanwhile, algorithmic attention capture is displacing the sustained reading and broad curiosity that the circuit depended on.

The problem is not the students. The problem is that the infrastructure for multi-dimensional intellectual development is atrophying, precisely when AI is commoditising analytical specialisation at breathtaking speed. The synthesising generalist is becoming the scarcest and most valuable form of human capital on earth. India trained exactly this kind of mind for 15

years, and the results speak for themselves. India built this system almost by accident.

Pre-liberalisation scarcity created the hothouse. The competition circuit trained the versatility. The result was a generation that led the world. Now India must build it again, deliberately: National quizzing and public speaking leagues, university festival revival grants, credit-bearing interdisciplinary performance modules, and AI-assisted debate tournaments that use new technology to train the human capabilities technology cannot replace.

Quizzing, debating, JAM, theatre, elocution: These are not extracurricular luxuries. They are the infrastructure of human capital formation for the AI age. The task now is to rebuild, deliberately and at scale, the competitive public culture that trained India's brightest minds to become highly accomplished generalists.

Jayant Sinha is President of the Everstone Group and Visiting Professor in Practice at the London School of Economics. He is a product of this competition circuit, having attended St Columba's, IIT Delhi, and later Harvard Business School, before serving as Union minister of State for finance and civil aviation. The views expressed are personal

Most important AI lesson must be taught at home



SUTIRTH DEY

Whether a child reaches for the chatbot to understand or to outsource depends on what the school demands and what the household rewards. The former is outside a parent's control. The latter is not

ON APRIL 1, the Union Education Minister launched the new CBSE curriculum on computational thinking and artificial intelligence for students of Classes III to VIII. The rollout is among the most ambitious school AI programmes anywhere in the world. There is no plan, however, for how those children will use AI. Consider the chatbot on a child's phone at nine in the evening, sitting beside a half-finished assignment. No syllabus reaches that.

A recent study by the Salaam Bombay Foundation and NMIMS surveyed 1,050 Class IX students across 20 Mumbai municipal schools. More than 70 per cent reported using ChatGPT, mostly for maths problems, translations, and homework. The study also found early signs of cognitive offloading: Letting a tool do our mental tasks. We all do this; the worry is when a child does it before learning how to think. In a 2025 study, researchers from the University of Pennsylvania's Wharton School tracked nearly 1,000 Turkish high-school maths students who were given AI tools during practice. They found that those given unrestricted AI access scored 48 per cent better than peers who studied without it. But when AI was withdrawn, those who had used it did 17 per cent worse than peers who had never used it.

The case against AI in education is narrower than these numbers suggest. A college student of mine struggles with English. He uses AI to re-explain the class notes in the language he thinks in. The same tool that hollows out one student's learning can open another's. Which way it goes depends on the student's judgement. No policy can teach that. Whether a child reaches for the chatbot to understand or to outsource depends on what the school demands and what the household rewards. The former is outside a parent's control. The latter is not. If the expectation at home is highest-marks-in-every-subject, an overloaded child will likely search for shortcuts. Schools that reward high marks share the blame. But parents have a larger stake in how their children turn out, and must move first. What does that mean in practice?

Take the child into confidence. The cost of letting the chatbot do their thinking is real, and most children can absorb this if an adult explains it. They would love to think for themselves; they outsource because, in the moment, the alternative is harder. Then recalibrate. When your child reports a mark, ask how they got it. If the work was their own, praise it and let the mark be whatever it is. If the work was the chatbot's, say so, and withhold praise. None of this works without your own AI literacy. The point is not catching the chatbot in your child's homework but knowing these tools well enough to ask sharp questions about their process.

The new curriculum will teach Indian children how AI works. Knowing when to set the chatbot aside is a lesson the school cannot give. That lesson is given at home, in a hundred small conversations about what learning is, and what is beneficial in the long run. The parent who asks the child, after every assignment, to explain the work back, or try it once with the screen closed, is giving them something AI cannot: The slow muscle of working things out, and the joy of arriving there themselves.

The writer is chair, AI committee, and professor of Biology, IISER Pune. Views are personal

Don't outsource your feelings to AI — Empathy cannot be automated



TANU DANG

As a Professor in the University set up, our days do not usually end when the lectures do. That day had a heavy beginning as I spent almost two hours interacting with students, not discussing their projects or grades but simply being the one to listen patiently to their chaos within. One was dealing with the crushing weight of parental expectations while the other was navigating the loneliness that often engulfs the students hailing from small cities, learning to find a firm footing in the rhythm of 'Life in a Metro'. I listened, asked questions and tried my best to offer what I usually do, not solutions but a non-judgemental space where they can open up and share the scuffled up feelings.

And just when I thought that my cup had run almost dry, leaving me a bit wary and blank, the third student knocked and entered for some academic query. He asked, I replied and then at the door, he paused. Looked at me and asked, "Maam are you okay? You look sad....would you like to talk? I didn't know what to say. I was numbed. Because this was the same student who had once sat in that very chair across me, few months back, struggling silently, while I tried to convince him that the storm would pass. I had been his sounding board then, like I had been for the other two today. And today, the roles had reversed.

As academicians, we often do more than just taking classes or marking assignments. While interacting with the students in the classroom, we actually do what is far more layered. We notice the changes in students' behaviour, a change in the way they dress, a sudden loss of interest in discussions, an unusual quietness, quick loss of temper or a forced smile. Things that often go unnoticed by others, uncovered



by textbooks and rare human data that isn't captured on dashboards or mindmaps.

Over the past few months I have been noticing a rapid shift that genuinely worries me. More and more students are turning to Artificial Intelligence — not just for assignments and projects but for emotional support. They are leaning on AI, as their friend and confidante, seeking guidance on dealing with stress, anxiety, relationships, parental expectations and peer pressure. Some of them, even shared with me that they even use AI to draft reply to their personal chats so that they don't sound 'too attached', 'too emotional' or 'too provocative'. And the global numbers affirm what I see in the classroom. A 2026 Trends Report by American Psychological Association highlights that synthetic relationships are stepping in to fill the void of

loneliness created by human connections. Amid what the researchers are now calling a loneliness epidemic, the number of AI companion apps designed to stimulate trusted relationships has grown to a whopping 700 per cent between 2022 and mid 2025 alone. Doesn't that ring a bell, No an alarm?

In India, the stigma around mental health still runs deep. Thus, the appeal to pour in, to an invisible and yet omnipresent, AI interface that doesn't judge, doesn't interrupt and doesn't try to 'fix' is understandable. I don't dismiss that, but I do worry about its implications in this already interconnected, disconnected world.

Sociologist George Herbert Mead's theory of Symbolic Interactionism explains how we as humans create meanings through social interactions and shared meanings, through the push and pull of real conversations. When I listen to a student, I don't just process what they say. I also read their eyes, their hand movements, their pauses, their reflexes. These readings are supported by large datasets stored in the memory, perfected by experience and guided by human empathy. I personally believe that emotions must be raw and not calculative or strategically structured or guided by an AI based on random datasets.

Because human beings are not data points. The vulnerable, not so perfect, raw communications are the ones that shape us as humans. And the empathy, subjectivity, emotional intelligence that we add on at our individual level, truly make the communication meaningful, even in this algorithm driven synthetic world. So while the algorithms may be perfected to gauge emotional probability, I think we still need 'Human Mentors' to decode the unsaid, unmeant and unfelt. When we analyse the situation with our experience and empathy, it's not synthetic, it's real, with all its fallacies and fantasies. And that imperfection, is not a flaw. Because human emotions leave enough room for the 'what ifs' and in

matters of the heart 'what ifs' matter much more than anything else. As everything in life isn't black or white, it's actually in the grey areas, that life truly exists.

That student at the door, wasn't guided by any keyword. He asked because he felt. He asked because something in him read something in me, that wasn't said out loud. And I am so glad he asked. I hadn't even realised what those two hours had done to me but he saw it. It just reassured me that empathy still cannot be automated.

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INTELLIGENCE

LIFE SKILLS

Who needs classwork?

Certainly not the bots. **Dana Goldstein** on how teachers in the US are making students write without AI help and why

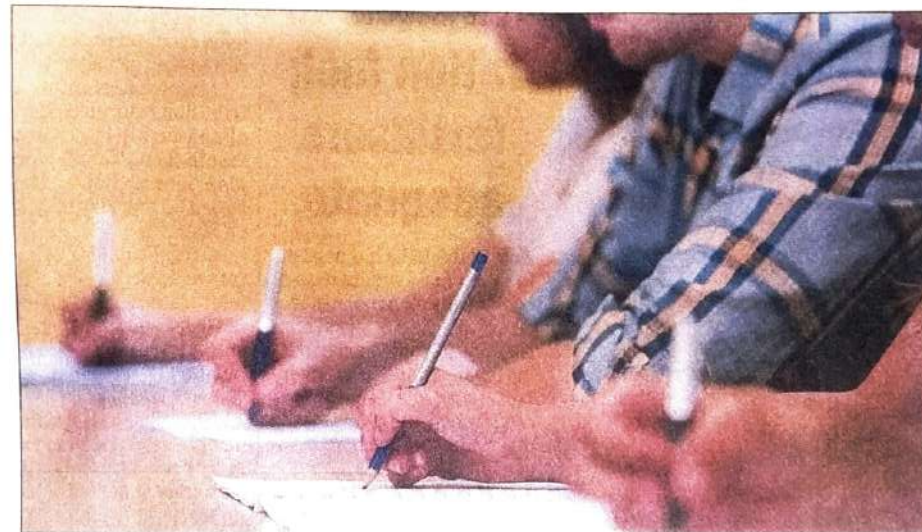
For today's high school and college students, the all-night writing session is on the way out. In the era of artificial intelligence, take-home writing assignments have become so difficult to police for integrity that many educators have stopped assigning them.

Instead, teachers are requiring students to write while in the classroom, where they can be observed. Assignments have changed too, with some educators prompting students to reflect on their personal reactions to what they've learned and read — the type of writing that AI struggles to credibly produce.

The *New York Times* heard from 400 college and high school educators who responded to a callout about how generative AI is changing writing instruction. Almost all described a deep rethinking of how to teach writing.

Over the past year, AI use has become ubiquitous among American students. Between May and December 2025, the share of American middle school, high school and college students who reported regularly using AI for homework increased from 48 per cent to 62 per cent, according to polling from RAND — even as two-thirds of students said that the technology harmed critical-thinking skills. A third of the students reported using AI to draft or revise writing.

Chatbots can easily produce polished essays in response to any prompt — analysing US Supreme Court cases, parsing symbolism in *The Great Gatsby*, explaining the science behind the Artemis mission. AI-powered browser extensions allow students to instantly generate and revise text as they complete on-



Over the past year, AI use has become ubiquitous. Students use it for homework, to draft and revise writing. Many believe this practice harms critical-thinking skills

line assignments. The tools are able to find and replace language in student writing that could trigger AI-detection software, and can also rephrase published writing into new text that students can turn in as their own.

Educators consider many of these uses akin to plagiarism. But some are also worried about students falling behind the curve of a technology that is reshaping the economy and day-to-day life.

Over the past year, Jessica Binney, 49, overhauled her English classroom at John Jay High School in the Katonah-Lewisboro school district, north of New York City. She gave up assigning three to five-page papers, once a staple homework in her Advanced Placement courses. Now, her students write in-class essays, either by hand or on a laptop with a locked-down browser.

Binney regrets the loss of depth that longer assignments could produce. But she and many other educators who have moved writing into the classroom described relief at being

able to abandon the highly imperfect science of AI detection. Student reliance on chatbots had gotten "worse and worse" as the technology gained sophistication, Binney said.

At Kingsborough Community College in Brooklyn, Matthew Gartner said that because of AI overuse, he now has his freshman composition students write on paper in the classroom for 30 minutes, then share their drafts immediately in small groups.

Recent studies of ChatGPT and of Anthropic's Claude chatbot show that help with schoolwork is among the most popular uses of generative AI. When it comes to writing, two-thirds of ChatGPT queries ask for edits or translation. About a third ask the chatbot to generate text from scratch.

Megan Hart, an English teacher at South Forsyth High School outside Atlanta, said that last year, she noticed take-home essays returned sounding eerily similar and formulaic.

At the same time, her district has encouraged teachers to get comfortable with generative AI. Several of Hart's former students have told her they use AI frequently in their adult jobs, helping convince her that teenagers need to develop AI skills.

Now, she requires students to complete most writing in class, but she also teaches them how to use AI to find reliable sources for research papers. And Hart has worked with students to use AI to solicit feedback on drafts.

"The kids have to build that critical thinking," she said, including fact-checking the information AI provides.

Breton Sheridan, who teaches English at a Philadelphia charter high school, has prioritised in-classroom reading and writing, oral presentations and debates. The problem with AI, Sheridan said, was that while adults who have mastered basic skills may use AI on the job, teenagers have not yet grasped those basics.

"They are using generative AI to write before they learn how to write. They are reading ChatGPT summaries of a book before they have ever read a book," he said. "The result is a diminished population."

He noted that schools serving low-income students, like his, are often under the most pressure to show that they are embracing innovative technology and preparing students for the working world, where it may soon be standard to rely on generative AI.

Why re-skilling for the future requires proactive learning

Achal Khanna

letters@hindustantimes.com

For years, most organisations approached learning in a fairly predictable way. A new system was introduced, a tool changed, a gap appeared – and then training followed. We called it reskilling. It made sense in a world where change happened in waves. Something shifted, we responded, and then things stabilised for a while.

That rhythm no longer exists.

Today, by the time a company identifies a skills gap, the business has already moved ahead. Roles are evolving faster than training calendars. Technologies are being adopted while people are still trying to understand the previous upgrade. In many orga-

nisations, learning still reacts to yesterday's problem while tomorrow's challenge is already taking shape.

This is where the conversation has started to change. It's no longer just about reskilling – it's about future-skilling.

The distinction matters.

Reskilling fixes what is missing right now. Future-skilling prepares people for work that is still taking form. It assumes that disruption is not an event – it is a constant.

Across industries, roles are quietly transforming. A marketing role today looks very different from what it was five years ago. Finance teams are expected to understand analytics. HR professionals are navigating data, technology and employee well-

being simultaneously. Even operational roles require digital fluency that wasn't necessary before. The challenge is that learning models have not always kept pace. Too often, development happens after performance declines or after a new system is already live. Employees attend workshops to "catch up." That approach creates pressure rather than confidence. It positions learning as a corrective action instead of a growth investment.

Future-skilling asks a different question: what capabilities will define strong performance two or three years from now?

The answer is rarely limited to technical skills. Yes, digital literacy is essential. Yes, understanding automation and AI matters,

But equally important are capabilities like adaptability, problem-solving, collaboration and judgement. These are not trends. They are foundational skills that allow employees to move across roles and absorb change without feeling displaced.

One thing has become clear in recent years: technical tools will continue to evolve. The human ability to learn, unlearn and relearn will determine who stays relevant.

Another shift is happening in how organisations think about career paths. The idea of a straight-line progression is fading. Employees move across functions. They build hybrid skill sets. They take on responsibilities that didn't exist when they first joined.

If learning remains reactive, internal mobility becomes difficult. If learning is forward-looking, employees are prepared for opportunities before they formally appear. This requires leadership attention.

Future-skilling cannot sit only within HR. Business leaders must actively define what tomorrow's workforce needs to look like. That means asking uncomfortable questions: Which roles may disappear? Which new capabilities are emerging? Where are we vulnerable if change accelerates? These discussions are not always easy – but again, avoiding them does not slow change.

In practical terms, future-skilling also means moving beyond one-size-fits-all programmes.

Not everyone needs the same development. Some employees require deeper digital capability. Others need stronger stakeholder management. Some need exposure to cross-functional work.

Learning has to become more integrated into daily work. Stretch assignments, mentoring, project rotations and real-world problem solving often teach more than formal sessions. When employees are given space to experiment and grow before change forces them to, confidence builds. There is also a cultural component. In reactive environments, learning is sometimes viewed as remedial. In forward-looking organisations, it becomes normal. People are encouraged to build skills even

when they are performing well. Curiosity is not seen as distraction; it is seen as preparation.

This mindset shift matters more than any platform or training module. Technology can certainly help; also digital learning tools make content accessible. Meanwhile, skill-mapping systems provide visibility – but no platform can replace a culture that genuinely values growth.

Employees notice the difference – they can tell whether learning is something the company talks about or something it truly prioritises. There is also a business reality here. Organisations that invest early in capability-building tend to navigate disruption more calmly. They rely less on urgent hiring and more on internal talent. They experi-

ence fewer productivity dips during transitions.

On the other hand, companies that treat learning as an afterthought often find themselves scrambling – trying to close gaps quickly, often at higher cost. The shift from reskilling to future-skilling is not about abandoning current needs. It is about widening the lens. Instead of asking, "What is missing today?" organisations must also ask, "What will we wish we had built three years from now?"

Reactive learning responds to disruption, but future-skilling anticipates it. And in today's workplace, anticipation is no longer optional – it is essential.

The author is CEO, APAC & MENA

SHRM

Elusive jobs: how AI will demand even greater patience of India's unemployed

Vidya Mahambare and Asrar Alam

letters@hindustantimes.com

India's unemployment debate is missing a crucial dimension: time. Time spent waiting is a loss at any age, but especially so in one's youth. For both the individual and the country, it is a loss of prime productive years.

Last year, 11.6 million Indians in their 20s were unemployed and about 6.8 million of them had been job hunting for over a year. The long wait may not necessarily reflect a shortage of jobs, but a mismatch between the jobs on offer and what young Indians aspire to.

These numbers understate the full picture: another 78 million in the same age group were not looking for work at all as per our estimates based on the Periodic Labour Survey data for 2025.

In Rajasthan, Assam, Jharkhand, Odisha and West Bengal, two-thirds or more of unemployed young adults in their 20s were looking for work for over a year. In Bihar, Punjab, Uttar Pradesh, Andhra Pradesh and Telangana, more than half of

unemployed young adults were in the same category.

In Maharashtra, Tamil Nadu and Gujarat—states with diversified manufacturing and services economies—unemployment durations under and over a year split roughly evenly. Kerala shows a similar pattern, though possibly for different reasons: many young people may have already migrated to other states and abroad.

In terms of the overall unemployment rate, about 10% of young Indian adults in their 20s were unemployed last year. This does not include around 40% who were not even looking for a job.

Unexpectedly, states like Uttar Pradesh, Bihar and West Bengal have lower-than-average unemployment rates among people in their 20s. However, this does not necessarily reflect labour market success. Poverty forces people to take up whatever work is available.

The states with the highest young adult unemployment are not the poorer northern states, as one might expect. They include Tamil Nadu, Telangana, Andhra Pradesh, Punjab and,

unsurprisingly, Kerala, all with 13-18% of young adults unemployed. Also, some prosperous states such as Gujarat, Maharashtra and Karnataka have lower young adult unemployment rates, with Gujarat recording the lowest at 2%.

In states where a higher proportion of young women are looking for work, the labour market fails them most visibly. For example, in Kerala, 41.5% of young women are in the labour force, and about 30% of them were unemployed last year, compared with just over 12% for men, among whom labour force participation is higher.

Other southern states such as Tamil Nadu, Andhra Pradesh and Telangana show double-digit gender gaps in unemployment rates. In Bihar, Haryana and Uttar Pradesh, where female economic participation

is lower (less than 25%), the gender gap in unemployment is narrow, only because so few women are seeking work.

The most concerning fact, set to get worse with the advent of AI, is that as education levels rise, so does the unemployment rate. The wait is set to get longer as well. This is also the main reason for higher rates of joblessness seen among young adults in some of India's relatively prosperous states.

Among the young adults who are not currently in education, graduates account for one-fourth. However, they account for two-thirds of the unemployed. The graduate unemployment rate is 23.6%, more than twice the overall rate of about 10% in this age bracket and five times the secondary-educated joblessness rate of 4.3%. Among those with engineering degrees, the largest group among highly educated young adults, 25% were unemployed in 2025.

In an AI world, what kinds of jobs will be created and what skills should young people acquire?

In an article in 2023 in Mint,

one of the authors of this article wrote, "The ability to code is a top-rated skill today. It will soon be replaced by skills that are more challenging to acquire... Resourcefulness, integrative thinking and articulation are likely to become far more valuable and necessary than basic coding and programming." This remains true. The same will hold for skills such as marketing, sales and negotiation, areas where judgement and persuasion matter more than the process.

Young people will need to acquire more than a degree. Building genuine expertise in a core discipline—pure sciences, mathematics or psychology—demands skills of understanding that a degree does not provide. Employers today have little patience for the gap between the two. They may well hire experienced people in these fields.

The structure of most Indian schools and colleges lets students choose only narrow streams, leaving combinations such as mathematics with psychology or marketing largely out of reach. What the evolving

labour market will ask for, however, is precisely the kind of integrative thinking that rigid disciplinary boundaries work against.

The employment outlook is sobering. The availability of decent-paying jobs, entry-level coding and similar work is shrinking, which will push down wages. Young women will likely be hit hardest. In households where someone must give up the job search, it is rarely the man. If the financial return does not justify the effort and time, women will be the first to stop looking for a job.

Returning to where we began: the length of the job search, already long, is set to grow longer and not only for women. As the wait extends, perseverance and patience will become essential virtues. The big question is whether families, society and policy can support young people through it.

The authors are, respectively, Union Bank Chair professor of economics, Great Lakes Institute of Management, and associate fellow, National Council for Applied Economic Research.

LAST YEAR, ABOUT 6.8 MILLION INDIANS HAD BEEN JOB HUNTING FOR OVER A YEAR

Book clubs define Mysuru's reading landscape

Often described as the cultural capital of Karnataka, Mysuru has long nurtured literature and the arts. Over the past 15 years, the city has also become known for its thriving reading culture through book clubs.

From a small women's reading circle to a network of English and Kannada clubs, the Mysuru Book Clubs Charitable Trust has expanded reading across age groups and communities, writes Lakshmi Palecanda

In 2009, entrepreneur, philanthropist and bibliophile Shubha Sanjay Urs, a native of Mysuru, floated the idea of an English book club for women and quickly found around 20 like-minded members. The first book they discussed was *The Kite Runner* by Khaled Hosseini.

That informal gathering marked the beginning of what later became the Mysuru Book Clubs Charitable Trust, officially registered in 2010. As the English clubs grew in number, Kannada literature groups were also launched. Today, the Trust runs 12 English and three Kannada book clubs.

The clubs introduce members to new perspectives, encouraging them to read beyond their comfort zones, engage with different interpretations, and explore diverse genres. This diversity is reflected in its last year's reads that included the *Idris: Keeper of the Light* by Anita Nair, *Things Fall Apart* by Chinua Achebe, *Dust Child* by Nguyen Phan Quoc Mai and *Snow Falling on Cedars* by David Guterson.

Over time, discussions extended beyond books, with members sharing how reading influenced or changed their lives. For instance, while discussing the book



Members of Mysuru Book Clubs Charitable Trust engage in an interactive session.

Primal Woman by Sunil Gangopadhyay, a member said she had never encountered Bengali society of the past outside the writings of Rabindranath Tagore. "Gangopadhyay's raw imagery was a revelation. It helped me realise the co-existence of two sides of society," she said.

The clubs function by invitation. Members include emerging and established writers coming from varied backgrounds, including teachers, professors, entrepreneurs, homemakers and retirees.

"I was always a voracious reader but never considered writing seriously until I joined the club. Sharing my thoughts with others helped me explore different genres with an open mind. They encour-

aged me to put my experiences on paper, which eventually led me to write my first story," says member Meena Joshi, a contributor to *Travel Tales*, an anthology.

Another member, Nishitha Krishnaswamy, says that seeing book club members publish their own books has made her realise how reading and writing can help individuals grow and transform in unique ways.

Initially, books were selected by Shubha, ensuring variety across genres, regions, and writers of different genders. Over time, members began suggesting and voting on titles to finalise a year-long reading list. The member who recommended the book led the discussion. Now,

each club meets once a month to discuss the selected title, hosted either in members' homes or at cafes and restaurants.

Nurturing young minds

Recognising that reading habits are best nurtured early, the Trust launched book clubs for children. There are currently three such clubs, where children are encouraged to read books, analyse them and write their own stories. The initiative has already nurtured young writers, with 11 members having written and published their own books.

Aakruthi Sharath, a Class 4 student, says joining the club shaped her interest in writing. "The club helped me become a story creator. My book is a collection of reflections and imaginative letters that explore the emotional world of a student," she says.

Nine-year-old Aditi Aditya who has authored a storybook, says she always dreamt of writing a book and that became a reality after joining the book club.

The Trust now runs book clubs in government schools. There are also two reading clubs in children's homes, three for differently-abled people, one for young adults and two for senior citizens.

In 2010-11, the Mysuru Book Club Charitable Trust expanded its activities to include author interactions, talks and book releases. Since then, it has hosted the release of over 100 books. Club

members have interacted with author and philanthropist Yasmeen Premji, novelist Mahesh Rao, Nobel laureate Dr Venkataraman Ramakrishnan, Booker Prize winner Shehan Karunatilaka and International Booker Prize winners Geetanjali Shree and Banu Mushtaq.

Mysuru literature fest

Among the Trust's most prominent initiatives is the Mysuru Literature Festival. Launched in 2017, it has become one of Mysuru's major events.

The Trust also organises annual quiz competitions for students. In partnership with Vani Vilas Ladies Club, headed by Pramoda Devi Wadiyar, it conducts a Kannada quiz competition for women.

For member Prithvi Sudindar, the festival has been a learning experience. "Watching Shubha curate the festival taught me the importance of planning precision and time management — lessons I now apply while organising events at a school for children with intellectual disabilities."

For Shubha, the journey has been deeply rewarding. She recalls a member saying, "We women are like endless books kept in the shadows. By reading the stories of others, we have found the courage to share our own stories — both orally and in writing."

That memory, she says, remains one she treasures the most.



KINSHUK GUPTA

NEET has revived anxieties it was meant to eliminate

I CLEARLY remember the Sundays in my matchbox hostel room, the smell of slick bhaturas wafting through the corridor, when I would doze off for a power nap that was supposed to last only 15 minutes, as instructed by our in-charge. Those days were filled with fear, frustration, exhaustion, and at times, anger. And yet, beneath all of it, there was also a dream: The thought of the day I would finally walk out of the examination hall after writing NEET and know that it was over, once and for all.

Now, as news of the cancellation of NEET 2026 begins to trickle in, and the possibility of a retest looms, my heart goes out to all those young students who believed it was finally over, only to find themselves dragged back into the same cycle of uncertainty and anxiety. What is particularly tragic is that NEET itself was designed to reduce stress on medical aspirants and spare them the burden of multiple entrance examinations. Instead, it seems to have reproduced the very anxieties it was meant to eliminate.

This leak is nothing new. The pattern has repeated itself over the years, with the 2024 controversy serving as the most recent reminder of how fragile the system remains. What troubles me most is the cyclical nature of these leaks. Every controversy prompts corrective measures that allow the next exam to proceed smoothly

until, inevitably, the cycle repeats itself.

This time, question papers were geo-tagged while in transit, and examination centres reportedly used 5D jammers and AI-enabled cameras. Yet, all of it proved insufficient. Perhaps that reveals that the issue no longer lies in isolated lapses alone, but in the deeper structural flaws of an examination system that continues to rely on stopgap solutions rather than meaningful reform.

JEE Main offers an interesting case in point, having built a largely meticulous and leak-resistant reputation over time. It is a completely computer-based examination with end-to-end encryption. Questions are systematically tagged and drawn from extensive software-driven pools that generate multiple sets across several shifts. Students are also given two attempts, in January and April, reducing the immense pressure of a single do-or-die day. Rather than relying on thousands of centres across the country, the system uses selected, standardised centres. As a result, even if a breach occurs, its impact remains far more contained. Further, we

must also begin to question the utility of NEET in its present form. The idea of a single three-hour examination determining a student's future has always seemed absurd to me. How can a person's competence to become a doctor be judged through 180 MCQs? The current format increasingly rewards rote memorisation over genuine under-

standing, reducing learning to speed, pattern recognition, and endurance.

Selections should move towards a more balanced and comprehensive system. A weighted consideration of school performance, board examinations, and skill-based evaluation would allow a broader understanding of a student's abilities. NEET could function as a qualifying examination, followed by assessments focused on reasoning, aptitude, and suitability for the profession. This could also help address the growing problem of score clustering at the top ranks, where tiny margins now separate thousands of students, making the present system an increasingly weak differentiator of merit. It could reduce the overwhelming reliance on coaching institutes, which have increasingly become hotspots of burnout, emotional distress, and extreme academic pressure. Such skill-based learning and assessment become even more important in a world increasingly shaped by AI, where the era of the fast-cramming medical aspirant is unlikely to survive for long.

The question we must ask is whether we are finally willing to move beyond temporary outrage, take responsibility for repeated failures, and genuinely learn from them. More importantly, are we willing to offer students a system that values their hard work and aspirations, rather than repeatedly testing the limits of their endurance?

Gupta is a doctor and writer

A weighted consideration of school performance, board examinations, and skill-based evaluation would allow a broader understanding of a student's abilities

The human side of AI in the classroom



**RITU
JAVA**

2ND OPINION

Artificial intelligence is no longer confined to the edges of innovation; it is steadily becoming part of the everyday rhythm of education. Its presence in school curricula is not loud or disruptive, but quietly influential, shaping how students engage with learning and how educators respond to their needs.

Not only are we seeing new tools; we are also seeing an entirely different learning experience emerging through this evolution. The advent of AI has opened up ways to support not only students' academic growth, but also the confidence and well-being that sit at the heart of meaningful learning.

For years, the classroom has been built on a straightforward approach - one teacher, one lesson, one pace. But all learners are different; some move ahead quickly,

while others need more time.

AI is starting to close this gap by identifying when a student is struggling or is ready to move on, allowing learning to adapt to each individual's needs. It also changes the role of teachers by taking over tasks such as grading and tracking progress.

As classrooms evolve, teachers are becoming guides and mentors who help students interpret material rather than simply instruct them. At the same time, learning remains deeply tied to confidence, motivation, and self-worth. In this context, AI can contribute positively to the system. If implemented correctly, it can support learning through timely feedback, personalised instruction, and early detection of disengagement, among other methods. It can support both performance and well-being.

Nonetheless, the story has another side.

The fear is that students will turn to AI and thoughtlessly use it as a shortcut — skipping the thinking and questioning that lead to genuine learning. Therefore, schools should teach students how to use AI responsibly rather than simply how to access it, with the goal of developing critical thinkers rather than merely efficient problem-solvers.

Then there are ethical questions, which are becoming increasingly important.

How is student data being used?

Are these systems fair to all learners?

Are we teaching children how to use technology responsibly?

These are not technical questions alone; they are deeply human ones. And they must be part of the conversation in every school that chooses to embrace AI.

The real impact lies in how thoughtfully schools integrate AI. The priority should be on building AI literacy rather than simply teaching its usage, while ensuring that teachers are equipped and trained alongside students.

Education has never been just about facts. At its heart, education is an experience rooted in relationships and mentorship. AI cannot replace that, and it should not try to. What it can do is strengthen it.

When AI is used thoughtfully in the classroom, it can make learning spaces more flexible and welcoming for all students, recognising and embracing the different experiences of each learner. It gives teachers more time to help students become more curious, confident, and expressive. Perhaps this is the real power of AI in the classroom: making education truly inclusive for everyone.

The Pioneer
SINCE 1865

The writer is the Principal of Dharav High School, Gurugram

Editor's TAKE

The AI gold rush and the jobs paradox

There is a mad rush towards AI learning, but will this craze actually create jobs or is the society prepared for disruptions AI may bring, is the big question

No technology in recent times has created a frenzy like AI. When AI exploded into the mainstream, it was welcomed with open arms because the promise it holds is immense. From healthcare to industry, from space exploration to defence – AI is a game-changer. But it has its downside too. Many professions are going to undergo an overhaul, and many people will lose their jobs. Estimates suggest AI could displace 92 million jobs globally by 2030, with up to 300 million jobs worldwide affected by automation. However, the situation may not be as grim as the figures suggest, as AI may also create jobs. People with AI skill sets will not only find employment but may also be better off. And that is the paradox of our times.

The very technology that is going to consume jobs is also going to create new opportunities. This contradiction is stark in our country, where unemployment is already high. Thanks to confusion and aggressive marketing, there is a great frenzy to learn AI skills – students, professionals, and even schoolchildren are rushing to enrol in AI courses in the hope of securing their future. AI has become the new career mantra. Platforms offering AI certifications, prompt engineering lessons, boot camps, and Generative AI modules are witnessing unprecedented demand. The fear of being left behind has created this mad rush to learn AI. The anxiety is understandable. Routine jobs are especially vulnerable. Entry-level white-collar roles may shrink significantly in the coming decade. It is like history repeating itself, when industrial innovations left workers jobless or when the introduction of computers led to job losses.

Yet, AI is not merely destroying jobs; it is reshaping them. Companies are increasingly looking for workers who can manage AI tools. The future may belong to professionals who combine domain expertise with AI literacy – finance plus AI, law plus AI, healthcare plus AI, and so on. This explains the extraordinary rush towards AI learning.

But there is also a danger of illusion. The booming AI education market has created thousands of courses promising instant expertise and guaranteed jobs. Many are superficial, outdated, or designed more for commercial profit than genuine skill-building. A certificate alone will not ensure employability. The real gap lies between learning AI theoretically and applying it meaningfully in real-world situations. There are other speed breakers as well. India still faces serious digital inequality. Educational institutions often struggle to update curricula quickly enough for a technology evolving almost every day. Moreover, ethical and regulatory concerns around privacy, misinformation, and bias remain unresolved. Governments, too, are yet to fully prepare for the social disruptions caused by AI. The market will eventually separate serious learning from certificate chasing. Employers will reward adaptability, creativity, and problem-solving, not merely familiarity with AI. AI literacy is not the same as job preparedness. AI can improve productivity and create opportunities, but it may also widen inequality. The real challenge is building a workforce that can think critically, adapt continuously, and combine human intelligence with artificial intelligence.

From Frankenstein to AI: Why intelligence without understanding remains dangerous

PREM KUMAR KALRA
JYOTI KUMAR VERMA
RUPALI SATSANGI

In Frankenstein, Mary Shelley imagines a scientist who succeeds in animating lifeless matter, only to discover that creating life is not the same as creating understanding. Victor Frankenstein's creature can perceive, feel, and even reason, yet it remains tragically excluded from the moral and emotional fabric that gives meaning to intelligence. The experiment does not fail because of a lack of technical brilliance; it falters because the creator does not fully comprehend the nature of what he has brought into being. This enduring literary moment offers a powerful analogy for our present engagement with Artificial Intelligence: we have learned to build systems that can process, predict, and perform, but we are still far from creating systems that truly understand.

Since the foundational work of Alan Turing, the modelling of Data, Information, Knowledge, and Wisdom has driven the design of intelligent systems. Successive generations of AI research have introduced increasingly sophisticated tools for managing uncertainty, including certainty factors, Bayesian networks, fuzzy logic, Dempster-Shafer theory, computing with words, and belief-based reasoning.

The modelling of Data, Information, Knowledge, and Wisdom to address everyday and complex real-life challenges has evolved significantly since

Turing introduced the concept of a thinking machine. Turing theorised that to imitate an adult human mind, we must consider the first state of the mind, the education it has received, and other experiences it has undergone. His suggestion of creating a computational model of a child's mind and then "educating" it continues to echo in neural networks and hierarchical learning systems today.

Yet, limitations persist. Neural network models have advanced in architecture design, learning schemes, and evaluation metrics, but their learning mechanisms remain fundamentally mathematical optimisation processes and do not faithfully represent how the biological brain acquires and applies knowledge. The brain integrates data, prior knowledge, and accumulated wisdom simultaneously; current AI relies largely on data alone.

Equally significant is the neglect of quantum information processing. While quantum approaches have shown measurable advantages in learning efficiency and computational performance, they remain largely unexplored within mainstream AI architectures. If quantum effects indeed play a role in biological neural processing, this omission represents a major missed opportunity. Similarly, higher-order cognitive functions — consciousness, abstraction, moral reasoning, and contextual wisdom — are either absent or only superficially approximated. The result is systems that are efficient but not genuinely intelligent in the human sense.

To move forward, integrating quantum and neuromorphic computing becomes essential. The classical Church-Turing thesis, long regarded as the the-



oretical foundation of computation, is now increasingly questioned in light of quantum computing capabilities. Emerging evidence suggests that quantum systems may process information in ways that classical systems cannot efficiently simulate. If such processes are intrinsic to human cognition, then only quantum artificial intelligence may eventually match the brain's energy efficiency and noise tolerance.

A key opportunity lies in integrating these paradigms to develop brain-like structures capable of solving problems efficiently with minimal energy and limited data, while simultaneously providing concise explanations. Neuromorphic and brain-inspired computing emulate synaptic plasticity and energy-efficient processing observed in biological systems, while quantum computing offers exponential speed-ups in optimisation and pattern recognition. Together, they present a pathway to overcoming the limitations of current AI. Future AI systems must also be capable of explaining their reasoning. Transparency, account-

ability, and trust cannot emerge from opaque systems. This requires constructing cognitive frameworks modelled after human processes such as reasoning, memory, and decision-making. Integrating biology, psychology, and mathematics is essential for enhancing both traditional and quantum information-processing capabilities.

Incorporating models of mind, consciousness, and cognition is equally critical. Human learning integrates data, knowledge, and wisdom, whereas current AI relies primarily on data. Bridging this gap demands innovative approaches to reasoning and abstraction. It also requires a new skilling ecosystem that integrates computational thinking, biological intelligence, quantum literacy, and ethical reasoning.

Recent scholarship views AI not just as a computational tool but as a system involved in knowledge generation, making it essential to preserve human agency and critical thinking. The emerging "Einstein Test" goes beyond the Turing Test by assessing whether AI can produce genuine scientific discoveries rather than merely imitate human responses. However, despite their capabilities, current AI systems still lack true creativity, imagination, and causal reasoning. Addressing these challenges requires a structured convergence of four disciplines: biology, psychology, quantum science, mathematics, and data science. This integration is not additive but synergistic, opening possibilities such as quantum neuroinformatics, in which insights from brain science and quantum theory inform one another.

The way forward demands clear research pri-

orities: quantum-neural interfaces, cognitive architecture integration, energy-efficient learning, and ethics and value alignment. However, progress will require more than technical innovation. Educational institutions must cultivate researchers capable of working across disciplinary boundaries and questioning foundational assumptions.

The trajectory of AI development cannot rely solely on scaling existing architectures. Their dependence on massive data, their opacity, and their indifference to ethics reflect the absence of biological, cognitive, and quantum insights. The framework proposed here is not a single technology but a research philosophy — one that treats the human brain as a guide to constructing genuinely intelligent machines.

The convergence of biology, information science, quantum science, and data science offers the most promising path towards AI that is not only powerful, but also comprehensible, efficient, and aligned with human values. Realising this vision will require interdisciplinary collaboration, ethical responsibility, and a deep commitment to understanding human cognition — one of the greatest open challenges of our time.

Prem Kumar Kalra is former Director, IIT Jodhpur. Jyoti Kumar Verma is Head, Department of English, Dayalbagh Educational Institute, Dayalbagh, Agra; and Rupali Satsangi is from the Department of Economics, Dayalbagh Educational Institute, Dayalbagh, Agra

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Devi Kar



The rewards & challenges of a mixed student body in school

Today, it is almost expected that all reputed schools will be "inclusive". It is important to clarify at the outset that being inclusive and having a mixed or diverse student population are two different things. The term "inclusive" has a strong element of intentionality, whereas having a diverse student cohort may just be incidental.

However, there are school leaders who look for homogeneity as they feel that a heterogeneous student population is likely to throw up all kinds of complications and challenges, which would definitely get in the way of a smooth teaching-learning process. Generally, teachers are used to dealing with mixed-ability classes and are trained in differentiated teaching, though some schools have a policy of grouping students into sections of each class according to their ability levels. I feel that this system may make teaching easier but it certainly introduces an element of undesirable superiority and inferiority complexes among the students and deprives them of learning lessons of life from students with different backgrounds and experiences.

In many coveted schools that are known for their academic excellence — not necessarily limited to commendable

public examination results — there may be diverse students, that is, hailing from different communities, regions or even countries, yet socio-economically they may be quite homogeneous. These schools ensure that only those candidates who are likely to perform well in academics are admitted, hence their classes do not pose the challenges that mixed-ability groups usually do. Other schools follow a policy where they admit a percentage of students who come from under-resourced and under privileged communities. In such cases, a different set of challenges has to be faced.

Some parents prefer to send their children to schools where they will interact with other children of the same kind. They feel secure that they don't have to worry about the polish and culture of the families of their children's friends, the language they would use and the kind of homes they would visit. Befriending children from a different socio-economic stratum altogether would generate all kinds of complications and complexities. Further, even if they open their own homes to such children, they wouldn't have the confidence to allow their children to visit theirs. Probably, the children from "poor" families would also hes-

itate to invite their affluent friends to their humble homes or even meet their uneducated, unsophisticated and vernacular-speaking parents.

Why is it, then, that some of us strongly feel that a truly mixed student population is desirable in any school for a rich and complete education to be imparted? If a student has to be prepared for the real world, which is one of the purposes of a school education, society outside the school walls must be reflected within, as far as possible. Children will not be able to face life beyond school if they are kept cocooned in an artificial setting. School should give them opportunities to interact with different kinds of children with varied family backgrounds. Not only will they be the richer for it, but they will develop the skills needed to deal with different kinds of people in their adult lives.

If a school has a policy of admitting students from different socio-economic strata, it indirectly strengthens the character of every student, irrespective of background. Those from wealthy homes learn to be compassionate and also to appreciate those who perform well without the facilities and advantages that they themselves are fortunate to have. The children of middle-class parents learn to be proud

of their identity and accept that there would always be people who were better off than them and others who were worse. In some schools there are some "free students", who are from low-income homes. I have seen them grow in resilience as well as self-confidence.

In a conducive environment, children learn how to deal with each other's sensitivities. I remember the time when I was discussing "inclusion" and "exclusion" with middle-schoolers, a student mentioned that it can happen even in an "expensive" school that a group of girls talking about their foreign holidays or the latest fashion trends make a few individuals feel "excluded" as they could not participate in such conversations. Similarly, those who come to school in chauffeur-driven limousines are unable to relate to the daily commute by public transport that many of their classmates are accustomed to. Reactions can be varied — ranging from envy and admiration to pity and condescension.

No doubt there are many complex issues that can arise in a diverse school community. However, the dividends are so rich that the challenges pale into insignificance. India is a country with multiple cultures and though there is a

strong drive to make everything standard and uniform, I fervently hope and pray that we will always support plurality. We would be sadly impoverished if we cultivated a single language, a single religion and a common diet. I remember how fascinated we were with the introductory chapter in our Indian history textbooks — it invariably dealt with the concept of "unity in diversity".

If India is micro-reflected in our school population in terms of the variety of culture, language and socio-economic background, we would be empowered to pave the path toward a closely-knit society comprising a rich fabric of peoples living in genuine harmony. Imagine, how colourless, dull and impoverished society — and consequently life — would be if we were able to interact only with people of "our kind".

Nature made sure of a magnificent world full of different kinds of terrain, flora, fauna and yes, the human species, all within a remarkably balanced ecosystem. We must never forget that our greatest lessons are usually learnt from Nature and the Universe.

The writer is a veteran school educator based in Kolkata

**CAREER CUES****Richa Dwivedi Saklani**

What happens once a student enters a top university and quietly begins to struggle? Anand did everything right: top grades, a prestigious school, and an Ivy League admit. Yet, within a year, he was back home, overwhelmed and unable to cope. A high performer in his grade, Anand had begun to show emerging signs of attentional difficulties and procrastination that were manageable in a structured environment. But with total independence and no restrictions, Anand began to struggle. Socially popular and well-liked, he found it hard to say no to parties. He began missing classes, failing exams, and falling behind. What began as small lapses slowly started to compound and, within a year, the gap became too difficult to bridge.

Anand is not alone. Many high-performing students struggle at university for reasons that have nothing to do with intelligence. Here are some insights on the reasons for this.

Factors

The university requires students to adapt to an environment that provides little structure and almost no accountability. No teachers checking homework, no preparation notes before exams, and no parents to manage routines and deadlines. Parents, teachers and career counsellors often assume academic success in school to be a blueprint for suc-

cess at university. But university is not school; it demands independence, discipline, and self-regulation in ways students are often unprepared for.

Developmentally, between the ages of 13 and 18, teenagers are forming their identity. They are trying to establish who they are, what their friends think of them, and where they fit in socially. After the age of 18, as they enter college, they are fine-tuning this identity while also navigating new peer groups.

Success is now determined by many other factors: initiative and clarity (of goals across academics, career, and social life), executive function (evidence

of planning, prioritising, and completing tasks independently), identity and peer alignment (choosing friends who reflect one's values, interests and choices), interpersonal skills (navigating social situations and being able to set boundaries), and resilience (ability to recover from setbacks).

In some cases, when these factors are not well-developed during teenage years, a familiar home and school environment often supports and compensates. Lack of planning and organisational skills may be masked by parents completing projects or constantly setting study reminders. Poor social skills may

go unnoticed in a stable school and familiar social life for many years. These seemingly minor gaps often become amplified at university. In such situations, students can navigate these circumstances through targeted counselling and a renewed focus on building specific skills.

As students enter senior school, it is advisable to look out for some red flags: Are parents or counsellors more worried about college than the child is? Does the student struggle with basic responsibilities such as deadlines, punctuality, and follow-through? Are their peer relationships either isolated or overly influenced? Do they seem to



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lack direction or internal motivation? Do they avoid conversations when overwhelmed?

Tips for counsellors

If you pick up red flags, discuss them early with parents and brainstorm with the student on the implications.

To help build executive function, advise parents to consciously, carefully, and gradually step back from reminders and supervision, while clearly communicating why they are doing this. Encourage parents to share their concerns and align with their child on the need to take on responsibility for themselves.

Bring awareness to the extremities and the impact of unhelpful peer group influence, and on how to retain identity while being part of a group.

Try to understand why there is a lack of motivation. What is the issue: identity, competency, or complacency? Or is lack of family support or involvement?

Be supportive and create a safe space for discussion. Listen without judging or offering quick solutions. Do not dismiss concerns as trivial or insignificant.

If there are persistent or chronic difficulties, refer the student and parents to professional help.

Ultimately, the goal is not just to get into a good university but to be able to thrive there.

The writer would like to acknowledge the contributions of Dr. Pramit Rastogi (Medical Director, Steps Center for Mental Health) to this article.

The writer is Founder and CEO, Inomi Learning, a Gurugram-based career and college guidance firm. info@inomi.in

Guten tag, anyone?

A few tips for students planning for higher education in Germany

Latika Chaudhary

Over the years, Germany has steadily emerged as a higher education destination with several universities being featured in global rankings. The main reason is the availability of low-cost or tuition-free education at many public universities, especially in Engineering, Technology, Management, and Natural Sciences.

However, there is a misconception that Germany offers completely “free education.”

Here are a few key requirements that students should know about studying in Germany.

Qualifications and language: German PG programmes require a suitable undergraduate degree with strong academic performance. Some universities may also evaluate the UG programme curriculum to ensure it aligns with the subject.

Another important requirement is language proficiency. Since many courses are now being offered in English, students are advised to take English language tests such as the TOEFL. At the UG level, programmes are also offered in German, so students must demonstrate proficiency through recognised German language certifications.

Apart from academic needs, it is better to have basic German language skills to integrate better into the local environment and improve employment prospects.



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APS Certification: The Academic Evaluation Centre (APS) certification is a mandatory requirement. APS mainly verifies academic documents and ensures that academic qualifications meet the standards required.

Indian students should get an APS before applying for a student visa. This can be time consuming, so early applications will help avoid delays in university admissions and visa processing.

Finances: Though public universities have minimal tuition fees, showing proof of funds through a blocked account of €11,904 is required to assess the student's ability to cover estimated living expenses such as accommodation, food, health insurance, transportation, and other daily expenses for one year.

Students have to plan accordingly and explore scholarships and part-time work opportunities to cover costs.

Timelines: There are two main admission cycles in German universities. Winter intake begins in September- October, and summer intake in March-

April.

The first is more popular among international students, as it offers the largest number of programmes. Ideally, prepare 10-12 months in advance, as the application process involves multiple stages. The visa process starts as soon as admission is secured. This requires submission of documents such as admission letters, proof of finances, health insurance, and APS certification.

Lodging is a challenge and needs to be addressed early. University accommodations are limited and shared accommodation is available at private homes in major cities. Plan ahead for food and lodging.

There are several formalities to be completed once students arrive, such as registering the residence, opening a local bank account, and obtaining a residence permit.

Common mistakes

Applying late, missing deadlines, not understanding programme requirements, underestimating the cost of living and not learning basic German are some of the common avoidable mistakes. Students also need to invest enough time and effort to research universities and understand their processes. Studying in Germany requires strategic planning, informed decisions, and a clear understanding of academic-administrative prerequisites.

The writer is Chief Executive Officer, YES Germany

Why education must teach systems thinking



**SURESH SHOBHIT
PRABHU MATHUR**

For over a century, modern education has been organised around disciplines. Knowledge has been divided into subjects, departments, and specialisations, each with its own methods, vocabulary, and carefully guarded boundaries. This structure served an important purpose. It enabled depth, rigour, and the steady advancement of knowledge within well-defined domains.

But the world for which this model was designed no longer exists.

The defining challenges of our time do not arrive neatly packaged within disciplinary boundaries. They emerge at intersections; messy, fast-moving, and consequential. Climate change is simultaneously a scientific, economic, and political problem. Artificial intelligence is as much about ethics and labour markets as it is about computation. Global supply chains are shaped as much by geopolitical calculation as by engineering efficiency. The student trained exclusively within a single discipline is, increasingly, unprepared for the reality they will inherit.

The Synthesis Problem

Our curricula continue to rest on a quiet assumption: that if students are trained deeply in individual disciplines, they will somehow synthesise this knowledge when required. This assumption is no longer tenable.

Synthesis is not an automatic outcome of exposure. It is a learned capability; one that requires deliberate cultivation, structured practice, and explicit instruction. What is missing in most educational systems is not more content. It is a different foundation: ways of thinking that enable individuals to operate in a world of deeply interconnected systems.

Geopolitical Systems Thinking as a Foundational Capability

Consider helium. Its role in semiconductor manufacturing is technical and largely invisible to the public; it is used to cool equipment and maintain clean manufacturing environments. Yet, helium supply is tied to natural gas extraction, concentrated in a handful of geographies including the United States, Qatar, and Russia. A conflict affecting energy markets can constrain helium availability, which in turn affects semiconductor fabrication yields, slows the development of advanced chips, and cascades into the broader computational and AI ecosystem.

India's semiconductor ambitions make this chain directly relevant.

The government's India Semiconductor Mission, backed by a production-linked incentive package, is a significant industrial policy bet. But the success of that bet depends not only on engineering capability and capital investment. It depends on securing access to gases, chemicals, and equipment that are themselves embedded within complex geopolitical dependencies; many of them involving China, the dominant processor of rare earth elements critical to electronics manufacturing.

To understand these chains is not to accumulate facts across physics, engineering, and international relations. It is to apply a way of thinking; one that connects resource flows, technological systems, and structures of political power into a coherent whole. This is what the discipline of geopolitical systems thinking offers, and what current curricula do not systematically develop.

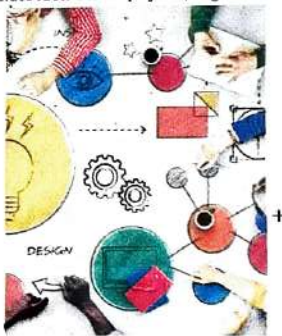
What Must Change

The implications for curriculum design are consequential. First, ways of thinking must be treated as foundational, not incidental. Geopolitical systems thinking: the ability to trace interdependencies across domains, recognise how disruptions propagate through interconnected systems, and anticipate second-order effects should be explicitly taught, practised, and assessed. It cannot be left to emerge organically from interdisciplinary exposure. It must be built in. Second, this kind of thinking must be embedded across disciplines, not cordoned off in standalone electives. Engineering programmes should incorporate geopolitical risk into supply chain and materials curricula. Business schools should situate strategy within the realities of trade regimes, sanctions, and resource dependencies. Policy programmes must integrate technological and scientific literacy as core competencies, not optional supplements.

India's National Education Policy 2020 gestures in this direction, calling for multidisciplinary learning and flexibility across streams. That instinct is correct. But multidisciplinary alone, simply combining subjects, does not automatically produce the integrative thinking the moment demands. The goal is not breadth for its own sake. It is the deliberate development of cognitive tools that help students situate their knowledge within larger systems of power, resource, and consequence.

Third, pedagogy must shift decisively towards case-based and problem-driven learning. Students should be required to map connections, trace cascading effects, and reason under conditions of genuine uncertainty; not as an enrichment exercise, but as a core mode of instruction. India's own experience: the API crisis, the fertiliser shock, the semiconductor dependency question, the evolving geometry of the Indo-Pacific, provides a rich and underutilised set of cases for exactly this kind of teaching.

The twentieth century privileged increasing specialization, rewarding those who developed deep expertise within narrowly defined domains. The emerging century, by contrast, places greater value on the capacity to integrate knowledge, interpret complexity, and act across disciplinary boundaries. If education is to remain responsive to contemporary challenges, its foundational assumptions must evolve accordingly. The curriculum of the future will be shaped not only by the content it delivers, but more fundamentally by the modes of thinking it cultivates.



Suresh Prabhu is a former Cabinet Minister and Shobhit Mathur is the co-founder and vice-chancellor of Rishihood University

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Can Indian IT make the most of the AI age?

PRAVIN KAUSHAL

For more than two decades, India's information technology industry built something genuinely admirable: a world class services engine that became the back office of the global economy. TCS, Infosys, Wipro, HCL Tech, and Tech Mahindra collectively generated hundreds of billions of dollars in revenue, employed millions of engineers, and powered an entire ecosystem of technical education across the country.

Then came the AI revolution - and the industry was caught almost entirely unprepared.

The launch of ChatGPT in November 2022 was not a sudden shock. It was the visible peak of a transformation building since deep learning went mainstream after 2015. But Indian IT firms, locked into low-risk service contracts and investing less than three per cent of revenues in R&D compared to ten to twenty per cent at global technology companies, had neither the incentive nor the institutional culture to see it coming. By the time the alarm was impossible to ignore, the frontier had already been claimed by OpenAI, Google DeepMind, Anthropic, Meta, and a set of well-funded Chinese laboratories.

What followed was a period of genuine reckoning. The traditional pyramid model, in which armies of junior engineers churned out standardised code with revenues scaling directly with headcount, began to crack. AI could now perform many of those base layer tasks: routine code generation, testing, data processing, and documentation. At the same time, the growth of over 2,000 Global Capability Centres meant multinationals that once outsourced wholesale were now building substantial in-house teams in India. The existential question became unavoidable: if Indian IT

cannot build the AI, and its traditional clients are increasingly building their own teams, what exactly is the industry's role?

Four structural failures explain why Indian IT missed the frontier AI race entirely.

The first is the services trap. Indian IT thrived on labour arbitrage and client-centric execution. Revenue was built on contracts, not on products or intellectual property. There was little incentive and considerable risk in allocating capital to speculative, long-horizon research. Shareholders were rewarded with consistent cash returns, not with bold technology bets.

The second was negligible R&D investment. While global technology companies reinvested ten to twenty per cent of revenues into research, Indian IT averaged below three per cent. The gap was not primarily financial. These were profitable businesses with strong balance sheets. The failure was cultural and strategic, rooted in leadership cadres drawn entirely from delivery backgrounds.

The third was a compute deficit. Training large-scale AI models requires enormous concentrations of GPU infrastructure. The hyperscale data centres needed for frontier model development were concentrated in the United States and China. India's data centre buildout, now accelerating, is doing so primarily to serve Western technology companies, not to support indigenous model development.

The fourth, and perhaps most consequential, was brain drain. India produces world class AI researchers, but the compensation and research culture available at well-funded global laboratories consistently pulled the country's best minds abroad. Without an AI research culture at home, there was no institutional foundation from which frontier models could emerge. This remains true today.

Here is what the frontier AI companies have discovered, and what has opened the door for Indian IT's current strategy: powerful models, when deployed in actual enterprise environments, frequently do not work as expected.

This is not a criticism of the models. It is a structural reality. Real enterprises, whether banks, manufacturers, hospitals, or logistics companies, operate in complex environments shaped by decades of legacy systems, proprietary data formats, regulatory requirements, and organisational habits. A general-purpose, large language model cannot simply be pointed at a company's data and asked to transform its operations. The integration, customisation, governance, and change management work required to make AI function in production is substantial. And frontier AI labs are neither equipped nor inclined to do it.

This is the middle layer. It is where Indian IT is now staking its future. A chief executive of a large non-technology enterprise does not want to build an AI team from scratch, navigate a rapidly shifting landscape of models and tools, or spend two years on a technology project while running a day-to-day business. He wants a trusted partner who will take the complexity off his hands and deliver measurable outcomes. For decades, that trusted partner was an Indian IT firm deploying enterprise software or migrating infrastructure to the cloud. Now, the same relationship is being offered for AI.

Each of the five major Indian IT companies has articulated this strategy through a distinct branded platform.

TCS has launched WisdomNext, a unified enterprise AI orchestration platform built around multi LLM integration, AI agent deployment, and governance. Its differentiator



is an integration first approach that combines cloud and AI delivery under a single contract.

Infosys has built Topaz, the broadest enterprise AI stack among Indian IT firms. With access to over 12,000 pre-trained AI assets, knowledge graphs, and workflow automation tools, it is heavily platformised and oriented toward specific industry verticals.

Wipro's ai360 embeds generative AI across every service, platform, tool, and delivery process. It offers multi cloud AI architecture support and a strong emphasis on responsible AI, including ethical filters and compliance guardrails.

HCL Tech's AI Force and AI Foundry platform focuses on agentic AI and workforce automation, featuring a modular AI stack, software engineering automation, and IT operations AI. The strategic emphasis is on engineering-led productivity.

Tech Mahindra's Project Indus takes a domain led approach, with depth in telecom, banking and financial services, and manufacturing. It reflects the company's view that industry-specific AI deployment will command a premium over horizontal solutions.

There is reason for cautious optimism. Enterprise AI implementation

is a genuine, high-value problem, and Indian IT's combination of enterprise relationships, domain knowledge, and delivery capability gives it a credible foundation. But the risks are real. Frontier AI labs are not standing still. If the implementation layer becomes commoditised, the current platform investments may prove insufficient.

The window is not unlimited. Enterprise clients are making long-term partnership decisions now. The firms that establish credibility and deliver measurable results in the next two to three years will be well positioned for the decade ahead. Those merely rebranding existing services with AI labels will be exposed.

India will not lead the next generation of AI. That moment has passed. But a nation of skilled implementers, with deep enterprise relationships and a demonstrated ability to deploy complex technology at scale, is not without a future in the AI age. Whether Indian IT makes the most of that future is the question that will define the sector for the next decade.

(The writer is director-Mrkal (AI/Data Center) and a young alumni member, Government Liaison Task Force, IIT Kharagpur. He tweets as @pravinikaushal)

Ten strategies for impactful internships

A JOSEPH DORAIRAJ

Internships help both stakeholders — students and potential employers. They enable students to gain firsthand knowledge of the workplace, giving them an idea of the demands of the actual working environment and the professional and life-oriented skill sets required to survive and thrive in such settings. Internships help recruiters, who will have the option not only to mentor interns but also to absorb them once they are career-ready.

Higher education institutions should develop appropriate strategies to improve the quality of internships.

■ 1. Internships should be mandatory. All higher education institutions should ensure the integration of theory and application, which ultimately leads to knowledge production.

■ 2. Internships should be introduced only when students have acquired enough domain knowledge. Put differently, first- and second-year undergraduate students are not yet sufficiently oriented or mature enough to pursue internships that require interacting with external stakeholders, which is demanding and could even dent their self-confidence when things go wrong. It should be borne in mind that third-year undergraduates and post-graduates



are internship-ready; therefore, internships should be scheduled after the fifth semester for four-year UG degree programmes and after the first semester for PG programmes.

■ 3. When students are asked to find internships on their own, the head of the department or the course teacher should provide them with recommendation letters that highlight their interests and aspirations, as well as their specific internship-oriented skills, which will facilitate organisations' decisions about awarding internships.

■ 4. Students should be encouraged to seek intern-

ships at start-ups and other growing organisations, where there are better opportunities to learn than in well-established organisations, where they will be required to stick to a routine. Quite a few establishments keep interns at the periphery and treat them as 'kids' who need certificates. Therefore, students should be enterprising while choosing organisations for internships.

■ 5. The internship duration should be clearly spelt out and should be worked out in terms of academic credits. Currently, internships last a few days to a few weeks and sometimes a whole semester, especially for students of professional courses. Clear norms, syncing duration with credits, should be in place to make internships structured and productive.

■ 6. Internships should be supervised by both the course teacher and the on-site expert. And there should be coordination between the two, especially regarding feedback and midcourse corrections. A little handholding would go a long way, especially in the initial stages, and give the interns the confidence and orientation to march ahead.

■ 7. Institutions should conduct exit interviews upon their students' completion of internships. Such analysis, examining the learning outcome of these immersion programmes, will help institutions make appropriate decisions regarding sending sub-

sequent batches to these workplaces. Organisations also benefit from exit interviews, which shed light on which aspects of internships were helpful to students and what needs to be customised to suit students' aptitudes and skill sets.

■ 8. Institutions should ink MoUs with organisations that send their students for internships. Such formal agreements help both parties and make it relatively easier to secure internships.

■ 9. Students, even after collecting their completion certificates, should be encouraged to remain in touch with the organisations where they interned, and this will brighten their employment prospects. In due course, these organisations will view their former interns as potential future employees.

Finally, internships should not be allowed to degenerate into money-making enterprises by unethical CEOs who capitalise on the high demand for internships. The introduction of the four-year undergraduate degree programme, in which internships, along with other forms of experiential learning, have been made mandatory, has sharply increased the demand for internships and encouraged 'paid' internships; this trend has to be dealt with decisively.

(The author is an academic based in Dindigul, Tamil Nadu)

Why structured classrooms are still relevant

NAVYA GUBBI SATEESHCHANDRA
AND NILOUFAR AMINPOUR

What if the most "traditional" form of teaching is, in fact, what 21st-century learners need—only delivered via a different medium? What if the most "traditional" way of teaching is exactly what modern learners need—just done differently?

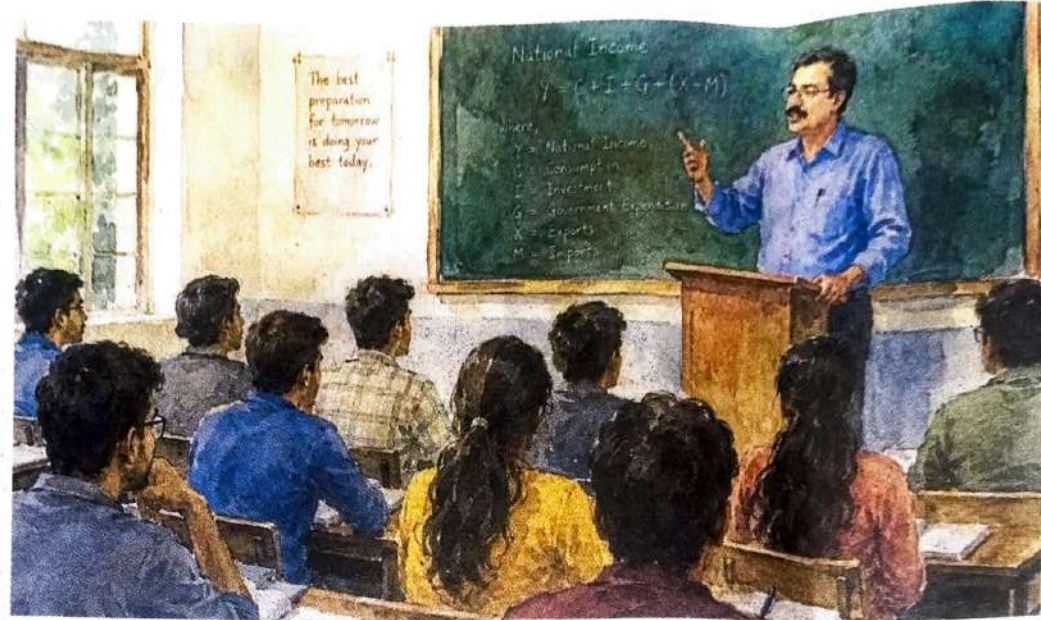
Didactic teaching is a traditional, teacher-centred method of instruction where the teacher directly delivers information to students, often through lectures or explanations. This has been considered old-school for years. It is criticised for lacking interactivity and creativity. However, this is far from what classrooms look like today. When this structure is intertwined with technology and newer ways of doing things, it makes a big comeback.

Clarity in teaching is more important than ever in an era of information overload and shrinking attention spans. Structured instruction slices through the noise, effectively leading both educators and learners forward. It enables profound understanding, intellectual rigour, and conviction when applying knowledge to complicated situations in real life if given thoughtfully. Clarity in teaching is more important than ever in an era of information overload and shrinking attention spans. Structured instruction slices through the noise, effectively leading both educators and learners forward.

What is didactic teaching?

The essence of didactic teaching is simplicity. From the start of the course, the approach emphasises clear, structured explanation. Lessons follow a logical sequence, enabling students to build knowledge step by step.

This clarity is valuable. Today's learners have access to a wealth of information online, but most of it is misplaced or unreliable. A proper lesson structure puts them in the present and allows for deeper understanding, avoiding confusion. And the criticism is not without good reason. Many traditional teaching methods, like lectures, often turn students



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into passive audiences. There was no scope for conversation, innovation or criticism. Many learners felt disconnected.

But this rigid style was unable to cope with fast-changing classrooms. Students craved more engagement and flexibility.

What changed?

And with that came some new technology-based teaching methods.

Teachers use videos, interactive slides and simulations. Lessons are no longer spoken—they are shown, explored, and felt. During the class, students interact through quizzes, polls and discussions. One of the biggest changes is real-time feedback. Teachers can instantly check understanding using online tools.

The lesson can be adjusted instantaneously if students have difficulty. Do not forget that blended and flipped learning are also a part of it. Students may listen to lectures at home while spending classroom time discussing or solving problems. They can make the learning experience more engaging while still providing structure.

What does it look like today?

Modern didactic teaching is no longer passive. It blends structure with interaction. For example, in

real-world scenarios, most teachers now share recorded lessons on Google Classroom or Moodle. Students go through these at their own pace. Then, class time is used for group work or case discussions.

For example, a science teacher might break down the process of climate change and then show its global effects using a simulation tool. Students can try scenarios that give them instant, visible results. Many universities employ a hybrid approach, combining live lectures with applications such as Kahoot or Mentimeter for live quizzes during lectures. Students answer questions in class, and professors adjust their teaching based on their responses.

In all these scenarios, the teacher, as the guide, still exists—but students interact with the material in person.

Why does it still matter?

For subjects like Economics, Mathematics, Science, and Language, you need a strong foundation. Structured teaching means ensuring we have captured the key concepts before moving forward.

However, today it does more than that. In such a situation, discussions on ethics, digital literacy, and critical thinking can be included in lessons by teachers. What this means is

you do not learn facts, but how to question and use them. This method is also practical. It works well in big classrooms where you cannot provide individual attention to each student.

Because grading and attendance are handled through digital tools, teachers can focus more on teaching. Crucially, it supports access to education. With online courses, former e-learning schools can structure this learning content and provide high-quality examples, effectively creating a virtual classroom. This fills the access and opportunity gaps.

The balance that works

Balance is where the true power of modern didactic teaching surfaces. It preserves the clarity and discipline of traditional instruction. Simultaneously, it also pursues flexibility, interaction and the use of technology.

This blend creates a structured learning environment while remaining enjoyable. You make a career out of giving students a solid foundation and helping them establish those life skills.

Ultimately, didactic teaching has endured by evolving, and in doing so, remains one of the most impactful and effective methods of instruction today.

(The authors are professors, Berlin School of Business and Innovation, Berlin, Germany)



Gender, caregiving, the law in Indian research funding

India's scientific ambitions are increasingly visible in space missions, pharmaceutical research, and peer-reviewed scholarship. Yet, its institutional culture that sustains this continues to marginalise many researchers. Women in academia, especially in mid-career stages, face a convergence of professional and domestic responsibilities that their male peers rarely experience to the same extent. Age relaxation provisions in research grants were introduced to address this gap, but as these policies evolve, they require closer scrutiny to improve their effectiveness rather than weaken them.

The legal foundation for gender-sensitive research policy in India is not merely permissive; it is, in important respects, directive. Article 15(3) of the Constitution allows the state to make special provisions for women and children, and this has long been read as enabling affirmative measures in employment and public opportunity. Article 16 reinforces equality of opportunity without precluding measures that correct historical disadvantage and read alongside the Directive Principles which speak of equal right to an adequate means of livelihood. There is a coherent constitutional argument that funding agencies have not just the authority but also a degree of responsibility to ensure women researchers are not structurally penalised for caregiving.

Article 51A(e), the fundamental duty to renounce practices derogatory to the dignity of women, adds another dimension. A policy environment that routinely produces grant cohorts with negligible female representation is not a neutral outcome – it reflects accumulated disadvantages that the constitutional framework obliges institutions to address.

The legislative gap at heart of the problem

The Maternity Benefit (Amendment) Act, 2017 remains the most substantive legal protection available to women. The 2017 amendment extended paid maternity leave to 26 weeks for women with fewer than two surviving children and introduced provisions for crèche facilities in larger establishments. For women in academic research, this matters – but imperfectly. Many researchers at the postdoctoral or early career stage are employed on fellowships, project positions, or contractual appointments that fall outside the clear ambit of the Act.

Equally overlooked in current frameworks is the return to research after childbirth. Women returning from maternity leave often face disrupted laboratory work, changed collaborations, and misaligned grant timelines,



Nabeela Siddiqui

Assistant Professor,
Vinayaka Mission's
Law School, Vinayaka
Mission's Research
Foundation (Deemed
University), Chennai

with little formal support for reintegration or reduced workload. The expectation of immediate full productivity after childbirth is unrealistic and requires clear policy intervention rather than informal goodwill from supervisors.

India has no central legislation on paternity leave. Central government employees receive 15 days under the Central Civil Services (Leave) Rules, 1972, but this is administrative rather than statutory, and no comparable entitlement exists for researchers funded through extramural grants. This legislative asymmetry – generous maternity protection, minimal paternity provision – is not incidental. It shapes how institutions and funding agencies think about caregiving, and it partly explains why age relaxation policies have been designed exclusively around women rather than around the act of caregiving itself.

The case for women-specific support in research funding is supported by persistent data, not assumption. The All India Survey on Higher Education (2021-22) shows that the higher education system had nearly 16 lakh faculty in 2021-22 with 57% male and 43% female. Women remain underrepresented in faculty positions across central universities and especially in science and technology institutions. The Science and Engineering Research Board (SERB) has also reported consistently lower application and success rates among women researchers.

The pattern is clear. Women who complete doctoral degrees in their mid-to-late twenties enter postdoctoral work at the same time as peak domestic responsibilities. Balancing grant cycles, publication pressure, travel, and childcare is not shared equally in academic households. Studies on dual-career faculty, including at the Tata Institute of Social Sciences, show that women typically bear a greater share of domestic work regardless of professional status. The consequences are measurable: delayed publications, gaps in grant records, and reduced international visibility. Age relaxation, in this context, is a partial remedy for a documented structural disadvantage.

What the courts have suggested

The Supreme Court of India's reasoning in *Vijay Lakshmi vs Punjab University And Others* (2003) is relevant here. Addressing preferential provisions for women in service matters, the Court drew a clear distinction between formal equality and substantive equality, which accounts for unequal outcomes.

It held that measures favouring women are constitutionally valid when they address demonstrated disadvantages. This logic applies to

research grants as well: extending eligibility windows for women is not preferential treatment, but a corrective to structural disadvantage.

None of this implies that current policy is adequate. Age relaxation policies such as those under SERB address eligibility at the application stage but not the everyday conditions of research. A five-year extension to the upper age limit may allow women to apply for grants they would otherwise miss, but it does not provide childcare support during proposal writing, institutional support during maternity leave, or re-entry funding after career breaks.

There is also the question of who the policy excludes. A single father or a man caring for an ailing parent may also face significant career disruption, but the policy does not recognise him. This is not an argument to weaken protections for women, as evidence shows that caregiving burdens are not equal in Indian academia. Rather, it calls for an additional layer of support for documented caregiving responsibilities, while retaining and strengthening women-specific provisions that address the more widespread disadvantage.

What more considered policy would be

The National Education Policy 2020 gestures toward institutional flexibility and faculty wellbeing, but these commitments have not yet translated into binding research funding policy. That gap is overdue to be addressed. Funding agencies should consider no-cost grant extensions for documented caregiving periods, re-entry fellowships for women returning to research, and flexible milestone reporting for researchers with caregiving responsibilities. Several European research councils have implemented similar measures, showing that gender-neutral caregiving support, alongside gender-specific provisions, can improve equity without appearing arbitrary.

Gender-based age relaxation in Indian research grants is constitutionally grounded and empirically justified. The disadvantage it addresses is real, documented, and persistent. Removing it in the name of gender neutrality would be a policy error not supported by evidence. What is needed instead is a layered approach that retains support for women researchers while adding provisions for other caregivers. India's research institutions owe their women scholars not just formal access to grants but the structural conditions in which a sustained research career is genuinely possible. Age relaxation is a beginning. It should not be mistaken for an ending.

The structural gender gaps in India's research ecosystem must be addressed

NEET paper leak raises larger questions, calls for honest reckoning

FOR THE third time in recent years, the NEET examination has been marred by a paper leak — a phrase that has become, with grim predictability, a seasonal feature of India's medical admissions calendar. The hopes of 22 lakh students are once again temporarily dashed. They go home, not relieved of a burden but still high-strung, facing a repeat examination and all the uncertainty that lies beyond it. Young men and women who have spent years in relentless preparation — after-school coaching, sleepless nights, the full weight of family expectation — have met their first roadblock before their journey even began. The frustration on their faces, visible in images circulating on social media, is not the frustration of a single bad morning. It is the accumulated anguish of years.

The paper leak raises questions that ought to disturb us deeply. In an era of digital encryption, blockchain-secured communication, and multi-layered cybersecurity protocols, how does a national examination of this magnitude remain so porous? The answer points, regrettably, toward structural corruption. Well-organised networks — often traceable to the commercial interests of large coaching institutions anxious to demonstrate the success rates of their students — appear to have cultivated contacts within the examination ecosystem itself: Those involved in question setting, collation, or distribution. It must also be said that NEET has provided an unintended but powerful impetus to the mushrooming of coaching centres across the country, several of them operating in conditions of overcrowding, unrelenting stress, and performance pressure that exceed reasonable human limits, driving a distressing number of aspirants toward de-

pression, and some to suicide.

It is worth returning to first principles. NEET was introduced in 2013 to ensure uniformity in assessing eligibility for medical education, to uproot the menace of capitation fees, to end corruption in seat allocation, and to establish merit as the sole criterion for selection. These were not small ambitions. A decade later, each of these objectives deserves honest appraisal, not institutional self-congratulation.

Capitation fees have not been uprooted. Several private medical colleges continue to collect substantial sums above prescribed limits from candidates who possess the grades but not the means. More troublingly, the structure of NEET cut-offs has produced a perverse outcome: Low qualifying percentiles now favour the less meritorious but financially resourceful candidate over the more meritorious but economically constrained one. The student, compelled to borrow in order to capitalise on a hard-earned rank, enters medicine carrying a debt that reshapes every professional decision thereafter. The ethic of service that might have taken root at the threshold of a career is not lost through moral failure — it is foreclosed by financial obligation. Such graduates are driven, almost by design, into early private practice and commercially induced clinical behaviour. Ahead of them lie not one but two further examinations — NEET Postgraduate and NEET Superspeciality — with the same rignarole. This repetitive cycle leaves doctors burnt out and diminished in their zeal to serve.

The consequences extend further. The middle-class graduate is pushed toward revenue-generating practice. Many of the most talented, merit-driven graduates — drawn by better professional environments and more



SUNIL
CHANDU

Incompetence, lack of integrity, and unacceptable examination conduct have brought the standing of this national examination to its lowest imaginable point

enabling systems abroad — leave at the first opportunity. Both outcomes represent a loss the country can ill afford. India's doctor-to-population ratio in several states remains dangerously below acceptable benchmarks. Community health centres across Tier 2 and Tier 3 districts report chronic vacancies. This is not a future concern — it is a present emergency. An admissions system that consistently diverts talent away from public service is not a neutral administrative arrangement; it is a structural problem with direct health consequences.

None of this is to say that NEET has produced nothing of value. The creation of a common national platform, the reduction in the multiplicity of competing entrance examinations, and some improvement in transparency within government college admissions are real, if partial, achievements that deserve acknowledgement. But partial success does not excuse systematic failure, and the failures are now too numerous and too consequential to be addressed by incremental adjustment.

The time has come for a rigorous, multi-pronged retrospective appraisal. Have the objectives set at conception in 2013 been met? Has NEET produced better medical graduates for the nation? Has it meaningfully curbed capitation, quantitatively and qualitatively? Has it increased the supply of doctors available to serve in health-im-

poverished geographies? Has it brought greater equity in the allocation of medical seats for economically disadvantaged and tribal communities? Has it, in any measurable sense, produced a generation of doctors who place the patient above self-interest? These are not rhetorical questions. They are the terms on which this examination

was originally justified, and the country is owed honest answers.

The government's immediate obligations are clear: Conduct the rescheduled examination with security measures commensurate with the stakes involved; provide verifiable redress to affected students through fee refunds and adequate notice; and institute an independent forensic investigation into this and previous leaks — one that names, charges, and prosecutes those responsible. The leadership of the National Testing Agency must account publicly for a pattern of failure that has become indefensible.

Beyond the immediate, a larger act of institutional honesty is required. The reform needed is not cosmetic. It must address examination security, fee regulation in private medical colleges, incentive structures that make rural and public service genuinely viable, welfare standards for aspirants caught in the coaching ecosystem, and accountability mechanisms for the institutions that have profited most from the current disorder.

Incompetence, lack of integrity, and unacceptable examination conduct have brought the standing of this national examination to its lowest imaginable point. That is not a political statement. It is a description of what is.

India has produced, across generations, physicians of extraordinary skill and dedication who have served this country and the world well. The question before those who govern this system today is not a complicated one: Does the process we have built honour the students we are putting through it, and does it serve the people those students are meant to heal?

The writer is former director, CMC Vellore

Bright Quantum Morning

Quantum entanglement suggests a fundamental oneness - a state where separate entities are, in fact, part of a single, indivisible whole. This mirrors the core tenets of non-dual philosophy aka Advaita Vedanta, which posits that the perceived multiplicity of the world is an appearance (Maya) masking an underlying non-dual reality (Brahman)

April 14 marked World Quantum Day, a global initiative aimed at public understanding of the quantum science and technology that shapes our modern existence. The date itself is a tribute to the fundamental physical constant that birthed this revolution: 4.14 (April 14), representing the first digits of Planck's constant (eV-s). As India navigates the 21st century, this day serves as a critical juncture to reflect on the transition from classical determinism to a quantum reality - a reality that finds a surprising resonance in ancient Indian thought.

The story begins in 1900 with Max Planck. Attempting to solve the ultraviolet catastrophe of blackbody radiation, Planck made a radical assumption: energy is not continuous, but packetized into discrete quanta. This discovery shattered the foundations of classical physics. Planck's constant became the scale of the universe's granularity.

It was the key that unlocked the door to the subatomic world, leading to the development of quantum mechanics by Bohr, Heisenberg, and Schrödinger. World Quantum Day honours this numerical foundation, reminding us that at the most fundamental level, our universe is governed by discrete values rather than smooth transitions.

For decades, quantum phenomena like superposition - where a particle exists in multiple states simultaneously - and entanglement - the spooky action at a distance where two particles remain connected regardless of separation - were treated as philosophical puzzles or mathematical oddities.

Today, these are no longer mysteries; they are experimentally determined facts. Recent breakthroughs in quantum computing and Bell's theorem experiments have proven that the universe is non-local and probabilistic. We have moved from observing these phenomena to engineering them.

Whether it is through the development of qubits in quantum processors or secure quantum key distribution (QKD) for communication, the weirdness of the quantum world is now the engine of a new industrial

revolution. The rise of quantum mechanics signalled the death of Newtonian deterministic materialism. In the Newtonian view, the universe was a giant clockwork mechanism; if you knew the position and momentum of every particle, you could predict the future with absolute certainty. This birthed a rigid causality that left little room for spontaneity or the role of the observer.

Quantum mechanics, via the Heisenberg Uncertainty Principle, dismantled this. It introduced an inherent limit to what can be known. The act of observation itself collapses the wave function, suggesting that the observer is not a detached witness but an active participant in the creation of reality. This shift from a dead materialist machine to a participatory, interconnected universe marks one of the most profound intellectual shifts in human history.

While quantum mechanics may sound abstract, it is the silent driver of the modern world. Every time you use a mobile phone, you are harnessing quantum physics. The transistors that form the brain of your device rely on the quantum behaviour of electrons in semiconductors. Without quantum mechanics, the miniaturization of electronics would have been impossible.

Similarly, the Medical Resonance Imaging (MRI) machines in our hospitals are practical applications of nuclear magnetic resonance - a quantum mechanical property of atomic nuclei. From the lasers used in eye surgery to the GPS satellites that help us navigate our cities, quantum science is not a futuristic concept; it is the bedrock of our current technological infrastructure.

Perhaps the most fascinating aspect of the quantum revolution is its convergence with non-dual philosophy. Quantum entanglement suggests a fundamental

oneness - a state where separate entities are, in fact, part of a single, indivisible whole. This mirrors the core tenets of non-dual philosophy aka Advaita Vedanta, which posits that the perceived multiplicity of the world is an appearance (Maya) masking an underlying non-dual reality (Brahman).



SINDHU NIL
BARMAR ROY

The writer is Distinguished Professor, RKMVERI, Belur, and Visiting Professor, IIT-Powai

great machine.

In the Indian context, this synthesis was championed by Swami Vivekananda. Long before the term quantum was part of the common lexicon, Vivekananda sought to bridge the gap between ancient wisdom and modern science. He envisioned a Scientific Socialism grounded in the Vedantic principle of equality and the scientific method of inquiry.

Vivekananda argued that religion must be as scientific as physics, and science must be as spiritual as religion. He saw in the Advaita philosophy a framework that could accommodate the discoveries of Western science while providing a moral and social structure based on universal brotherhood.

For Vivekananda, the realization of oneness was not just a spiritual goal but a prerequisite for a just and progressive society. His interactions with scientists like Nikola Tesla underscore his belief that the ultimate conclusions of science would eventually align with the insights of the Vedas.

As we enter what many call the Second Quantum Revolution, there is an urgent requirement for awareness among India's Gen-Z. This generation is coming of age at a time when quantum technologies - from cryptography to drug discovery - will redefine the global economy.

However, this revolution requires more than just technical skill; it requires a new way of thinking. Our youth must move beyond the Newtonian mindset of silos and rigid competition and embrace a Quantum mindset of interconnectedness and probability. Understanding that the universe is fundamentally connected can foster a sense of global responsibility, environmental stewardship, and social empathy.

India, with its rich heritage of logic and metaphysics, is uniquely positioned to lead this charge. By integrating the rigorous inquiry of quantum science with the holistic vision of Indian philosophy, Gen-Z can pioneer a future where technology serves humanity without losing its soul.

World Quantum Day is not merely a celebration of a constant or a set of equations. It is a celebration of our evolving understanding of our place in the cosmos.

As we acknowledge the transition from the deterministic clockwork of the past to the entangled oneness of the quantum present, India stands at a threshold. By honouring the legacy of Planck and the wisdom of Vivekananda, we can ensure that the quantum dawn leads to a brighter, more integrated future for all.



Reimagining Design Education in India: From Artistic Skill to Problem-Solving Power

DR SANJEEV VIDYARTHI

Design is a deeply wired human trait. In fact, it is central to the story of human civilization itself. Be it the very first tools and techniques that our ancestors 'designed' or the more modern systems and technologies that humans have conceived, thoughtful and purpose-driven design has consistently and reliably shaped human progress on this planet. In India, this relationship is even more pronounced, as reflected in several indigenous traditions that underscore an intuitive understanding of design as a practical and context-driven activity that humans take up intentionally when faced with pressing problems.

However, some misunderstand design as facile decoration or mere aesthetics, a view that also shaped how design education was typically perceived in India. But, as humanity increasingly faces complex challenges, the perception is undergoing an important shift worldwide. Design is now being rightfully recognised as a mainstream discipline, rooted

in critical thinking, systems understanding and purposeful problem-solving, vital to create a better future.

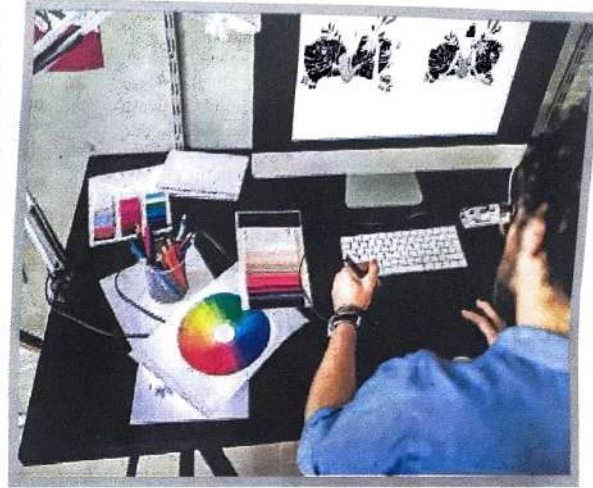
This shift is especially relevant for India, where rapid technological disruptions, large-scale urbanisation, and evolving socio-economic aspirations are impacting our present and instigating questions about our future. Advances in AI, automation, Industrial Internet of Things (IIoT), data systems and robotics are fundamentally reshaping industries and production environments. To ensure that these transformations play out in a meaningful way, we need professionals who can navigate complex situations using smart skills and interdisciplinary knowledge for designing clever solutions that improve the overall human experience. Thus, design becomes the enabler, requiring robust education that equips future practitioners with the necessary skills to create a future-ready workforce.

From this perspective, the traditional educational framework emphasising technical proficiency and artistic output has undergone a major rethink. Contemporary design education adopts an inherently integrated

approach and aims to cultivate systems thinking, contextual sensitivity and interdisciplinary exploration. Students are encouraged to engage with diverse domains, ranging from technology and business to environmental studies and the social sciences, so that they develop a holistic understanding of the complex situations they seek to address.

Equally important is the move towards experiential learning that makes students aware of real-world contexts. India's impressive diversity offers a rich and complex landscape for design inquiry. When students work directly with local, place-based communities, understand their everyday challenges, and develop practical solutions, their learning moves beyond the classroom into real-world contexts. This learning approach makes design a tool for meaningful and measurable impact rather than an abstract academic exercise.

The impact of design is already visible in India's growth story through increasingly better-designed public spaces and consumer-centric systems. However, much of this progress is confined to particular sectors. To ensure that design has a larger impact, it needs to become even more mainstream. A systematic and calculated approach to design education helps make this happen. While sustained efforts towards the provision of better design education will ensure a broader impact of design in our lives, wider access to world-class design education will ensure that we are ready with a future-ready workforce, appropriately trained to face and tackle future planetary challenges. Growing awareness about design as a serious and impactful discipline encourages a larger pool of aspiring students in the design fields. Higher education institutes



(HEIs) must leverage this growing interest by attracting and helping talent from different backgrounds to ensure that quality education remains accessible to all.

While national entrance tests like UCEED help identify a larger talent pool, not all aspirants may find a place in top design universities due to financial constraints. Merit-based scholarships supporting committed and talented students help HEIs make design education more accessible to deserving candidates. Such a learning environment, where students from varied social, economic and cultural backgrounds study together in a classroom, truly enhances all kinds of diversity in a single place. This also strengthens the foundation of a more inclusive and representative design ecosystem in the country.

However, HEIs must ensure that students learn appropriate values. Our future is sure to be disrupted by

technology. In a scenario like this, basic human values, ethical judgment and contextual understanding have become highly important traits. Design education must therefore strive to create not only technically proficient professionals but also thoughtful individuals who can employ powerful tools responsibly and with a clear sense of purpose.

Reimagining design education in India is not merely an academic exercise; it is a strategic necessity. By thoughtfully embracing design as a discipline of problem-solving and innovation, we can prepare young minds to engage meaningfully with the complexities of the contemporary world. In doing so, India will not only strengthen its own developmental trajectory but also contribute more substantively to global conversations on design and human progress.

(THE AUTHOR IS THE PROVOST AT ANANT NATIONAL UNIVERSITY)



Why India is emerging as a global higher education destination

DR. NITIN SAXENA

A System Ready for Global Attention India's rise as a global higher education destination is no longer a distant aspiration. It is becoming a policy-backed, market-driven and reputation-building possibility. For decades, India was seen largely as a source country for international education, sending lakhs of students to the United States, the United Kingdom, Canada, Australia and Europe. That story is now acquiring a second chapter: India is slowly positioning itself as a receiving country, a transnational education hub and a knowledge partner for the Global South.

Why India is Becoming Attractive

One major reason is affordability. As education in traditional Western destinations becomes increasingly expensive, students from Asia, Africa and parts of the Middle East are looking for credible alternatives. India offers English-medium education, cultural familiarity for many international students, relatively lower living costs and degrees in high-demand fields such as engineering, management, computer science, data analytics, medicine, pharmacy, design, public policy and sustainability. The Study in India portal strengthens

direction to internationalisation, multidisciplinary learning, credit mobility, research orientation and industry-academia linkage. The University Grants Commission regulations allowing foreign higher educational institutions to set up campuses in India mark a structural shift in India's higher education diplomacy. The University of Southampton's Gurugram campus, offering programmes in computer science, economics, accounting and finance, business management, finance and international management, is an early signal of this new phase. Students at this campus may also spend up to one year at Southampton's campuses in the UK or Malaysia.

institutional quality and generate new revenue streams for Indian universities. It can also support India's broader geopolitical positioning. A student from Nepal, Kenya, Tanzania, Sri Lanka, Bangladesh or the UAE who studies in India does not only earn a degree; she builds networks, understands Indian markets, develops cultural familiarity and becomes a long-term bridge between India and her home country.

Indian higher education also has a unique civilisational advantage. India is not merely a low-cost destination; it is a society with a long tradition of knowledge, debate, pluralism and intellectual exchange. From ancient centres of learning to modern institutes of technology and management, India's educational story has both historical depth and contemporary relevance. This combination can appeal strongly to students who seek not only degrees but also exposure to a dynamic, diverse and fast-growing economy.

Preparing for the Next Leap

However, India must avoid triumphalism. Being affordable is not enough. Global students will compare India with Singapore, Malaysia, the UAE, Europe and Australia. They will look for transparent admissions, safe campuses, international hostels, responsive student services, credit transfer options, internship access, faculty quality, research facilities and globally recognised outcomes. Indian higher education must therefore move from "admission orientation" to "student experience orientation."

The way forward should be clear. First, institutions must build dedicated international offices, not as ceremonial desks



but as full-service student success units handling admissions, visas, housing, counselling, and academic support and alumni relations. Second, more programmes should be offered in globally relevant areas such as artificial intelligence, climate studies, public health, fintech, entrepreneurship, supply chain, digital business, creative economy and sustainable development. Third, Indian institutions must strengthen quality assurance through accreditation, rankings, learning outcomes, faculty development and research output.

Fourth, industry integration must become central. International students will come not only for classroom learning but also for employability: Internships, live projects, incubation support, startup exposure and links with Indian companies can become India's unique advantage. Fifth, campuses must prepare faculty and staff for cross-cultural

classrooms. Internationalisation is not only about bringing foreign students; it is about creating an academic culture where diverse learners feel respected, supported and intellectually challenged.

India is emerging as a global higher education destination because three forces are converging: demographic scale, policy reform and global demand for affordable quality education. But the opportunity will mature only if Indian institutions combine access with excellence, affordability with credibility, and cultural warmth with professional systems. The world is looking for new education destinations. India has the civilisational legacy, institutional scale and contemporary ambition to become one. The task now is to convert promise into dependable academic experience.

(THE AUTHOR IS THE DEAN OF ACADEMICS AND PROFESSOR OF MARKETING, JAIPURIA SCHOOL OF BUSINESS)



Beyond Degrees: Education as Soft Power

The benefits are larger than student mobility alone. If managed well, internationalisation can improve classroom diversity, strengthen research collaboration, attract global faculty, enhance

this proposition by providing access to hundreds of Indian institutions and thousands of courses. This matters because global education is not only about academic reputation; it is also about ease of access, administrative clarity and student confidence.

The second driver is policy reform. The National Education Policy 2020 has given formal

The context is significant. India's higher education system has expanded substantially in scale. The number of higher education institutions has increased from 51,534 in 2014-15 to 70,018 as of June 2025, while student enrolment, as per provisional AISHE 2022-23 data, has risen from 4.33 crore to 4.46 crore. India now has 23 IITs, 21 IIMs and 20 AIIMS.

Stat/19/20

CAREER CHOICE

A lot like life

In the US, nursing students have been training on manikins for a while now. The lowdown from **Jancee Dunn**

Debra Barksdale vividly remembers her first nursing school clinical rotation. "It was terrifying," said Barksdale, who is the president of the American Academy of Nursing. "Your head is full of all this knowledge, but actually putting it in practice in front of a real live human being is very daunting."

It's been 40 years since then, and things have changed. Increasingly, students in training are not starting with human patients. They are working on lifelike manikins.

While mannequins are used to model clothing, manikins are models of the human body used to train medical professionals. Also known as high-fidelity medical simulators, they can cry, sweat, bleed, blink and breathe. Some of them can convulse and foam at the mouth.

At a recent training at Seton Hall University's clinical simulation centre in New Jersey, US, Juliana Vitolo, a nursing student, had an appointment with a "pregnant" manikin named MamaAnne. "How are you feeling?" Vitolo asked. MamaAnne blinked a few times and answered, "I'm having a little pain in my lower abdomen."

The use of manikins has grown significantly in recent years; in professions such as nursing, they have become a training staple. Research has suggested that working with these manikins not only enhances knowledge and performance, but improves skills such as communication, confidence and empathy.

There are roughly 2,00,000 of these simulators in the US, said Inger Stenberg, head of public affairs at Laerdal — that manufactures such manikins — and they are used in hospitals like the Mayo Clinic as well as in trade schools. The US Army, Navy and



REHEARSAL: Mannequins are used to model clothes and accessories, while manikins are used to train medical professionals

Coast Guard use them too.

Trainees can feel a realistic pulse that can be programmed to race. They can draw "blood", a red fluid that can "clot" when mixed with gelatin. And they can inject fluids into a manikin's arms, which are covered with soft silicone. Some simulators even have pupils that contract when their eyes are examined with a flashlight.

Premature baby manikins have fine hair (from a goat) and geriatric models have wrinkled skin and cataracts. There are interchangeable "headskins", silicone faces in different skin tones, to represent diverse patient populations.

Manikins have been used in healthcare training for decades, but today's high-fidelity medical sim-

ulators allow students to rehearse complex, dynamic procedures. Kevin Ching, medical director of the simulation centre at New York-Presbyterian and Weill Cornell Medicine, US, says, "Students can rehearse everything from respiratory failure to shock, sepsis, cardiac arrhythmias," he said.

The manikins at the simulation centre at the University of North Carolina Greensboro School of Nursing are so sophisticated, Barksdale said, that "if you're walking around at night, and you stumble into one of our labs, you would think it's full of people".

"It can be kind of scary," she added. For healthcare trainees, the prospect of medical errors is far scarier — and research suggests that simulation-based training with high-fidelity manikins improves performance

in real-life clinical environments.

This training stresses the need for precision, which can enhance patient safety down the line, said Jennifer McCarthy, director of the clinical simulation programme at Seton Hall. When trainees administer medication to a manikin, the technology inside of it measures the exact volume delivered.

"If a team is expected to give 2 millilitres of a medication but only administers 1.8 millilitres, that discrepancy may not seem like a big deal," she said. "But this is an error, and errors can have harmful consequences." At Seton Hall, the manikins actually "talk" so healthcare workers can rehearse patient interactions like the one between MamaAnne and Vitolo.

A simulation operations specialist speaks from inside a control room, and their voice is modulated to mimic a male, female or child voice for the manikin. For professions like nursing, which involve frequent communication with patients, this feature is especially helpful, said Fiorella Carvo, a nursing student.

"We're learning how to build rapport in an environment that can be intimidating," said Brittany Hague, a speech-language pathology student who also trains with manikins. Some manikins can also be programmed to have medical conditions that change suddenly, Ching said. At Seton Hall, for instance, a baby manikin can be engineered to become lethargic, and students have to check vitals.

Hague said that the most valuable aspect of learning on a manikin was the self-assurance it gave her. "The more mistakes you make in a safe environment, the more you're able to learn," she said. "So that it doesn't happen in the real world," she added.

NYTNS/AMIR HAMLA



**ASHOK PANKAJ, POORNIMA M
AND RAMANDEEP KAUR**

Not enrolment, problem is school dropouts

IN A recent report on school education, NTIT Aayog has flagged two problems. One, the persistently high number of out-of-school children, and two, weak learning outcomes that frustrate much of the hard-earned achievements of universal enrolment at the primary and upper-primary levels. With four out of 10 children aged 6-17 years not in school, a deepening crisis in learning levels, and average years of schooling lower than developed countries, the pursuit of the goals of Viksit Bharat would be challenging.

Out-of-school children are higher in rural areas, among SCs, STs and Muslims, and are concentrated in a few states. Further, it is higher in boys than in girls, because boys are often expected to support family income at an early stage.

A recent study on out-of-school children shows that high aspiration of parents for education of their children, especially among the poor and the marginalised, co-exists with high levels of disillusionment from school education, leading to withdrawal of children from schools. NFHS-5 shows that a significant proportion of adolescents disen-

gage from schooling due to a lack of interest, non-fulfilment of aspirations, and discouraging school experiences. There are also other and sometimes correlated factors, like poverty, migration, gender and disability barriers, and spatial factors. General incentives like uniforms, books, mid-day meals etc. are not very effective for such children.

Second, secondary and higher secondary schools are not adequate. The distance and safety concerns of girls are barriers for their continuing school beyond upper-primary level. Language problems, inadequate infrastructure, dysfunctional WASH facilities, and the absence of a supportive learning environment are other factors.

Third, rigid administrative norms and limited school autonomy deprive migrants and homeless children. Denial of admission, non-issuing of transfer certificates, and restricted access to welfare-linked entitlements (their non-portability), non-recognition of caste certificates of other states, often hinder such enrolment.

Fourth, while policy attention has largely focussed on the 6-14 age

group, an obligation under the RTE Act, the problem is more pronounced at the secondary and higher secondary levels. Fifth, while technology-enabled initiatives like the PRA-BANDH portal at the national level and the School Har Din Aaye (SHARDA) portal in UP have strengthened identification, tracking, and monitoring of out-of-school children, implementation challenges persist. Integration of technology-driven tracking mechanisms with community-level interventions can ensure completion of school education.

As India moves towards the fulfilment of the vision of "Viksit Bharat" by 2047, SDG-4 goals by 2030, and with the rollout of the NEP 2020, it is of utmost importance to recognise the gravity of the problem of out-of-school children, make a holistic assessment of its magnitude, and focus more on 14-years-plus children. There is a need to move towards strategies that recognise the interdependence of household conditions, school-side factors, and systemic and governance challenges.

Pankaj is professor, Poornima is assistant professor and Kaur is senior research associate, Council for Social Development

**Rigid administrative norms,
and limited school autonomy
deprive migrants, and
homeless children**

Keeping exams clean: From Kerala, a personal example



K J ALPHONS

AFTER A stint in DDA, I returned to my home cadre, Kerala, in 2000. I was appointed as Transport Commissioner of Kerala. I got out onto the streets with my staff, and we brought down the accident rate by 60 per cent. But I lasted only three months in the job as the Transport Minister wanted to transfer RTOs, which was my job, and I wouldn't let him do that. I was appointed Secretary, Higher Education, and Commissioner for Entrance Examinations — my job was to conduct entrance examinations for all professional colleges in Kerala.

The Education Minister told me, "Entrance examinations have always been a mess. Can you set it right?" I told him: "I will try". Every year, the examination results are declared after a waiting period of three months. Then, some parents would invariably approach the High Court with the plea that some questions were wrong and these should be deleted from the evaluation. The court would set up a committee of experts and take three months to dispose of the case, ordering the deletion of some questions and re-ranking the successful candidates. For six months, candidates and their parents would have sleepless nights; some attempted suicide.

I went to the Entrance Commissioner's office with much apprehension. On the first day, I had a meeting with all the staff I told them, "We have the reputation of being the worst office in the world; let us make this the best office in the world". They said: "Yes". I did not buy new computers or scanners. We did not recruit any new staff.

I decided that only I would know who sets question papers and where they would be printed. Nobody else in my office would know. I resolved to have three sets of question papers.

After I had zeroed in on a question setter, I would go and meet him personally. How did I travel? Of course, under a fake name. If the question setter was in Delhi, I would change flights three times to get to Delhi from Thiruvananthapuram. Once I landed at Delhi airport, I would change taxis three times to reach the question setter's residence.

Why all this drama?

I didn't want anybody to tail me. I never stayed at the government guest house, but at a low-end hotel and under a fake name. Once the questions were pre-

pared, I would collect the physical copies personally; no emails or couriers. I would take it to two experts and re-validate the questions and keys. Again, no emails and no couriers. After that, I would take it to a printer. Nobody knew my travel plans, not even my PS. All the flight and hotel bills were kept in a secret, sealed cover. The printed question papers were brought to Kerala only two days before the date of the examinations under a Gujarat police escort. They were sent to the districts and stored in the treasury and sealed under the supervision of the District Collector. They were sent to the examination centres under police protection.

Like NEET, the Kerala entrance was objective-type multiple-choice questions. The OMR answer sheet was just one page. To ensure absolute secrecy, I introduced an innovation. The coded top portion of the OMR sheet was made tearable. Once the students entered their roll numbers, the top portion was torn off (part A). Soon after the entrance test, these were taken to the Commissioner's office, scanned, and the information was stored on a disc, which would be in my possession. All details were deleted from the digital systems.

Then, the OMR sheets (part B) were scanned, and these contained the scores of candidates. Nobody in the office knew who scored what, as only Part A had the candidate information. The matching of Part A and Part B was done by me personally, only an hour before the results were declared. This ensured that nobody in the office was able to manipulate the marks, not even me.

When we declared the results on the seventh day after the examinations, six newspapers in Kerala wrote editorials: "Entrance Commissioner's Office gets first rank". Postgraduate medical entrance examination results were declared on the second day. Super speciality medical entrance examination results were declared on the same day. What a transformation, from being the worst office in the world to the best.

Would the NTA like to learn some lessons? Twenty-two lakh candidates and their parents could have been spared the agony. In this digital age, it is much easier to do what we did.

The writer was from the 1979 batch of the IAS and is a former Union Minister

I decided that only I would know who sets question papers and where they would be printed. Nobody else in my office would know. I resolved to have three sets of question papers

आसान होती अच्छी शिक्षा तक पहुंच

एक समय था जब भारतीय युवाओं के लिए अंतरराष्ट्रीय शिक्षा की डगर बहुत कठिन हुआ करती थी। फीस, रहने का खर्च और बीजा की लागत तो ज्यादा थी ही, साथ ही उन्हें भाषा की दिक्कतों और परिवार से दूर रहने जैसी चुनौतियों का भी सामना करना पड़ता था। विदेश जाकर पढ़ाई करना हर किसी के लिए संभव नहीं था। हालांकि यह अब भी आसान नहीं, लेकिन अब अंतरराष्ट्रीय शिक्षा प्राप्त करने के इच्छुक युवाओं के लिए नए अवसर आ गए हैं। दुनिया की प्रमुख शिक्षा संस्थाएं अब भारत की ओर रुख कर रही हैं और अपने कैंपस यहां खोल रही हैं। भारत ने भी उन्हें यहां लाने के लिए सकारात्मक कदम उठाए हैं। किसी संस्थान को यहां आने के लिए दुनिया के शीर्ष 500 संस्थानों में होना चाहिए या उस संस्थान की किसी खास विषय में असाधारण विशेषज्ञता होनी चाहिए। कई संस्थाओं ने भारत में अपने कैंपस खोल दिए हैं या खोलने की घोषणा कर दी है। उदाहरण के लिए, यूनिवर्सिटी आफ एबरडीन की पांच सौ साल की शैक्षणिक विरासत है। यूनिवर्सिटी आफ साउथैम्पटन के दुनिया भर में 2.85 लाख से अधिक पूर्व छात्र हैं।

यूनिवर्सिटी आफ वोलोंगोंग का मानना है कि अच्छी विश्वस्तरीय शिक्षा और वैश्विक करियर हर छात्र की पहुंच में होने चाहिए, चाहे वह कहीं भी हो। ये विदेशी उच्च शिक्षण संस्थान अपने साथ गहरा अनुभव और शैक्षणिक व्यवस्था ला रहे हैं। वे भारत में ऐसे आधुनिक विषय पढ़ा रहे हैं, जो भारत के युवाओं के लिए उत्साहपूर्ण और उपयोगी हैं, जैसे टेक्नोलॉजी, डाटा साइंस, कंप्यूटर साइंस, बिजनेस और फाइनेंस। एक समय था जब इन संस्थानों में पढ़ने के लिए विदेश जाना पड़ता था। अधिकांश भारतीय परिवारों के लिए यह न तो किफायती था और न सुलभ। अंतरराष्ट्रीय संस्थानों के भारतीय कैंपस में पढ़ने वाला छात्र वही डिग्री पाता है, जो उसे विश्वविद्यालय के मूल कैंपस में पढ़ने पर मिलती। इससे छात्रों के लिए न सिर्फ खर्च कम हुआ है, बल्कि कई संस्थान तो अपने शुरुआती वर्षों में छात्रवृत्तियां भी दे रहे हैं। कुछ को मिलने वाले अवसर अब सबके लिए उपलब्ध हैं। भारत



प्रमथ राज सिन्हा

विदेशी शिक्षण संस्थानों का आगमन भारतीय संस्थानों की जगह नहीं लेता, बल्कि भारतीय छात्रों को नए विकल्प देता है



उच्च शिक्षा की गुणवत्ता को बढ़ाना आवश्यक • फाइल

एक युवा देश है और अच्छी उच्च शिक्षा देश की राष्ट्रीय आवश्यकता है। यहां लाखों ऐसे सक्षम और मेहनती छात्र हैं, जिन्हें सीटों की संख्या पर्याप्त न होने के कारण उत्कृष्ट संस्थानों में जगह नहीं मिल पाती। भारत में अपनी क्षमता बढ़ा रहे अंतरराष्ट्रीय संस्थान भारत की इस वास्तविक और तात्कालिक आवश्यकता को भी पूरा कर रहे हैं। उनका आगमन भारतीय संस्थानों की जगह नहीं लेता, बल्कि भारतीय छात्रों को नए विकल्प देता है। इस दृष्टि से इनका आना शिक्षा क्षेत्र में एक आवश्यक कदम है। क्षमता बढ़ाने के साथ-साथ विविधता भी महत्वपूर्ण है।

जहां एक तरफ भारतीय उच्च शिक्षा कुछ क्षेत्रों में उत्कृष्ट है, वहीं दूसरी ओर ऐसे क्षेत्र भी हैं जिनमें विकास की आवश्यकता है। विदेशी संस्थान अपने साथ भिन्न-भिन्न बौद्धिक माहौल में विकसित अध्ययन शैली, शोध की परंपरा और नई पाठ्यक्रम संरचनाएं लाते हैं। इससे छात्र प्रश्न करने और अपने विचार रखने के नए तरीके सीखते हैं, जिससे पूरी शिक्षा व्यवस्था को मजबूती मिलती है। जब ऊंची रैंक वाले संस्थान भारत में आते हैं, तो वे अपने साथ अपेक्षाओं के

ऊंचे मानक भी लाते हैं और शिक्षा क्षेत्र के लिए उदाहरण बनते हैं। पहले भी कारपोरेट जगत में ऐसा हुआ है। वैश्विक कंपनियों के भारत आने पर भारतीय उद्योग खत्म नहीं हुए, बल्कि और बेहतर बने। सबमें सुधार का दबाव बना और जो कंपनियां बदलाव ला पाईं, वे और भी मजबूत हुईं। संभव है ऐसा शिक्षा के क्षेत्र में भी हो।

अंतरराष्ट्रीय विश्वविद्यालयों का भारतीय कैंपसों में निवेश करना इसका प्रमाण है कि वे भारत के भविष्य में भागीदारी चाहते हैं। अभी तक सबसे ज्यादा रुचि ब्रिटेन और आस्ट्रेलिया से आई है, लेकिन दूसरे देश भी आगे आ रहे हैं। सिंगापुर, यूएई और चीन जैसे देशों ने वर्षों पहले समझ लिया था कि विदेशी विश्वविद्यालयों के आने से देश शिक्षा का केंद्र बनता है। भारत भी इस दिशा में आत्मविश्वास के साथ आगे बढ़ रहा है। अब दूसरे देशों विशेषकर करीबी देशों के छात्र भारत को केवल भारतीय संस्थानों के लिए नहीं, बल्कि एक अंतरराष्ट्रीय शिक्षा केंद्र के रूप में भी देख सकेंगे। इससे उद्योग में सहयोग, शोध साझेदारी, बेहतर रोजगार जैसी नई संभावनाएं खुलेंगी। वैश्विक अवसरों का आना एक सकारात्मक बदलाव है।

विदेशी विश्वविद्यालयों के आने से देश में ऐसी परिस्थितियां बन रही हैं कि वैश्विक शैक्षणिक जीवन और भारतीय बौद्धिक शक्ति साथ-साथ आगे बढ़ेंगी। इस नए अवसर में स्पष्ट नियम व्यवस्था, अंतरराष्ट्रीय रुचि, युवा आबादी की मांग और नीतिगत समर्थन, सब एक साथ एक बिंदु पर मिल रहे हैं और यह कोई मामूली बात नहीं। यह भारत के भविष्य के लिए राष्ट्रीय स्तर पर लिए गए सक्रिय निर्णयों का परिणाम है। प्रश्न यह है कि इस अवसर का कार्यान्वयन कैसा होगा? क्या आने वाले शिक्षण संस्थान अपने ऊंचे मानक बनाए रखेंगे? क्या हर क्षेत्र और हर आय वर्ग के छात्रों को इन अवसरों का लाभ मिलेगा? और क्या पूरी की पूरी शिक्षा व्यवस्था अपने आप को नए स्तर के अनुरूप तेजी से ढाल पाएगी?

(लेखक अशोका यूनिवर्सिटी, दिल्ली-एनसीआर के संस्थापक हैं)
response@jagran.com

Why quality teachers are hard to find?



**SAKSHI
SETHI**

2ND OPINION

Education is often described as the backbone of a nation's development, and teachers are the pillars that support this foundation. Yet, despite the importance of their role, schools across the country are facing a growing challenge - attracting and retaining qualified teachers. Beneath impressive academic results, school rankings, and rising expectations lies a troubling reality: teaching, once considered one of the most respected professions, is steadily losing its appeal among talented young professionals.

The problem extends far beyond unfilled vacancies. It reflects the widening gap between what society expects from teachers and the conditions under which they are expected to work. Over the years, the role of educators has expanded dramatically. A modern teacher is no longer limited to classroom instruction. Teachers today are

expected to be mentors, counsellors, administrators, event managers, technology experts, and emotional support systems for both students and parents.

At the same time, their workload has increased significantly. While professional development is necessary for improving education standards, the constant demands often leave little time for creativity, personal well-being, or meaningful engagement with students.

One of the most pressing concerns remains the issue of compensation. Teachers shoulder immense responsibility in shaping young minds, yet salaries in many institutions fail to reflect the effort, expertise, and emotional investment required by the profession. In comparison, the corporate sector generally offers better salaries, performance incentives, flexible work environments, and clearer opportunities for career growth. Employees in corporate jobs often receive recognition for their achievements and enjoy more defined professional boundaries.

Teachers, however, frequently work beyond official hours without adequate compensation. Correcting notebooks late at night, preparing lessons on weekends, organising school events, and managing administrative work have become accepted parts of the profession. Such an imbalance naturally discourages many capable graduates from choosing teaching as a

career. Young professionals with strong communication skills, leadership qualities, and subject expertise increasingly prefer corporate careers that promise financial stability, recognition, and work-life balance. Another major challenge is the pressure to constantly deliver measurable results. Teachers are judged not only by their teaching abilities but also by student performance, parent expectations, school reputation, and institutional targets. The rapid integration of technology has added further responsibilities. Teachers are expected to continuously adapt to digital platforms, smart classrooms, and online assessments, often without sufficient support or time. Alongside this, they quietly carry the emotional burden of supporting anxious students and managing behavioural issues. Despite these difficulties, countless teachers continue to serve with dedication and sincerity.

However, commitment alone cannot sustain a profession indefinitely. If society truly values education, it must value educators through better salaries, healthier working conditions, mental wellness support, and professional respect. After all, no education system can rise above the quality of its teachers, and neglecting them ultimately means risking the future of an entire generation.

The Pioneer
SINCE 1865

The writer is an educator and a councillor

Painkili Fiction: Popular Imagination and Literary Culture in Kerala

SACARIA JOSEPH

Contours of Malayalam Literary Tradition

The evolution of Malayalam literature unfolds across distinct phases, shaped between the fifteenth and eighteenth centuries by poets such as Cherusseri Poonthannur, Thunchaththu Ezhuthachan, Nambiar. An early milestone in this trajectory is Cherusseri's fifteenth-century *Krishnagatha*, a Malayalam rendering rooted in the Krishna tradition.

In the nineteenth and twentieth centuries, Malayalam literature entered a new phase of development. Writers such as K. T. Muhammed, P. K. Pottekkatt, P. C. Kuttikrishnan (Uroob), Thakazhi Sivasankara Pillai, M. Mukundan, Kamala Das (Madhavikutty), P. Sathidhanandan (Arand), N. P. Mohammed, K. T. Muhammed, M. Sukumaran, Thikkodiyar and P. R. Ramesan contributed to vibrant and diverse literary landscapes.

Alongside these canonical voices, a parallel stream emerged, capturing the

the 1950s, came to be known as pulp fiction. Emerging primarily in the United States and Europe, pulp fiction developed as a distinctly Western literary genre within the broader landscape of popular print culture. The term derives from the inexpensive, low-quality wood pulp paper on which these magazines were printed, making literary entertainment widely affordable and accessible.

Initially, pulp fiction carried a pejorative connotation due to its mass appeal and perceived lack of literary merit. Over time, however, the very materiality of pulp, its coarse pages, came to symbolise the democratisation of reading, and the genre gradually gained wider acceptance within literary circles.

Action and suspense are central to pulp fiction. Serialised narratives typically ended with cliffhangers, compelling readers to anticipate and purchase the next issue. The genre relied heavily on recognisable stock figures such as hard-boiled detectives, damsels in distress, mad scientists, and alien invaders, often sketched with minimal psychological depth. Melodramatic dialogue, sharp one-liners, and impassioned speeches further shaped its distinctive tone.

While the narratives were often thrilling, titillating, and occasionally unsettling, they generally favoured immediacy over complexity. Their accessibility and entertainment value offered readers a temporary escape from the pressures of everyday life. Complementing the stories, pulp

Beyond noir, pulp fiction displayed remarkable diversity. Edgar Rice Burroughs transported readers to exotic and imaginative worlds through *Tarzan of the Apes* (1912) and the John Carter of Mars series (beginning in 1913). Walter B. Gibson's *The Shadow* (1930) introduced a mysterious vigilante figure, anticipating later superhero archetypes. Lester Dent's *Dick Savage* (1933) presented a pulp hero in a scientist-adventurer, while Burroughs' *The Moon of Mars* (1912) later published in book form as *A Princess of Mars* blended romance with interplanetary adventure. Together, these works, with their varied tones and thrilling narratives, contributed to the enduring appeal and expansive canvas of pulp fiction.

Painkili Fiction: Localising the Popular

Muttathu Varkey's novels, most notably *Inapiravikal* (A Pair of Pigeons, 1953) and *Pradatha Painkili* (The Bird that Does Not Sing, 1955), marked a decisive turning point in Malayalam literature by popularising painkili (songbird literature), fusing the romantic tradition of Mills & Boon, these works were defined by emotionally charged narratives and idealised love. Alongside Kanam E. J., Varkey produced a vast body of novels, short stories, and plays, though romance fiction remained his forte. Popular weeklies such as *Malayala Manorama*, *Mangalam*, and *Manoranjani* found in these works a deservingly grouped as the 'Ma' magazines, they played a crucial role in serialising and popularising these works. Set against the lush, rustic landscape of central Kerala, these novels offered a world far removed from the harshness of urban life. Their language was direct and accessible, often enriched with local dialects and colloquial speech, enabling them to reach a wide readership across the state.

Drawing deeply from the textures of domestic and rural life, painkili fiction fused melodrama with emotional immediacy. In these narratives, joy and love coexisted with loss, betrayal, and crime to sustain high engagement. While serving as popular entertainment, they affirmed core moral values such as loyalty, honesty, and filial responsibility.

Emerging in the early 1950s, the painkili movement directly contrasted with the ideological, socially-conscious realist writing that dominated Malayalam literature in the 1940s. Instead of intellectual or political critique, these novels privileged emotional release and accessible, hopeful resolutions. Significantly, they shifted literary attention away from elite milieus, focusing instead on the everyday struggles of common people. This combination of accessible language



and reassuring narrative closure ensured massive mass appeal, offering readers a consoling vision of lifezone in which a brighter tomorrow remained within reach, regardless of suffering.

Painkili Fiction in Circulation and Transition

From the 1950s onward, a remarkable rise in literacy transformed Kerala into a vibrant centre of print culture. As literacy climbed from 47.18% in 1951 to 55.08% in 1961, eventually reaching full literacy at a functional level in 2016, the appetite for information and diverse viewpoints expanded dramatically. This created fertile ground for the proliferation of print media: by the 1980s, 103 dailies and 120 weeklies animated the state's public sphere. From politically incisive dailies such as *Mathrubhumi* and *Malayala Manorama* to widely read weeklies like *Kumkumam* and *Vanitha*, these publications catered to varied tastes while sustaining lively discourse on social, political, and cultural concerns.

Circulation figures from the mid-1980s further underscore this reach: according to reports of the Audit Bureau of Circulations (ABC), *Malayala Manorama* recorded a circulation of around 6.3 lakh copies, while *Mathrubhumi* reached approximately five lakhs. Among weeklies, *Mangalam* exceeded about 12.8 lakh, outpacing its competitors. These magazines popularised serialised fiction, attracting a significant segment of domestic readers, particularly women, and integrating literature into the rhythms of everyday life.

Within this expanding print ecosystem, painkili fiction flourished. Writers such as Muttathu Varkey, Chembil John, Vallachira Madhavan, Kottayam Pushpanth, and E. J. Kanam led the literary appetite of ordinary Malayalee readers in the 1960s and 70s, even as canonical figures like Thakazhi Sivasankara Pillai, Valloppilli Sreedhara Menon, Edasseri Govindan Nair, S. K. Pottekkatt, Kamala Das, and O. V. Vijayan shaped a parallel, more critically acclaimed tradition, though, at times, these spheres overlapped, with some writers engaging

forms and themes associated with painkili fiction. Rather than existing in opposition, these streams coexisted and mutually enriched Kerala's literary culture. If canonical works offered depth and formal innovation, painkili fiction provided emotional immediacy and accessibility; together, they broadened the reader's horizon and diversified the experience of literature.

From the 1970s to the 1990s, a new generation, including Moythupadiyath, Johnson Pulinkunnu, Pamman, John Alunkal, and Josey, extended the genre's reach. Their works, increasingly attentive to social critique, women's issues, and political themes, resonated with an expanding readership. The 'Ma' weeklies remained crucial platforms, ensuring wide dissemination and sustained popularity.

Even as romance and melodrama remained central, this phase witnessed a clear thematic diversification. Painkili fiction began to incorporate sharper strands of social critique and political awareness, while elements of the supernatural and the uncanny also found increasing expression within the genre. Women writers such as Kamala Govind and Chandrakala S. Kamath further expanded its scope by foregrounding questions of gender, domestic pressures, and societal expectations. These developments enabled painkili fiction to move beyond formulaic romance, engaging more directly with the complexities of contemporary life.

Simultaneously, subgenres evolved. Kottayam Pushpanth, often called the 'Arthur Conan Doyle of India', popularised investigative thrillers, while Ettumanoor Shiva Kumar developed horror and supernatural fiction rooted in Kerala's folklore. Other contributors enriched the crime genre with varied styles and narrative innovations.

Despite sustained criticism from literary elites for formulaic plots and stereotypical characters, painkili writers played a decisive role in democratising literature. Their accessible language and emotionally engaging narratives fostered a widespread reading culture, especially among the common people. Beyond the page, their influence extended

into cinema, theatre, and popular storytelling traditions.

However, the advent of television, particularly the spread of cable TV in the 1990s, significantly altered this landscape. With the rise of visually rich mega serials and increasingly diverse programming, audiences began to gravitate toward audio-visual forms of entertainment. Consequently, painkili fiction and the 'Ma' magazines experienced a gradual decline in circulation, especially among younger readers. This shift was not solely due to television; changing lifestyles, rising literacy levels, expanding educational horizons, and evolving economic aspirations also contributed to a growing preference for more immediate and varied forms of engagement.

Yet, the genre has by no means disappeared. Its appeal endures, particularly in smaller towns and rural contexts, attesting to its deep cultural rootedness. The enduring legacy of painkili fiction lies in its pivotal role in shaping reading habits and in democratising access to literature, making it accessible, engaging, and intimately connected to the lived experiences of generations of Malayalee readers.

The Cultural Afterlife of Painkili Fiction

Though the immense popularity of painkili fiction has waned, Malayalees will always cherish the legacy of its writers. They played a pivotal role in shaping Kerala's literary landscape, fostering a deep-seated passion for reading among the common people. These authors redefined the boundaries of Malayalam literature, giving voice to the successes and depicting the trials and triumphs of ordinary lives. Born from a social and literary necessity in mid-twentieth-century Kerala, the painkili movement stood as a testament to the power of storytelling to empower the marginalised and enrich the world of literature.

THE WRITER IS ASSISTANT PROFESSOR, DEPARTMENT OF ENGLISH, A WOMEN'S COLLEGE, KADAPPA



imaginations of ordinary Malayalis through what came to be known as painkili fiction, the Malayalam counterpart to Western pulp fiction. While canonical literature focused on the raw struggles of the working class, the marginalised, and social realism, painkili fiction offered a highly popular form of melodrama and romantic escapism. Pioneered by writers like Muttathu Varkey, it relied on formulaic family dramas, passionate love stories, and simplified moral universes. Though routinely dismissed by the literary elite, it was instrumental in democratising the habit of reading across mainstream Kerala household society.

Pulp Fiction and the Culture of Mass Reading

Serialised stories marked by fast-paced, action-driven plots, stock characters, and sensational storylines, published in pulp magazines between 1896 and



कोचिंग संस्कृति की चपेट में शिक्षा

मेडिकल कालेजों में प्रवेश की परीक्षा नीट के पेपर लीक कांड ने सभी को दुखी और चिंतित किया है। नीट पेपर लीक कांड ने बताया कि किस तरह पैसा, बढ़ते लालच और अयोग्य होकर भी योग्य छात्रों की सीट छीनने की चाहत के त्रिकोण ने ऐसी घटनाओं को जन्म दिया है। इसी त्रिकोण ने मेडिकल, इंजीनियरिंग और अन्य प्रतियोगी परीक्षाओं के साथ-साथ लिपिक पद की परीक्षाओं तक के लिए भी देश भर में कोचिंग का जाल खड़ा कर दिया है। देश में अनेक कोचिंग हब बन गए हैं। आनलाइन-आफलाइन के कोचिंग तंत्र विकसित हो गए हैं और कोचिंग व्यवसाय एक इंडस्ट्री का रूप ले चुका है। यह इंडस्ट्री अब अत्यंत समर्थ और शक्तिवान हो गई है। इसका टर्नओवर छह मिलियन डालर का हो गया है। आने वाले वर्षों में इसके 17 मिलियन डालर हो जाने की संभावना है। इस इंडस्ट्री में प्रतिवर्ष लगभग 17 प्रतिशत की वृद्धि दर्ज की जा रही है। जिस व्यवसाय में इतना अपार धन निहित हो, वह किसी भी फूलपूफ सिस्टम में छेद कर पेपर लीक करा सकता है। नीट पेपर लीक कांड में गिरफ्तार कुछ लोग कोचिंग व्यवसाय से भी जुड़े हैं।

वास्तव में हर सिस्टम में ऐसे लोग होते हैं, जिनमें लालच अपना फन छुपाए प्रवेश कर जाता है। इसीलिए हाल में शिक्षा मंत्री धर्मेंद्र प्रधान ने पेपर लीक को एक सामाजिक बुराई कहा। ऐसी सामाजिक बुराई के खिलाफ सरकार और समाज, दोनों को साथ आकर काम करना होगा। सरकार अपनी व्यवस्था को दुरुस्त करने में तो लगी ही है, लोगों को भी खुद एक नैतिक समाज में तब्दील होना होगा। मेडिकल कालेजों की सीट में हेराफेरी में अनेक स्तरों पर कमीशनखोर एजेंट्स, कंसल्टेंट नुमा दलालों और पेपर लीक करने वालों का जाल फैला हुआ है। यह बड़े शहरों से लेकर कस्बों तक फैल गया है। 1980 के दशक में जब हम स्कूली छात्र थे तो कोचिंग संस्थानों का जाल इतना नहीं फैला था। तब सरकारी स्कूल बेहतर स्थिति में थे और कमजोर छात्रों के लिए ही कोचिंग आवश्यक मानी जाती थी।

1990 के दशक के बाद सरकारी स्कूल



बद्री नारायण



नीट मामले में कोचिंग सेंटर पर कार्रवाई • फाइल

व्यवस्था कई जगह पर कमजोर हुई। इसका लाभ शिक्षा को व्यवसाय मानने वालों ने उठाया। यह वही दौर था जब भारत में मध्य वर्ग का कई गुना विस्तार हुआ। नव उदारवादी अर्थव्यवस्था के आने के बाद जब बाजार आक्रामक हुआ तो उसने शिक्षा और परीक्षा को भी अपनी चपेट में ले लिया। इसी समस्या को देखते हुए मोदी सरकार ने जो नई शिक्षा नीति बनाई, उसमें शिक्षा मंत्रालय का सबसे ज्यादा जोर शिक्षा के माध्यम से ऐसा नैतिक मानस सृजित करना है, जो परंपरा से जुड़ा हुआ आधुनिक नवाचारी नागरिक हो।

शिक्षा मंत्रालय ने इस बार जैसे ही नीट पेपर लीक की खबर आई, त्वरित निर्णय लेते हुए उसे निरस्त किया और जांच सीबीआई को सौंप दी। इसके साथ ही परेशान छात्रों के लिए आर्थिक एवं व्यवस्थागत सहयोग की कई घोषणाएं कीं। शिक्षा मंत्रालय का यह कदम योग्य छात्रों के हक पर अयोग्य एवं अनैतिक शक्तियों के कब्जा करने की रणनीति के खिलाफ एक सख्त पहल के रूप में भी देखा जाना चाहिए। यह कदम अनैतिक शक्तियों के मंसूबों पर पानी फेरने वाला है।

नव उदार आर्थिकी के आने के बाद जब बाजार आक्रामक हुआ तो उसने शिक्षा और परीक्षा को भी अपनी चपेट में ले लिया

पिछली बार जब ऐसी घटना हुई थी तो शिक्षा मंत्रालय ने कई सुधारात्मक कदम उठाए थे। पेपर लीक में लिप्त पाए गए लोगों को कठोर सजा देने के लिए सरकार ने पब्लिक एग्जामिनेशन प्रिवेंशन आफ अनफेयर मीन्स एक्ट बनाया और ऐसे मामलों से निजात पाने के लिए राधाकृष्णन कमेटी का गठन किया। एनटीए ने इस कमेटी की कुछ सिफारिशों को लागू भी किया है। इस कमेटी के सुझावों के अनुसार शिक्षा मंत्री ने अगले साल से नीट-यूजी, पीजी परीक्षा सीबीटी यानी कंप्यूटर बेस्ड टेस्ट के रूप में कराने की घोषणा की है। इससे एक लाभ यह होगा कि परीक्षा की पूरी प्रक्रिया में मानवीय हस्तक्षेप कम होगा। संपूर्ण व्यवस्था एवं प्रक्रिया काफी कुछ डिजिटल मोड में आ जाएगी। यह ठीक है कि इस मोड में परीक्षा कई दिन और कई सेट प्रश्नपत्रों के साथ करानी होगी और परीक्षा के मूल्यांकन हेतु संतुलित नार्मलाइजेशन की प्रक्रिया भी अपनानी होगी, लेकिन इससे लाभ यह होगा कि पेपर लीक की आशंका लगभग खत्म हो जाएगी।

एक तरफ एनटीए अपनी व्यवस्था चाक चौबंद बनाने में लगा है, दूसरी तरफ छात्र पुनः परीक्षा की तैयारी में जुटे हैं। इस बीच विरोधी दलों ने सरकार पर आक्रमण तेज कर दिया है, लेकिन पेपर लीक जैसे मुद्दे कभी भी राजनीतिक नहीं होते। ये बड़े अर्थों में सामाजिक मुद्दे भी होते हैं। पेपर लीक से निजात पाने के लिए हम सबको अपने अंदर झांककर खुद को सुधारते रहने होगा। आखिर पैसा देकर पेपर लीक कराने और लीक पेपर खरीदने वाले इसी समाज के लोग ही हैं। यह समय आरोप-प्रत्यारोप करने का नहीं। विकास के बड़े लक्ष्य पाने एवं देश के नव उत्थान का है। यह ठीक है कि नीट निरस्त होने से छात्रों और अभिभावकों के तनाव का क्षण लंबा हो गया, पर पुनः परीक्षा अयोग्य एवं भ्रष्ट शक्तियों के कब्जे की साजिश को रोकने की कोशिश है। यह वह प्रक्रिया है, जिससे गुजरकर ही नीट के प्रतिभागी छात्र एक नई सुबह तक पहुंच पाएंगे।

(लेखक टाटा सामाजिक विज्ञान संस्थान, मुंबई के कुलपति हैं)

response@jagran.com

Shelved Knowledge

Independent India did not consciously ratify Macaulay's contempt; it did something less dramatic and more durable. It allowed the colonial syllabus to survive by inertia. Two centuries on, an Indian school-leaver can recite Newton's three laws and the Krebs cycle, but has rarely been asked, even in passing, to open the Āryabhaṭīya, the Caraka Saṁhitā or the Arthaśāstra



National Education Policy 2020

On the second of February 1835, Thomas Babington Macaulay compressed an empire's educational ambition into a single sentence: "a single shelf of a good European library was worth the whole native literature of India and Arabia". The line is often quoted as insult, and it was one. Its deeper consequence, however, lay elsewhere. It licensed a curriculum in which India's own sources became objects of antiquarian curiosity rather than instruments of disciplined thought.

Independent India did not consciously ratify that contempt; it did something less dramatic and more durable. It allowed the colonial syllabus to survive by inertia. Two centuries on, an Indian school-leaver can recite Newton's three laws and the Krebs cycle, but has rarely been asked, even in passing, to open the Āryabhaṭīya, the Caraka Saṁhitā or the Arthaśāstra.

Plato, Hobbes, Descartes and Freud appear in our textbooks as makers of knowledge; Kāṭīya, Caraka, Sūruta, Āryabhaṭa, Gautama and Rāmānuja appear, if at all, as cultural names detached from method. The correction now required is neither religious instruction nor political theatre. It is the recovery of a knowledge corpus that is old, internally reasoned, and fit for critical use.

The policy doorway is already open. The National Education Policy 2020 names ancient Indian knowledge as a resource to be researched, enhanced and put to new uses, and calls for accurate accounts of traditional Indian knowledge in the curriculum, expanded translation, and stronger classical-language institutions. The National Curriculum Framework 2023, prepared under NCERT, lists "Rootedness in India and Indian Knowledge Systems" as a cross-cutting theme. In June 2023 the University Grants Commission required a small but mandatory share of credits in every degree programme to be in Indian Knowledge Systems, and the All India Council for Technical Education has seeded a dedicated IKS division across engineering campuses. The question is no longer whether the State may begin. It is whether universities will do the work with enough intellectual honesty to make the beginning respectable.

Consider governance first. The Arthaśāstra is not a pious text masquerading as

administration; it is a cold manual of statecraft. Its saptāṅga theory of the state - sovereign, ministers, country, fortified town, treasury, army and ally - belongs naturally in any public-administration syllabus. Its maṇḍala scheme of buffer states and natural enemies, and its śāḍgunya analysis of the six diplomatic measures, can be taught alongside the structural realism that international-relations students now learn through Mearsheimer: not as nationalist ornament, but as indigenous analytic vocabulary. The Nītiśāstra tradition supplies another register - prudence, restraint, counsel, consequence. No civil servant needs to copy Kāṭīya; many would benefit from being made to argue with him.

Medicine offers a still clearer case. The Caraka Saṁhitā, especially its Sūtrasthāna, treats health through cause, symptom, diet, conduct, pharmacology and the physician's obligations; the Sūruta Saṁhitā's Sūtrasthāna classifies surgical instruments and procedures with a precision that belongs in any history-of-medicine syllabus. None of this exempts Ayurveda from evidence; it invites it. The PLOS ONE multicentric randomised trial of AYUSH-64 as adjunct care in mild and moderate Covid-19, published in March 2023, is one example; randomised double-blind trials of Withania somnifera, gathered into a meta-analysis in Phytotherapy Research in 2022, are another.

In May 2025 the World Health Assembly adopted the Global Traditional Medicine Strategy 2025-2034, which speaks of integrating safe and effective traditional medicine where appropriate; it does not, by itself, validate every claim made in the name of Ayurveda. That distinction matters. It is, in fact, precisely the distinction a serious curriculum is meant to teach. Astronomy demands the same sobriety. Āryabhaṭa's Āryabhaṭīya is not improved by exaggeration; it is impressive enough when read accurately. In its Kālakriyāpāda and Gola sections he posits 1,582,237,500 eastward rotations of the Earth in a single mahāyuga of 4,320,000 sidereal years. The sidereal day that follows from his arithmetic is twenty-three hours, fifty-six minutes and 4.1 seconds; the modern measurement gives 4.091 seconds.

He held that the Earth turns on its axis a thousand years before Copernicus would

publish the same idea in Europe. The decimal positional notation that organises every modern calculation is itself an inheritance whose lineage runs through Bakhshali and Brahmagupta, not through any European hand. A modern classroom can honour Āryabhaṭa only by refusing to make him a mascot. Philosophy completes the argument. The six darśanas are not loose spiritual opinions; they are technical schools with rules of inference and rival accounts of reality. The Nyāya-sūtra opens by naming sixteen categories of inquiry and accepts pratyakṣa, anumāna, upamāna and śabda as the means of knowledge - material that belongs in any logic and epistemology curriculum.



T KANNAN

The writer, a practicing Chartered Accountant and a Vedantic Scholar, can be reached at kannan@cakt.in

Rāmānuja's Viśiṣṭaiva, set out in the Śrībhāṣya and the Vedārthasaṅgraha, distinguishes cit, acit and Īśvara without dissolving difference into illusion or reducing matter to consciousness - a position that reads, in modern dress, as a thoughtful neighbour to the debates from P. F. Strawson onward on the unity of subject. The tradition's description of the Veda as apauruṣeya is part of its self-understanding; it cannot be the evidentiary ground for a public curriculum.

The ground must be argument. The Dharmaśāstras require a harder courage. They contain passages no honest reader can defend; they also contain the longest sustained argument in any tradition about the nature of normative authority, the limits of custom, and the relation of law to social reality. To teach them critically is not to endorse them. It is to train students in historical anthropology, legal sociology, gender analysis and the study of power. A civilisation that cannot read its difficult texts will either sentimentalise them from a distance or surrender them to polemicists. The classroom is the one place where reverence, rejection and evidence can be compelled to sit at the same table.

The real objection is politicisation, and it is serious. A careless syllabus can turn scholarship into slogan; a frightened syllabus

can turn ignorance into neutrality. The cure for politicisation is not curricular amnesia. It is scholarship strict enough to distinguish inheritance from indoctrination.

That cure has names and addresses. It means UGC-funded translations and peer-reviewed critical editions, prepared through institutions such as the Bhandarkar Oriental Research Institute, the classical-language universities and established Indology departments. It means graduate electives in Indian Knowledge Systems at central universities, with carefully designed pilot modules in selected CBSE schools. And it means integrated teaching: Kāṭīya in political theory, Caraka in medical humanities, Āryabhaṭa in the history of science, Nyāya in logic, Rāmānuja in metaphysics, and Dharmaśāstra in social-science method. The remedy for political instinct is not to keep the texts closed; it is to place them where political instinct cannot reach them - in a seminar room, with primary languages, comparative reading and an external examiner.

The argument is not exotic. Japan's Meiji reformers absorbed Western learning at speed yet built their new schools on the moral and institutional capital of Tokugawa-era Confucian, Shinto and Buddhist traditions. China, after a curriculum revision between 2014 and 2017, returned its Confucian Analects to the gaokao without sliding into theocracy. Finland teaches the Kalevala as living literature and gives Sámi knowledge its place in the classroom and policy alike. India's case is larger, older and more internally diverse than any of these - which is an argument for better design, not for avoidance.

Macaulay's shelf need not be burnt, nor worshipped. It can remain where it belongs - one shelf in a larger library. The classrooms of this country will, this academic year, send out a generation of school-leavers fluent in Newton and Kepler, and that is no loss. The loss is that very few among them will have been told that, in 499 of the Common Era, a man writing at Kusumapura held the Earth turning on its axis and counted the stars to within an arc-second of accuracy. The shelf was never empty. The neglected question is whether India will, at last, give its students the key to the room that was locked behind it.

What a rain gauge tells us about Indian science history



HISTORY HEADLINE

By SOLOMON VIMAL,
ASIT K BISWAS & VIJAY P SINGH

INDIA'S CONTRIBUTIONS to global scientific and technological developments are quite significant, but sadly, neither India nor the rest of the world knows much about them. A primary reason is that, unlike the West, not a single Indian university, IITs, or IISc has a credible research unit on the history of science and technology.

Consider rainfall measurement. Imagine a government official in the Mauryan Empire, sometime around 300 BCE. He stands at the entrance of a state granary in the weeks after the monsoon. In front of him is a clay bowl: wide-mouthed, standardised, placed precisely where the chief minister had dictated. The official reads the water level, converts it to *dronas*, and records the figure for the state. His report then travels up the administrative chain to formulate important evidence-based policies: the relief that farmers should receive, tax owed, and harvest levels. The state has measured its rainfall, and it was done because of law. This is explicitly documented in one of the most consequential administrative Indian texts.

The *Arthashastra*, attributed to Kautilya, chief minister to Chandragupta Maurya, is a treatise on statecraft, economics, and administration written roughly around the 4th-3rd century BCE.

What is mostly unknown is that it contains the details of a complete operational system for measuring rainfall — a standardised instrument, defined units of measurement, prescribed placement locations, and a regional data collection system for six distinct zones of the subcontinent. This is an example of evidence-based hydrological knowledge that drove Indian public policy.

The unit of measurement was the *drona*, approximately 13.2 kg by weight of water, translatable into a depth reading. The text then enumerates expected annual rainfall for six distinct regions of the em-

The *Arthashastra*, attributed to Kautilya, chief minister to Chandragupta Maurya. The 4th-3rd Century treatise has details of a system for measuring rainfall. FILE

pire: Himalayan foothills, Gangetic plains, regions toward the western and southern coasts, and drier inland zones. Actual rainfall was used as a proxy for economic conditions of a primarily agrarian country to decide on taxation and also subsidies when rainfall was low.

The next development in rain gauge came more than 17 centuries later. The Korean Cheugugi, installed under King Sejong in 1441 CE, is consistently cited in international hydrological literature as the world's first standardised rain gauge network. European instrumentation began even later: with Benedetto Castelli's rainfall observations in 1639, followed by Christopher Wren's tipping-bucket gauge in 1662.

If the *Arthashastra*'s system is accepted on its own terms, it represents the earliest documented, state-administered rainfall measurement system in the entire recorded human history.

What makes this finding genuinely remarkable is not merely the instrument. The measurement was mandatory, not a matter of local discretion. The gauge was placed at a specific government facility, the storehouse, ensuring consistency across locations. The data was fed directly into tax policy. The text explicitly connects rainfall totals to the remission of agricultural taxes. Farmers in drought-stricken regions received state relief calibrated to what the gauge recorded. This is integrated, evidence-based governance, a hydrological information system embedded

in the machinery of an ancient state.

That this achievement has gone unrecognised in global science history reflects a problem deeper than neglect. The dominant narrative of scientific progress was written during the European Enlightenment and hardened during the colonial era. Measurement and systematic observation were framed as Western contributions to civilisation. India's colonial education system, designed to produce administrators rather than historians of indigenous knowledge, did little to contest this. Post-Independence, investments in research on the history of science have remained conspicuously thin, not because the evidence is absent, but because institutions to pursue it rigorously have never been built.

The correction is not difficult to envision. What is needed is a coordinated national programme: new critical translations of texts such as the *Arthashastra* by teams combining Sanskrit scholars with historians of science and technology; peer-reviewed publications in leading international journals that place India's contributions squarely and accurately within the global scientific timeline; and curriculum reforms that give Indian students an honest picture of where their civilisation stood in the long arc of scientific development.

Solomon Vimal is CEO and Chief Scientist of Geothara; Biswas is an international authority on water; Singh is at Texas A&M University

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Sanil Raj Johnson

Some of the most significant discoveries in human history began with a simple question. The ability to ask thoughtful questions has always been central to intellectual growth, and classrooms that promote questioning often become spaces where genuine learning occurs. From the era of the Greek philosopher Socrates to today's research settings, questioning has remained a key method of inquiry.

Beyond testing

In contemporary classrooms, however, questioning often happens only after a lesson ends. Teachers typically ask a few predictable questions just to check if students have memorised the material. At a time when classrooms focus heavily on exams, documentation, and covering the syllabus, the art of questioning can revive curiosity and increase intellectual engagement.

Thoughtfully crafted questions activate a wide range of intellectual abilities and teach students to explore ideas from various perspectives and develop the skill to draw meaningful conclusions. Take, for example, a lesson on World War I. Instead of presenting the event as a collection of dates and facts, the teacher can guide the students through a sequence of questions. The first question might be: *Who were the two fac-*

tions involved? This can be followed by further inquiries: How did the war begin? What were the political and economic causes be-

hind it? What major events shaped its course? How did the conflict end, and what consequences did it have for the world?

As students attempt to answer these, they gradually construct the historical narrative themselves and understand the rela-

tionship among causes, events, and outcomes. Instead of memorising isolated facts, students begin to perceive history as a dynamic process shaped by interconnected factors.

The power of questioning extends across all academic disciplines. In Literature classrooms, for example, questions can guide students from basic comprehension to deeper interpretation. When introducing a poem, the teacher may begin with simple questions about the author and the title, and gradually, the discussion can move towards analytical inquiry. *What themes emerge from the text? What figures of speech are used? What message does the poet attempt to convey?*

Such questions encourage students to engage in discussion and enable them to participate actively in the process of interpretation.

In Science education, questioning plays a crucial role in sparking curiosity about the natural world. The history of Science shows how discoveries often start with simple questions. An apple falling from a tree led Isaac Newton to reportedly ask why the apple fell down. This curiosity eventually helped develop the law of gravitation.

In an elementary biology class, instead of merely describing the parts of a plant, a teacher might start by asking what role leaves play. As students move to higher levels, these questions can lead to more in-depth discussions about

plant biology and ecological systems.

Role in research

At advanced levels, questioning becomes the foundation of scholarly research. A doctoral thesis, for instance, is built upon carefully framed research questions. Scholars must define a thesis argument, formulate a hypothesis, justify the choice of topic, and explain the structure of their study. Questions regarding methodology, findings, and the scope for further investigation guide the research process. Thus, research itself can be understood as the systematic pursuit of answers to significant questions.

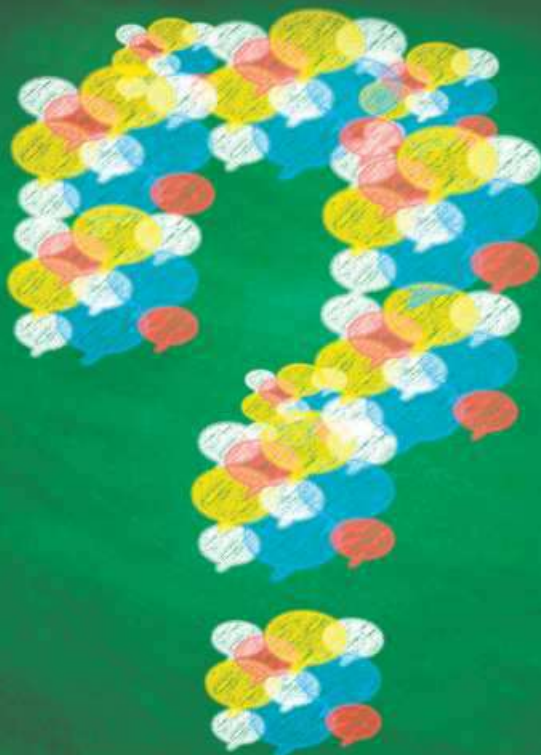
Yet, the most meaningful questions often come from the learner's own curiosity rather than those imposed from outside. They are not limited to textbook exercises or confined to the end of a lesson. Instead, they arise spontaneously whenever learners encounter something puzzling or intriguing. The teacher's role is not just to provide answers but to create an environment where questioning feels natural and ongoing.

Reclaiming the art and skill of questioning can be one of the most effective ways to promote deeper learning and sustained intellectual engagement.

The writer is a Professor of English and Dean of Student Affairs, Sahridaya College of Advanced Studies (Autonomous), Thrissur, Kerala. Email: saniljohn03@gmail.com

Question everything

The importance of the art of questioning in the classroom



GETTY IMAGES/ISTOCKPHOTO

SCHOLARSHIPS

University of Bath International Excellence Scholarships

Offered by the University of Bath, the U.K.

Eligibility: New international applicants who hold an offer for a undergraduate course beginning in September and are assessed as overseas fee-paying students.

Rewards: £8,000 per academic year.

Application: Online
Deadline: June 25
www.b4s.in/edge/UBIE1

Dr. Rajendra Prasad Scholarship

An initiative of Buddy4Study.

Eligibility: Indian students across India who Class 10 or Class 12 in the 2025-26

academic year and scored minimum 65% in their previous class, and whose parents have an annual income not exceeding ₹800,000.

Rewards: Up to ₹30,000

Application: Online

Deadline: June 28
www.b4s.in/edge/DRPSP1

University of Hartford Future Leaders Scholarship

Offered by the University of Hartford, Connecticut, the U.S.

Eligibility: International students who have secured admission to a graduate programme and demonstrate required proficiency in English.

Rewards: \$2,000 a year

Application: Online

Deadline: July 15
www.b4s.in/edge/UHFL2

Courtesy: buddy4study.com

HCL Jigsaw

HCL's student innovation platform HCL Jigsaw invites registrations for its seventh edition. This year, the competition moves from traditional quiz-based models to teams that will work towards identifying real-world problems, building solutions, developing prototypes, and pitching their ideas at a national finale.

The themes are AI

and Digital Futures; Climate and Sustainability; Medical Innovation; Healthcare accessibility, smart diagnostics, wellness technologies, and assistive innovation; and Robotics and Automation.

Eligibility: Students from Classes 6 to 9 from any board or school across India. Registrations must be submitted through their respective schools only.

Deadline: July 31.

For details, visit www.hcljigsaw.com



ACHAL AGARWAL, SUBHASH
LAKHOTIA, SUNIL MUKHI

We need an autonomous Research Integrity Office

RESEARCH INVOLVES original, creative, patient investigations and analyses to generate new knowledge. The findings are typically published in research journals following peer review by experts. Teaching and research at higher educational institutions (HEIs) are symbiotic, although hiring, promotions, awards, funding, etc. are significantly dependent upon research activity.

A higher "rank" encourages students to seek admission at an institution and thus generates greater revenue, and also facilitates enhanced public and private funds. HEIs' academic ranking on national and international platforms relies heavily on the number of research publications and their citation count, which together contribute 30 per cent of points in India's official National Institutional Ranking Framework (NIRF) and 50 per cent in the QS World University rankings.

The current quantity-dependent ranking parameters utterly fail to assess the true academic merit of research and teaching. In fact, following Goodhart's law that any measure ceases to be effective once it becomes a target, the current rankings are damaging the country's academic ecosystem.

Careful analysis of India's apparent rise in the global research scenario reflects this damage. In recent years, India has ranked third, behind the US and China, in the number of research publications, but unfortunately stands second in

With enhanced publication and citation counts being targets, institutions push their faculty to publish more. This has promoted the emergence of 'predatory' and 'paper-mill' journals

published papers being retracted for unethical practices. While contributing 5 per cent of global research publications, India accounted for 20 per cent of retractions in 2025. Several institutions securing top ranks have higher retractions for research misconduct. Additionally, numerous "research papers" from India appear in huge numbers in journals of dubious quality. With enhanced publication and citation counts being targets, institutions push their faculty to publish more. This has led to the emergence of "predatory" and "paper-mill" journals, citation cartels and financial incentives for so-called adjunct/visiting faculty or collaborators.

The "Stanford/Elsevier" 2025 list of the world's "top 2 per cent scientists", widely "acclaimed" in India, also reveals serious flaws. It considers publication and citation numbers to be a proxy for research quality. Twelve per cent of Indian researchers in this list have suffered at least one retraction, with one having more than 40. While this list includes 6,000-plus Indian researchers, the "top 1 per cent researchers" list by Clarivate Analytics, which penalises retractions and other misconduct, has just five.

Emphasis on research metrics has staggering financial costs, too. In the misplaced hope of improving research quality, India's public universities spend nearly Rs 2,000 crore annually on research journal subscriptions, besides paying, often to poor-quality journals, huge publication charges. The inclusion of private universities will magnify this amount.

What should be done?

A fair, responsible, transparent and quality-based assessment of individual and institutional research must replace the current rankings on numerical parameters. Rather than total numbers, the quality and genuine impact of a select few papers should be critically assessed. Unethical self-citations (institutional and individual) and retractions for unethical practices must be severely penalised. The recent introduction of a "mild" penalty for retractions by NIRF is a welcome beginning, but more stringent action is essential. Unusually large numbers of publications should be examined for possible "paper-mill" activity.

Data for regular, contractual and visiting/adjunct faculty reported by HEIs need rigorous verification since these numbers are often unethically boosted. Student outcomes (for example, alumni performance) need greater emphasis while assessing teaching quality since HEIs are expected to prepare questioning minds.

India's size and diversity necessitate an autonomous Research Integrity Office to oversee and enforce ethical teaching and research practices. Promotion, identification and recognition of high-quality teaching and research across the academic ecosystem should receive the highest priority so that India's enormous talent effectively takes the country to a truly leading position.

The writers are board members of India Research Watch, which advocates for academic ethics in India. This article is endorsed by the full board

Teachers must help students cope with NEET setback

BHASKAR NATH BISWAL

The National Eligibility cum Entrance Test (NEET) is far more than a routine administrative exercise; it is the ultimate repository of dreams for millions of young Indians striving to enter the medical profession. For an aspirant, securing a seat through this examination represents the culmination of years of relentless toil, sacrificed childhoods and the immense financial and emotional hopes of families across the socio-economic spectrum. In the collective Indian consciousness, NEET is the singular, merit-based bridge between a modest background and a life dedicated to healing.

The sheer magnitude of this examination is underscored by its staggering growth over the past five years. In 2022, registrations stood at approximately 18.72 lakh, which climbed significantly to 20.87 lakh in 2023 and surged to an unprecedented 23.81 lakh candidates in 2024. By 2025, numbers hovered near the 24-lakh mark and for the ill-fated 3 May 2026 attempt, over 22.79 lakh students registered across thousands of domestic and international centers. This consistent trajectory emphasizes the immense responsibility resting on the testing apparatus to maintain absolute sanctity for an exercise that involves a significant chunk of the nation's population on a single day.

However, the history of question paper leaks and logistical failures over the last five years has transformed this bridge into a precarious tightrope, repeatedly shattering the trust of the student community. From localized cheating rings and proxy candidate rackets exposed in 2021 and 2022, to the widespread institutional controversies regarding grace marks and paper compromises in 2024,

the integrity of the process has faced constant erosion. The ultimate crisis unfolded with the outright cancellation of the May 2026 attempt, after a confirmed pan-India leak orchestrated through leaked digital files and compromised insiders left the country stunned.

Naturally, public outrage has converged entirely on the National Testing Agency (NTA). While the fury directed at the NTA is completely justified and structural accountability, including thorough investigations by central agencies is essential, we must recognize that public indignation alone will not solve the immediate crisis facing our children. Rage cannot readmit a student, nor can administrative blame restore a broken spirit. Right now, a silent, dangerous psychological emergency is unfolding in study rooms, coaching hubs and households across India and our immediate, non-negotiable priority must shift from punishing the guilty to preserving the mental well-being of the innocent.

The current mental status of medical aspirants is one of profound disillusionment, acute anxiety and utter exhaustion. When the promise of a fair trial is broken after years of rigorous preparation, the psychological impact on an eighteen-year-old mind can be utterly catastrophic. Facing the reality that their hard work was compromised by a criminal network, students naturally descend into a sense of nihilism and severe depression, believing that merit no longer carries value.

In this volatile atmosphere, the NTA's announcement that the nationwide re-examination will be held on Sunday, 21 June 2026, presents a massive logistical and emotional hurdle. Forcing a traumatized, exhausted student to return to their books and summon peak performance

within a matter of weeks is a monumental task. If we do not intervene immediately with profound empathy, many vulnerable aspirants will completely lose their mental balance, potentially leading to an increase in student self-harm and suicide. This is an unprecedented testing time for students, parents and teachers alike, requiring us to act as a protective collective shield.

While parents must transform their homes into absolute sanctuaries of unconditional support, ensuring their children know their lives are infinitely more precious than any rank or OMR sheet, the ultimate burden of mitigation falls squarely upon the teaching community. In this systemic disaster, the role of the teacher must pivot completely from academic instructor to that of a spiritual guardian and psychological first-aid responder.

Teachers possess a unique, authoritative yet comforting position in a student's life; they are the architects of the student's routine and the custodians of their intellectual confidence. Therefore, the teaching fraternity cannot afford to be passive spectators to this trauma. They must actively design and implement intensive counseling frameworks within their classrooms or online, addressing the deep-seated anger and betrayal that these young minds are harboring. A teacher's voice right now must be louder than the chaos of the media, steadily reassuring students that while the evaluation system may be temporarily broken, their internal knowledge, capacity for hard work and intrinsic human worth remain entirely intact and unassailable.

Furthermore, the responsibility of the teaching community extends to a dual domain of counseling, where guiding the parents is just as



critical as healing the students. Parents are often paralyzed by their own anxieties, financial investments and societal pressures, which can inadvertently manifest as additional stress on an already fragile child. Teachers must step into this breach, holding urgent, empathetic dialogues with parents to de-escalate the pressure cookers within households. They must explicitly instruct parents on how to identify the subtle red flags of clinical depression, academic burnout, and suicidal ideation, such as sudden isolation, loss of appetite or expressions of worthlessness.

By organizing collective support circles and maintaining open, transparent channels of daily communication, educators can create a unified front that insulates the student from despair. Teachers must skillfully reframe the narrative around the June 21 re-examination, convincing fatigued aspirants that this is not a punitive measure or an unfair penalty but a vital, protective intervention designed to ensure that no compromised

score can steal their legitimate future.

This is an educational disaster of national proportions and the teaching community has a profound moral obligation to minimize its impact. They are the only professionals equipped to translate this systemic failure into a lesson on resilience, transforming a moment of absolute vulnerability into a demonstration of psychological strength. We cannot allow the administrative failures of an agency to become a death sentence for our brightest minds. By acting immediately as compassionate anchors, validating the students' grief while gently but firmly redirecting their focus toward the upcoming re-test, the teaching fraternity can prevent a massive mental health catastrophe. Let us rise together in this crucial hour, look past the unhelpful noise of pure outrage and actively save our students from the darkness of despair.

(The writer is a former college principal and founder of Supporting Shoulders.)

In an age where technology is rewriting job descriptions faster than universities can update curricula, the pressure on students to future-proof themselves has never been greater

Prepare for the future—sounds compelling on a motivational poster. But in the real world, where AI is automating entire job functions and industry demands are shifting faster than any curriculum can track, it is difficult to learn the trick to remain relevant.

Experts are aligned on one thing: awareness is not optional. Students must actively monitor changing market demands and emerging technologies, reshaping the sectors they intend to enter. Passive learning is no longer enough. The willingness to upskill, relearn, and adapt continuously is now a baseline requirement, not a competitive advantage.

But beyond technical literacy lies something more fundamental. Creativity and innovation are rapidly becoming the true human differentiators. Every routine, predictable, process-driven task will be taken over by automation. What machines cannot replicate is original thinking, the ability to solve problems that have not been defined yet, and the capacity to imagine what does not yet exist. The student who survives the future job market will not be the one who learned the most. It will be the one who never stopped learning and never stopped thinking for themselves.



Human Judgement

If medical students want to stay relevant in an AI-enabled system, they should never lose clinical competence.

But competence alone will not be enough. Future doctors will need AI literacy, clinical informatics, genomics, computational imaging, biomedical engineering to work in tech-driven care. Healthcare will not become doctor-less but deeply human. In the future, the most competitive clinician will be one who can bridge medicine with technology without losing human touch.

Dr Abhijat Sheth,
chairman, NMC



Adaptive Leadership

In the changing scenario, managers should shift from task supervision to designing human-AI work integration. Strategic implementation, people skills, continuous learning, and workflow redesign are the

four pillars that will define effective management. AI adoption should not be seen merely as a tech upgrade, but as a workflow redesign, including end-to-end operational changes.

Prof Rohit Singh,
director, Centre for Management Education, AIMA



Crops & Code

AI is transforming farming rapidly, particularly through data-driven decision-making, smart irrigation, drone spraying, and automated crop disease identification. While routine tasks such as basic manual soil testing and repetitive data collection will be automated, AI is designed to augment capabilities, not steal jobs. In this changing landscape, agriculture students need to combine foundational knowledge with technological fluency by mastering farm apps, drone operations, and data analytics. AI won't replace you. But those who blend domain expertise with AI will outpace those who don't.

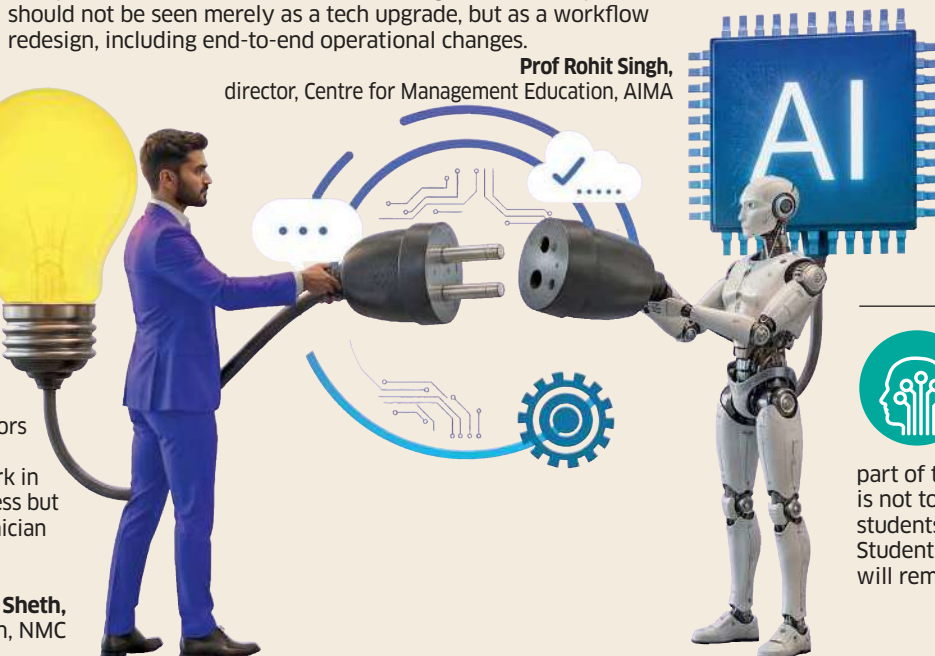
RC Agrawal,
former deputy director general
(Agricultural Education), ICAR



Enabler of Progress

AI should not be seen as a threat, but a tool that complements human intelligence. IITs and other HEIs have started ML and AI-based courses as part of the curriculum from the early semesters. The aim is not to replace conventional education, but to familiarise students with tools to improve their problem-solving skills. Students who continuously learn and focus on digital literacy will remain employable and relevant.

Prof Srinivasan Chandrasekaran,
HoD, Maritime Engineering, IIT Gandhinagar



AUTOMATION IS COMING. BE IRREPLACEABLE

Literary Sense Thrives



Automation is steadily reshaping literature and publishing, not

by wiping out jobs, but by redefining the skills they require. AI tools now handle grammar checks, proofreading, formatting, metadata tagging, and even basic manuscript screening faster and cheaper than ever before. This is bound to shrink demand for entry-level editorial roles and repetitive content work. But the heart of publishing will remain deeply human. That means developmental editing, literary curation, author mentoring, and critical judgment will play a big role. Machines can mimic language, but they cannot replicate lived experience or aesthetic instinct. The real shift is towards collaboration: professionals who blend literary sensitivity with digital fluency will thrive. Students must read widely, write boldly, but also learn the digital landscape. The writers and editors who will matter tomorrow are those who bring irreplaceable human depth to work that machines simply cannot feel.

P John J Kennedy,
former professor and dean,
Christ University, Bengaluru

Teachers still needed in the AI era

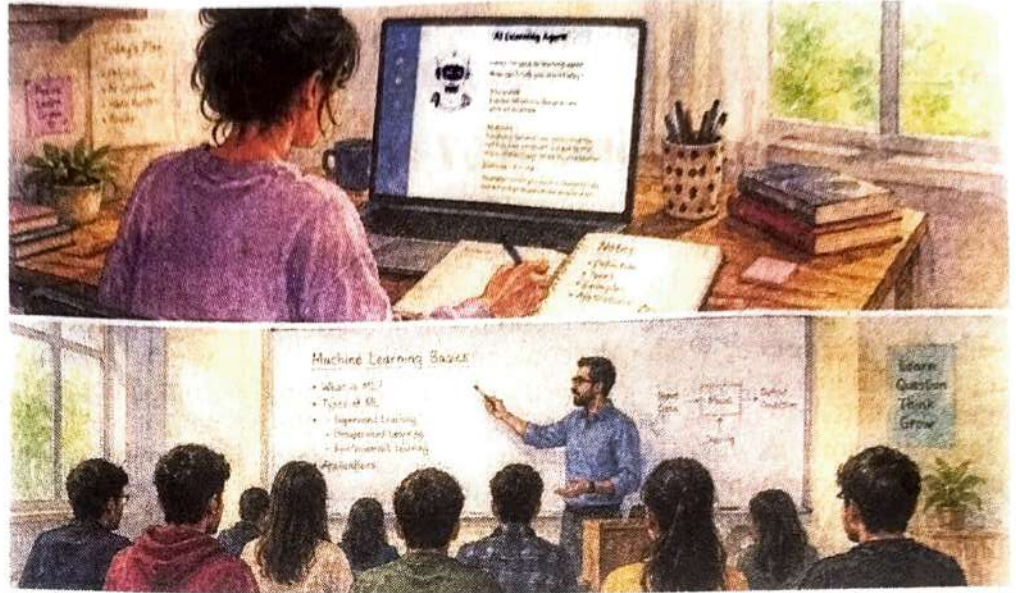
SAHANA PRASAD

“I told you not to ask Gen AI but to study from your notes!” Nidhi frowns as her young daughter keys in a half-formed question — a partially written paragraph — into the computer. Before Nidhi can even take a breath, a step-by-step explanation pops up, which her daughter gleefully copies and pastes! This question is now being quietly asked, in classrooms, student groups, parents’ WhatsApp groups, and a little hesitantly, in staff rooms and conferences.” If a student can ask an AI tool anything and get a clear, structured answer in seconds, what exactly is a teacher for?

“AI doesn’t ask why I have a ‘silly doubt.’ No eye-rolling, no tone. I can ask anything privately, even the night before exams, and get a structured answer,” says Meghana S, an undergraduate student at a private university. “The question itself is flawed, it lies on the premise that teaching is primarily about delivering information,” says Divya P, a commerce faculty. “AI is faster and often clearer than traditional methods. But learning is not only about access to information,” she adds. “But knowing something is not the same as understanding it.”

That gap is where teachers matter. As Dr Hongray R V, Dr T Hongray, Dean of Student Affairs, R V University, puts it: “I strongly believe that for as long as humans are around, a mentor, teacher, guru, or some human in the loop will always be required. A distinction needs to be made between cold knowledge transfer — which requires less of a human teacher — and the provision of conceptual clarity, perspectives, and a critical thought process, which still requires a human teacher. They bring their life’s worth of perspective and experience, which is hard to replace.”

A good teacher is constantly reading the room — who hesitates, who nods too quickly, who suddenly looks lost, and adjusts in real time. They shift tone, pace, and even examples as they



AI-GENERATED IMAGE, FOR REFERENCE ONLY

go. Sometimes, they even shift to the vernacular to make a concept land. When a concept is explained through something lived or observed, the lesson changes. Dr Hongray continues, “When a good, inspired teacher teaches, they are attuned to and very conscious of a student’s facial expressions, which give them real feedback to adjust their delivery approach.”

AI, for all its advantages, can’t do this; it does not carry the memory of how a concept failed to land with one group and refine it for the next.

Experts agree that the most important aspect of learning is motivation. Students do not engage with subjects in a purely rational way. Interest, confidence, and even persistence are shaped by how a subject is experienced in the classroom.

Dr Hongray is very clear on this. “From the point of view of students, the motivation for learning is often an emotional decision that relies heavily on inspiring teachers. Most kids grew up loving science and mathematics, but that often morphs into fear and dread towards physics and mathematics by the time they’re in high school. And one factor is oftentimes attributed to uninspiring teachers.”

Deepa Fernandes, who is a counselor at a Bengaluru-based polytechnic,

sums it up, “Students who feel seen and supported tend to engage more deeply. The relationship itself becomes part of the learning process. A sense that someone is expecting effort and believes in the capacity of the students often determines whether a student persists or disengages.”

A good teacher is an interpreter and mentor, someone who understands confusion from experience and can guide a student through it. Someone who shapes not just answers, but the way questions are asked.

Dr Baishali Garai, Programme Director for Basic Sciences at the School of Computer Science and Engineering, R V University, sums it up, “AI may deliver knowledge at scale, but it cannot replace the human spark that turns information into insight. In an age overflowing with data, teachers remain essential — not as transmitters of facts, but as guides of judgment, curiosity, and values. The future of education is not AI instead of teachers, but teachers empowered by AI — shaping minds, igniting purpose, and helping students become not just informed, but truly wise.”

So, the real question is not whether teachers are necessary, but whether teaching is ready to become more human, not less.

A language crisis in education

India's communication crisis is also an educational crisis, writes Aruna Parandhama

India was recently left with two words to ponder: "parasites" and "cockroaches". The clipped excerpts from Supreme Court Justice Surya Kant's speech sparked a range of reactions. Though the judge clarified that the comments were meant for "people with degrees" who use fake credentials to "try to infiltrate professional systems", many social media users took a different reading of the judge's comments.

This is not a unique situation. A remark by Shashi Tharoor in 2009, calling economy-class service "cattle class," drew considerable criticism for being a cynical jab at the political motives behind austerity and for being highly classist and insulting. Comedian and presenter Vir Das' 'Two Indias' act was seen by some as a slice of democracy, while others felt it was an international embarrassment for the country. Hillary Clinton botched her campaign when she publicly labelled half of Trump's voters a 'basket of deplorables' during the 2016 presidential election.

These are important not just because they caused the ripples they did, but also because they raise three underlying issues in communication in today's India.

The first is that language is beyond institutional control once it enters the digital sphere. Second, the intention no longer leads to the interpretation. The third and most serious is that the public reception becomes the sole "real" mean-



AI-GENERATED IMAGE, FOR REFERENCE ONLY

ing of the original content.

Public speech is a reality in the current fragmented interpretive communities. As long as the context of the recipient, clipping, and dissemination of the sentence changes, it can be used as a piece of satire, patriotism, insult, criticism, or propaganda. Communication failures today stem from the complexity of each communication, which is presented to the public as emotionally charged and context-free, repackaged by algorithms.

Language in academics

The ecology of language has been transformed by digital culture, which has removed the barriers between informal

and institutional modes of expression. From the courtroom to the classroom, from a political joke to the sarcastic tweet, a single observation can now carry like wildfire at the speed of outrage. The meaning is increasingly defined by circulation rather than by speakers. Therefore, India's communication crisis is also an educational crisis.

Communication in India has, for decades, been accorded a technical status—fluency, grammar, pronunciation, and employability. In most of the schools, however, the teaching of English is stagnant, and it is still characterised by excessive traditional teaching content, which is still dominated by the teaching

of prose, poetry and drama and is out of place in students' real communication life. This is simply not sufficient anymore.

India is a multilingual democracy struggling to address political polarisation, algorithmic misinformation, meme culture, video-cut discourse, and an increasingly virile online public. Universities continue to invest in STEM and management education. They continue to produce professionals with certifications and qualifications, but with little training in interpreting particular contexts or communicating ethically in a fair language.

The urgent issue in Indian higher ed-

ucation is not how well the students can speak English. The question we should ask: Can institutions make a difference in the development of citizens, judges, educators, bureaucrats, media, and political leaders who understand the ethical consequences of public language in a hyperconnected democracy?

The remedy

There has to be a media literacy requirement at the heart of citizenship learning. It should involve understanding literal versus implied meaning; identifying satire, irony, and rhetorical framing; reading statements in full context, not just viral fragments, to recognise misinformation from disinformation; and analysing meme cultures and outrage economies, as well as understanding how algorithms can exacerbate conflicts and emotional reactions. It should also sensitise everyone to the language they use when criticising what they dislike.

It is something which humanities educators are best positioned to do. The humanities are not 'soft' subjects: at this moment, they may be the last vestiges of academia where students can be trained to become responsible citizens by teaching the nuances of reading a full text, how to disagree respectfully, how to tell apart misinformation from disinformation, and how to verify misinformation.

The row over Justice Surya Kant's comment reveals how fragile the communication is in today's India, where language is always instantaneous, permanent, weaponised and infinitely reproducible. But if the education system is unaware of this, India risks producing generations that are professionally prepared but not communicatively prepared.

If universities continue to ignore this reality, the next national crisis may emerge from loose statements by those in power and from how millions choose to read them.

What matters more in career: Content or contacts?

PAVAN SONI

For the longest time, it was believed that 'who' you know matters more than 'what' you know. To paraphrase: A good lawyer knows the law, but a great lawyer knows the judge. Your network could get you to places because, in the absence of formal institutions and prohibitive transaction costs, personal ties and social alliances made the difference between relevance and obscurity.

People doubled down on expanding their contacts, offering currency in exchange for networking events, agencies, clubs and rituals. If one were to make a choice, contacts triumphed content, hands down. But is it so today? Let's see what has changed.

The advent of pervasive, highly affordable means of communication and transportation, coupled with easy

access to information and the widening of the opportunity base, has resulted in rapidly declining search and transaction costs. The emergence of formal rules of engagement and emboldened economic institutions has enabled many more people to participate in value creation. This puts a premium on specialisation and on developing and retaining content.

Let's take an example. In the heyday, if I were a carpenter, my market discoverability would be limited unless I also published myself as a plumber, electrician, mason, painter, and interior designer, all rolled into one. I would rather have multiple tentacles to increase my searchability — hoping that something would click. But in today's world of the Internet and smart devices, what will increase my market value?

On the demand side, I would search for the best carpenter in town, rather

than settle for the one who is also a carpenter. The premium of specialisation pays off owing to the marginalisation of search and transaction costs. This leads to the emergence of specialists — because somebody else, or rather something else, has taken care of your contacts.

Across fields, whether it be sports, as seen in the IPL, teeming with talent from tier-2 cities and towns, to open source development forums, where top contributors are mostly individuals labouring at their own accord, what you have are dwarfs who you know. In chess, the eight-year-old Tamizh Amudhan from Sivakasi beats World No. 7 Vincent Keymer in an online blitz tournament. All he had was his Internet connection, powered by a mobile hotspot in a darkened room, and a brain brimming with ideas. No contacts, only content.

The tale of Indian Chess Grandmasters is that of content over contacts, because one can learn the game through pretty much any means, play from pretty much anywhere, and defeat anyone. This was not possible in the 90s — one had to be in the right place, with the right people, blessed with the appropriate patronage, coached in the legitimate schools of chess, to get a fighting chance.

Nowadays, chess players are demolishing pieces right out of their bunkers in war-struck Ukraine. The top programmers in the world come from Siberia, Poland, and Hungary — places that are not exactly the hotspots of technological revolution. Linux was written by a single person, Linus Torvald, sitting in his dorm in Helsinki, with a cat for company. So much for being 'connected'.

If you have enough content, contacts will follow. If you don't have content,

your contacts will disown you in no time. Your content is like the fragrance that attracts people. As long as you keep your content fresh and relevant, by constantly investing in yourself, you won't have to chase people; they will rather sniff you out.

So, when you visit conferences and are busy shaking hands and dishing out cards, bear in mind that people do not remember your card; they remember 'you'. Instead of maximising reach, focus on having one or two deep, meaningful conversations, and you will return wealthier.

Neither content nor contacts come cheap; they both require considerable and consistent efforts. The critical distinction, however, is that contacts you share, while content you own.

When you leave an organisation, what do you carry with you — content or

contacts? You may argue that you carry both (which is not really the case). Your contacts are valid till you can dish out something meaningful to them, something asymmetric.

Otherwise, over time, if the contacts do not see the goods, they will lose interest. As you leave a firm, you carry the content, and this might, in time, revise your contacts.

Casting the question back to your career: Do not chase people, chase excellence. If you are great at your craft and honest in your approach, the appropriate people will discover you. Content is indeed the king, and even more so in a connected world.

As for the content, it is not just knowledge but contextual knowledge. It is the knowledge that works, solves problems, and moves the world. Everything else is a flux.

Dr/21

NEET Leak: A national crisis of trust in education

The cancellation of NEET 2026 following allegations of a paper leak has triggered outrage and deep introspection across India. The scandal is a grim reflection of the moral and institutional decline within the country's education system



**JS
RAJPUT**

Professor Jayant Vishnu Narlikar, one of our most distinguished and decorated scientists, wrote an article on "Declining Work Standards" around fifteen years ago. I find it extremely relevant in comprehending the national anguish and shame being expressed following the cancellation of the NEET examination in May 2026. The learned professor wrote: "Further, our examination system has become so corrupt that we have come to accept malpractices as routine. With copying condoned even at the highest level, the examinations conducted by boards, colleges and universities are losing their credibility as a means of assessing the candidate's performance. No government, state or central, has either the will or courage to restore a sense of discipline in the system. Because of this, many specialised institutions have introduced their own entrance tests."

The National Testing Agency (NTA), created in November 2017, is one of several such bodies established during the last two to three decades. There have been serious issues of paper leakage earlier as well, including NEET-UG 2024, UGC-NET 2024, and JEE-Main 2021. The 2024 paper leak was investigated by the Central Bureau of Investigation (CBI), which enjoys nationwide credibility. Parents and the public remain unaware of what happened to the guilty and how many of them received exemplary punishment. The CBI is conducting the same exercise again for the 2026 paper leak. Media reports indicate that it has successfully unearthed the conspiracy, and that criminality will eventually be established.

Mention is being made of professors who acted as paper-setters. It must serve as an eye-opener to every teacher and academic, from schools to higher education institutions. Sadly, the entire scenario reaffirms the fact that "professions suffer credibility erosion only because of their own professionals". The credibility crisis surrounding the majority of regulatory bodies confirms this beyond any doubt.

The leakage of the NEET examination paper prior to its scheduled date of May 3, 2026, has attracted the attention of both the young and the old alike. The plight of 22.7 lakh young aspirants was indeed shocking. Most of these aspirants belong to families that could never imagine securing admission for their wards in private medical colleges. They had done their utmost in mobilising resources to enable their children to join tuition centres, coaching classes, and other support systems that claim expertise in preparing students for competitive entrance examinations. Obviously, most of these are private commercial ventures. They are well equipped with the tricks of the trade and techniques of extracting the maximum from hopeful young people and their families. There are numerous examples of entire families relocating to cities with well-advertised coaching centres. They do all of this in the hope of securing a bright



future not only for the admission seeker but for the family as a whole. The inadequacy of school education is acknowledged at every level. Consequently, parents trust private ventures as the only alternative capable of kindling hope for success, often unaware that it is ultimately a business — and business today has its own "morals and ethics". Unfortunately, this aspect hardly finds mention even in serious deliberations on how to conduct clean examinations.

Over the years, India's youth have suffered numerous instances of paper leaks, not only in examinations for admission to coveted professional courses but also in recruitment examinations for jobs. Imagine the damage that the profession and the nation would have suffered had those who purchased the paper successfully enrolled for medical degrees. The nation is generally aware of the numerous factors and forces that indulge in such immoral and unethical practices year after year, and why the system repeatedly fails to punish the guilty. Dependence on coaching institutions has increased steadily.

The neglect of quality and excellence in the majority of schools run on public finances is squarely responsible for the growth of private schools and the coaching industry. Young adolescents, after completing their first ten years of schooling, gradually realise how intense the competition will be in securing admission to reputed and affordable professional institutions. The majority of parents one interacts with remain worried and uncertain, often for several years. This does not refer to the privileged classes who are sufficiently equipped to send their wards to institutions in Western countries. There is also a subgroup that prefers institutions in Ukraine, Mauritius, and a few other destinations.

The first two or three decades after Independence were characterised by the presence of a generation that was admired throughout the country. Their lives reflected immense sacrifice and suffering endured for the freedom of the nation and for the dignified future of generations

to come. As young people in the 1950s and 1960s, many of us had the privilege of meeting freedom fighters who refused to accept pensions announced for them by governments. We learnt invaluable lessons about the nation and our obligations to society and future generations.

Those of us who received our schooling and university education during that period never experienced the anxiety of a possible paper leak before examinations. Tuitions were considered infra dig, and it was unimaginable that a college or university teacher would teach in a coaching centre. Every teacher was always willing to assist students needing support. Gradually, however, generations changed, Gandhian values receded into the background, and elected representatives — exceptions apart — who tasted power developed their own values and norms. Adolescents and young people in schools and higher education institutions found before them a new set of icons: teachers busy with tuition classes, coaching systems, and even side businesses, while neglecting their basic moral obligations.

Most candidates appearing in entrance examinations for professional courses do so after completing school education. The undue anxiety and excessive concentration on securing higher scores often leads to insufficient emphasis during school years on the aspects necessary for holistic growth — from an innocent individual "person" into a complete "personality".

India deserves schools that embody an exemplary, morally imbued work culture. It deserves conscious teachers who remain ever aware that they themselves are the "true textbook for the pupils" and who continue as active lifelong learners. In such institutions, the entry of unscrupulous elements would become impossible. This is not a utopian wish; such schools and teachers still exist in India today.

The story of Japan's reconstruction after the Second World War demonstrates how focus on social, cultural, and moral dimensions in schools and teacher preparation institutions created professionals committed to being "true to their salt". The government and society both played their roles sincerely: schools possessed the necessary infrastructure, appropriate teacher-student ratios, and adequately trained teachers. Unfortunately, this is still not the case in India.

Those entrusted with finding better ways and means to conduct clean NEET and other entrance examinations have a difficult task ahead. It would be a humble suggestion to them to study carefully the implications and imperatives of Paragraph 15.2 of the National Education Policy 2020: "According to the Justice JS Verma Commission (2012) constituted by the Supreme Court, a majority of the stand-alone TEIs — over 10,000 in number — are not even attempting serious teacher education but are essentially selling degrees for a price."

Teachers and teacher education institutions must ensure competence, commitment, and high-level performance as the basic essentials for moving towards a morally strong education system — one that India's children and young people truly deserve.

The Pioneer
SINCE 1865

The author is an educationist, a Padma Shri awardee, and works in religious amity and social cohesion

dailypioneer
 @jagmohansrajput
 The Pioneer

Credit linked micro: Nano-Credentials — A dynamic gamechanger in skill education of youth



**DR T SENTHIL SIVA
SUBRAMANIAN**

Education, especially skill-based, forms an essential element and constituent of National Education Policy, NEP 2020. It stands out to be the strongest pillar to change the market dynamics of our nation. India's skill — based education under National Skill Mission foster innovation driven society, community and finally accelerates our orange economic growth as well.

Qualitative educational values obtained through skilling forms the vital and integral portion of developing the holistic personality of students, teachers, and trainers. Skill based programs which are industry aligned in our nation form the greatest asset for the students and teacher fraternity of all groups at all academic institutions. Educational framework collaborated with industry inclined model curriculum makes a paradigm shift in the employment index in India.

India has been adapting the best practices of National Educational Policy 2020 which was launched five years ago. It enhanced the holistic develop-

ment of students, teachers, and trainers. NEP 2020 plays a key role in developing significant features such as problem-solving ability and capability achieved through design thinking, experiential learning in the form of industry internships, project-based learning combined with hands — on practice, critical thinking aligned with solving real-world industry problem statements, empathy in synergy with emotional intelligence, digital literacy in streamline with application mindset. Most importantly, skill development programs are designed to meet the industry job matrix across all segments.

India's higher educational systems are shifting towards agile — based blended learning-model called as credit linked Micro: Nano-Credentials. Micro: Nano-Credentials are the best and most valuable tools for institutions designed under the umbrella of National Education Policy, NEP 2020 which is intended to meet the criteria of National Credit Frameworks (NCRF).

It is principally approved under National Occupational Standards [NOS] and National Skill Qualification Frameworks (NSQF) that ensure meeting the specific industry job roles. Micro: Nano-Credentials is forming the important and integral part of



Indian education system. Micro: Nano-Credentials are governed and regulated by NEP 2020. It is becoming a complement and supplement student-centric fit for our present educational systems. Micro: Nano -Credentials

are short term-based approaches which offer a flexible, hybrid combined with agile, diversified, multidisciplinary and life-long learning starting from 7.5 hours duration. It is expected to create many opportunities for different stakeholders and is implemented through Skill India Digital Hub [SIDH]. Micro: Nano-Credential courses span from emerging technologies like Artificial Intelligence, industrial automation, and all digital technologies. Micro: Nano-Credentials are primarily focused on industrial applications in



addition to learning the foundational concepts and theories. It creates competency frameworks especially for students across all domains. The objective of Micro: Nano-Credential courses is to meet sustainability development goals that mobilise the knowledge of students, teachers, and trainers. This will give a great push for industry job placements and enhance employability of students in higher educational institutions.

India's sector skill councils have designed and developed several Micro-Credential courses in order to re-skill and upskill the students in higher educational institutions. Indian universities are thinking of a smart educational framework of implementing the Micro-

Credentials in collaboration with sector skill council in the form of student's project-based learning, industry internships through on job training in manufacturing shop floors and apprenticeships activities. Micro-Credentials offers ease-of-access, ease-of-affordability and most importantly ease-of-learning for students across all groups, teachers, and trainers. Micro-Credentials are principally focused on industry aligned programs available in interdisciplinary domain — related and cross-domain specific forms through short-term based self-paced, offline and hybrid learning approaches. Micro: Nano-Credentials foster institutional development through industry — relevant skills of different job roles developed exclusively for the benefit of students.

Micro: Nano-credentials are offered in the form of classroom lectures, theory, laboratory practical, firsthand learning. It is aligned extensively with growing labor markets in India and across the globe. Micro: Nano-credentials are globally recognized in different countries.

Please read the complete article online at dailypioneer.com

(The writer is a Head Institute Industry Interface Program Hindustan College of Science and Technology, Mathura)

CLASS ACT

Rylee Kirk on a growing initiative across schools and libraries in the US

Cursive Club

Chris Kobara stood in front of an electronic whiteboard in his New York City high school, practising with a swoop of his pen the connection between the "a" and "r" in his name.

He stepped back and looked at the board with Suzanne Finman, his English teacher, who had been coaching him. "If it's readable, it's something," he said, displeased with his effort.

Kobara, 18, was one of six students who gathered after school in Finman's classroom at the Urban Assembly Early College High School of Emergency Medicine on a recent afternoon to practise signing their names in cursive.

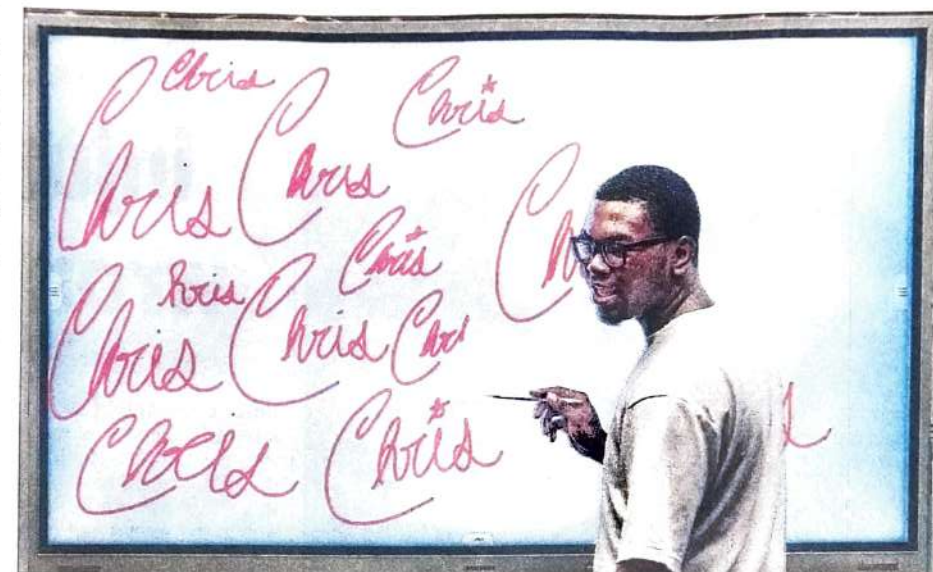
The students, all of them high school seniors, filled sheets with their names, at times comparing the flourishes they added to their letters. The club is one of several that have been established in recent years at schools and libraries across the country where children are learning cursive as an extracurricular activity.

Cursive was not included when the Common Core standards were adopted in 2010, and now many children can't sign their names, write checks or read historical documents written in cursive, such as the Declaration of Independence.

In a 2016 interview with Education Week, Sue Pimentel, who helped shape the Common Core state standards for English and language arts, said a higher priority had been placed on students learning how to use technology than learning cursive.

While some states have restored cursive writing to their curriculums, some students in states where it remains excluded have sought ways to learn the skill outside school.

"Knowing how to write



PATTERNS: High school student Chris Kobara practises writing his name at a New York City school while other members of the club look on



your name in script is really important," Kobara said. He's been practising his signature for several weeks after school, perfecting a loop in the "C" of his first name, and plans to write thank you notes to teachers in cursive.

It started with the students' curiosity. "When students see me take my own notes in cursive, they immediately ask me

to write their name in cursive, and then they ask me to teach it to them," Finman said. "This has happened a lot over the years, so I asked, 'Could I teach you this in a cursive club?'"

While some students are learning in extracurricular clubs at school, others are finding their penmanship lessons at libraries. Mandi Whipple, a librarian who specialises in

young adult books at the public library in Blackstone, Massachusetts, US, was inspired to start a cursive club last year after one of her grandchildren couldn't read cursive writing.

Now, a group of students meets at the library for an hour every Thursday to practise the looping script of their letters. "The ones that have stuck with it are now writing full sentences," Whipple said.

A cursive programme at Abington Community Library in Clarks Summit, Pennsylvania, US, has a defined curriculum that children follow for eight weeks, focusing on a few letters each week. "We show them how to do it, and they can

copy us on paper," said Leigh-Ann Puchalski, the children's librarian. "Then we do practice where they practise on worksheets. To make it fun, we add different sensory elements."

The children can trace letters in salt with their fingers, use magnetised drawing boards called Magna Doodles and write in gel pens to make it fun. Puchalski said. The programme has been so popular that it has had a waitlist, she said.

With the 250th anniversary of the signing of the Declaration of Independence this year, Puchalski is emphasising the historical side of cursive and having children trace the Constitution. "For one of the sessions we'll use parchment paper," Puchalski said.

In Pennsylvania, cursive won't be a relic of the past much longer. Gov. Josh Shapiro signed a bill in February to reintroduce it in schools, joining at least 23 other states that have started to require that it be taught in schools. New Jersey is reintroducing cursive for the 2026-27 school year. Idaho brought it back last year.

Cursive is not just for signing checks. It also has a scientific advantage. "When you form those intricate letters, those motor patterns on paper, it actually requires much more of the brain, and the brain is much more active, and it's more stimulating for the brain than to type letters on the keyboard," said Audrey van der Meer, a brain researcher and professor of psychology at the Norwegian University of Science and Technology in Trondheim.

Van der Meer conducted a study of 140 students who were quizzed after a lecture by their professor. Those who took notes by hand scored better on the quiz than those who typed their notes, she said.

NYTNS

What AI is teaching inside classrooms across the country

Vivek Prakash

letters@hindustantimes.com

A fourteen-year-old in Bengaluru builds a personalised news application at home. A student in Noida pairs Python with hardware to construct a working home assistant. A child in Pune has been writing functional web-sites since age ten. What distinguishes these students is not aptitude. It is access: the right tools, the right teacher, enough structure to make curiosity productive.

The CBSE mandate to introduce AI and computational thinking from Class 3 onwards, beginning 2026-27, is an effort to institutionalise exactly that kind of access. The question it raises is which version of AI education the country ends up building: one that produces students who can think alongside these systems, or one that produces students who have simply learned to depend on them.

It is already there!

Artificial intelligence did not wait for a curriculum mandate. It arrived through the student's smartphone, informally and without pedagogical guidance, well before any policy framework took shape. A survey of Indian high school students this year found that 88 percent already use AI for assignments, 79 percent for exam preparation, and 67 percent to explore con-

cepts they were curious about.¹ These are not students waiting to be introduced to a tool. Many of them found it on their own.

The same survey found that 44 percent worry that AI is reducing their capacity for independent thinking.¹ That concern is not unfounded. The convenience of an instant answer, habitually sought, gradually displaces the tolerance for uncertainty, which is among the more important intellectual habits a student builds. A twelve-year-old who two years ago lacked the skills to complete an application can now build a working prototype using AI. Whether that represents genuine learning depends entirely on whether the student understands what they have made. This informal layer sits across a child's learning life, largely unsupervised, and more consequential than most official conversation acknowledged.

The distinction that matters

Research is beginning to map the difference. Students using AI-assisted coding tools outperform peers on task completion speed but demonstrate limited gains in conceptual understanding.² A separate analysis found that students who used AI for active inquiry, testing assumptions and interrogating outputs, scored above 65 percent on concept assessments, while those who used it to generate answers

without engaging scored below 40 percent.³

Treating AI output as a conclusion trains students to produce. Treating it as a starting point to be interrogated and corrected trains students to reason. That distinction is, in many respects, the defining pedagogical question of the coming decade.

NITI Aayog's 2025 analysis, produced with NASSCOM and BCG, points in the same direction. The roles most exposed to automation are those defined by writing code to specification. The growing demand is for professionals who can frame problems, assess AI outputs critically, and operate at the level of systems rather than tasks.⁴

What AI cannot replace

AI has genuine value in the infrastructure of teaching: generating practice problems, surfacing gaps, automating reports, and helping students build at a pace that was not possible before. But speed of output is not depth of understanding. Much of what AI generates is, on inspection, wrong or incomplete. Detecting those gaps requires subject understanding. Without that foundation, AI output becomes noise dressed as progress.

John Hattie's synthesis of over 800 meta-analyses places teacher quality at the top of all determinants of student out-

comes, above class size, curriculum design, and technology access.⁵ Session data from companies like Codingal is consistent with this: outcomes correlate far more strongly with who taught the class than with which tools were used.

The most valuable role of AI in a classroom is to give the teacher more of what they are perpetually short of: time and attention. Those recovered hours compound into presence and the capacity to stay with a student who is struggling.

India's infrastructure constraints are real. UDISE+ 2024-25 data shows Kerala at 99.1 percent of schools with functional computers; Bihar at 23.8 percent, with internet access as low as 5.9 percent in government schools.⁶ Device counts tell only part of the story.

LIRNEasia and ICRIER found that only 26.8 percent of Indian youth between 6 and 14 possess basic internet browsing skills, with Meghalaya and Tripura below 10 percent.⁷ A 2021 Azim Premji Foundation report found that nearly 60 percent of children could not access online learning even during the pandemic.⁸ Providing a device without that baseline competence is the appearance of access, not the thing itself.

The deeper constraint is teacher readiness. In too many districts, the teacher being asked to teach AI has no working

familiarity with the tools that policy now requires. A child who receives a device but sits with a teacher who has never used these tools will not learn to think with AI, only to navigate its surface.

The Window

PwC's 2025 Global AI Jobs Barometer found that workers in roles requiring AI skills command a 56 percent wage premium over those without, up from 25 percent just a year earlier.⁹ NITI Aayog estimates that the difference between India's optimistic and default trajectories by 2031 is 5.5 million jobs, contingent on whether AI fluency is embedded across educational levels and not concentrated only at the elite end.⁴

The CBSE mandate represents the structural commitment the moment demands. But the informal layer, the AI students already reach for every evening to navigate homework and satisfy curiosity, is where habits of mind are forming right now, without adult guidance.

India has a real window. The question is not whether AI belongs in the classroom, that is already settled. The question is what kind of thinking classrooms teach alongside it, and whether the system moves quickly enough to extend that to every student.

The author is CEO, Codingal

Global degrees, local careers: how Indian students can make the right choices

Ashish Gupta

letters@hindustantimes.com

Something significant has happened in Indian higher education over the last two years: the mad rush to go abroad has finally slowed down.

After a decade of near-uninterrupted growth in outbound student numbers, the pace of departures has eased. According to data placed before the Rajya Sabha by the Ministry of Education, the number of Indian students departing for foreign universities in 2025 fell to 6.26 lakh. It saw a sharp drop from the 9.08 lakh recorded in 2023.

While some commentators have called this a "retreat," it is more accurately described as a behavioural shift. A new generation of applicants is learning to think deeply before they leap.

This quiet transition matters enormously. The landscape of international education has fundamentally changed shape, forcing families to move away from mass migration towards highly targeted, deliberate institutional selection.

Consider how rapidly the global map has been redrawn. Canada, long the default first choice for Indian families, implemented a steep contraction in study permit approvals through 2024 and 2025. This sudden regulatory shift caught thousands of applicants mid-plan. Concurrently, macroeconomic pressures and political constraints created headwinds in the United States, while Australia introduced much tighter compliance thresholds.

Conversely, the United Kingdom emerged as a primary beneficiary of this geopolitical redistribution of student capital over 98,000 Indian-sponsored study visas were granted in just the first half of 2025, with a 96% approval rate and a 44% surge in grants in the second quarter alone, per UK Home Office data.

Germany, long overlooked by Indian families focused on English-speaking destinations, saw its Indian student numbers more than double between 2020 and 2024, crossing 59,400 students, according to the NITI Aayog's Internationalisation report released in December 2025. France, Ireland, Singapore, and the UAE are all seeing meaningful growth too.

Students need to evaluate destinations through multiple lenses: career outcomes, industry exposure, affordability, migra-



The landscape of international education has fundamentally changed shape

FILENT

tion pathways and long-term plans.—balancing institutional specialization against targeted regional economic outcomes.

The real question is about outcome, what career, in what city, in what timeline, at what cost, financed how, and then working backwards to find the degree, the country, and the institution that delivers it most effectively for that particular student.

That question changes everything. A student targeting a role in technology or financial services in India should think very differently about destination than one who intends to build a career in Europe's industrial corridor, or in the Gulf's growing knowledge economy. The UK's one-year master's programmes are genuinely efficient for students who want international credentials without multi-year absence. Germany's near-zero tuition at public universities makes it one of the highest-value propositions on earth for engineering and STEM students willing to invest in language preparation. Dubai's industry-linked programmes feed directly into some of the most dynamic professional ecosystems in the world.

None of this is secret information. But it rarely finds families at the moment they most need it: which is months before the first application deadline, not weeks after. The challenge is not lack of information. It is sequencing. Many families begin with country rankings when they should begin with student fit. Academic profile, financial capacity, language readiness and career intent need to be assessed before destinations are shortlisted.

Evidence-based decision-making models prioritize a holistic initial profile assess-

ment.

They systematically account for academic indicators, linguistic proficiency, financial capital, and long-term vocational metrics prior to geographic shortlisting. This diagnostic approach maps cross-border options to individual student capabilities rather than generic institutional rankings. It gives enough runway for test preparation, whether for the International English Language Testing System (IELTS), the Pearson Test of English (PTE) or TOEFL — because the difference between a good score and a great one is almost always preparation time, not ability.

It prepares application documents — the Statement of Purpose (SOP), the Letters of Recommendation (LORs), the financial records — with the care they deserve. The SOP, in particular, is the one place in an application where a student speaks directly to a university in their own voice. It is also the element most consistently underestimated by Indian applicants. Getting it right is not about impressive vocabulary. It is about clarity of intent.

From there, an informed process tracks scholarship windows, many of which close well before families have even begun shortlisting, follows up on applications actively, and prepares the student for visa interviews before the anxiety of waiting sets in. And it continues past the

THE GLOBAL DEGREE OPENS A DOOR, INFORMED CHOICE IS WHAT DECIDES THE DOOR

offer letter: education loan documentation, accommodation planning, health insurance, money transfer logistics. The final mile of a study abroad plan is where avoidable disruptions concentrate.

The students who get the most from a global degree are not necessarily the ones with the highest scores or the deepest pockets. They are the ones who went in knowing why they were going.

They chose programmes with industry linkages, not just rankings. They pursued internships with intention. They came back, or stayed, with professional networks, cross-cultural fluency, and a clearer sense of where they want to go. Those qualities are noticed by employers everywhere, including in India, where international experience increasingly signals not just credential but character.

The global degree opens a door. Informed choice is what decides the door, and whether the student is ready to walk through it purposefully.

India's students are becoming more considered in how they approach this decision. The numbers show it. The trend lines show it. The families walking into counselling conversations today ask better questions than they did three years ago. They want to understand visa pathways, not just rankings. They want to map costs to projected earnings. They want to know what happens after the degree, not just during it.

That instinct is exactly right. And it deserves to be met with exactly the right information, at exactly the right time.

The author is Co-Founder & CEO EdNex Global

Why educators must adopt experiential learning

Preethi Rajeev Nair

letters@hindustantimes.com

Classroom education has often relied on a passive instructional model. Students listened, memorized, and reproduced information during examinations. This system successfully imparted foundational knowledge. However, it often left learners ill-equipped for real-world complexities. Many lacked essential competencies like problem-solving, adaptability, and critical analysis.

Experiential learning offers a necessary corrective. While "learning by doing" is not a novel pedagogical concept, its practical value is immense. It shifts the focus toward active engagement. Students learn through direct activities, structured reflection, and real-world application.

Comprehension deepens significantly when learners actively participate. By evaluating their own experiences, students internalize concepts faster. More importantly, they learn how to transfer these lessons to entirely new situations. What has changed in India is the scale. An approach once confined to elite institutions or progressive experiments has become the national direction of travel.

Traditional pedagogy assumes that students absorb information at a uniform pace. Hands-on activities make learning more engaging and memorable because students connect ideas with action, experience, and emotion. It builds neural pathways anchored in physical sensation, sensory context, and emotional engagement. Information encoded this way is retrieved more reliably.

There is another dividend, less discussed but equally important. Experiential methods reframe "failure" entirely. Mistakes become opportunities for reflection. If a model bridge collapses, the failure itself becomes secondary. Students immediately focus on diagnosing the structural flaw and engineering a fix. This naturally builds resilience. The "what"



Learning increases when there is active participation

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and the "why" drive the process.

This approach also addresses a major deficit in traditional schooling: interpersonal development. Real-world problems require collective solutions. Activities like community surveys, event planning, and prototyping foster peer interaction. Students must debate, delegate, and actively listen. They learn to balance individual accountability with group success. Ultimately, these behavioral competencies hold as much weight as pure academic proficiency.

This educational shift is no longer the domain of a few progressive institutions. Experiential learning anchors India's National Education Policy (NEP) 2020.

As the country's first systemic reform in 34 years, the mandate is absolute. Schools must abandon rote-based testing and prioritize applied knowledge. The policy further eliminates historically rigid educational boundaries. It removes the hard separations between the arts and sciences, as well as academic and vocational tracks. Crucially, it erases the divide between classroom instruction and real-world application.

Vocational exposure now begins from Class 6. A mandatory ten-day "bagless period" at the middle school stage immerses students in real work environments, turning the neighbourhood itself into a classroom. Board examinations are being restructured so that

the operative question is not what a student remembers but what they can do with what they know. India's demographic reality sharpens the urgency. With the world's largest youth population, the country cannot afford a system producing graduates equipped only for the economy of a previous generation.

Innovative classrooms are translating these mandates into vivid, often inventive frameworks. Schools are setting up student-run projects or mini business activities, enterprises requiring budgeting, negotiation, planning, budgeting, and teamwork, and genuine accountability for outcomes. Economics becomes tangible. Abstract science, meanwhile, is brought to life through what some educators describe as Science Cosplay, where students act out scientific ideas through movement and role-play and activities, making it memorable. Some schools run student council elections on student-designed digital platforms, simultaneously teaching leadership, responsibility, and teamwork. These are not extracurricular novelties. They are, increasingly, the curriculum itself.

The most persistent challenge is the educator, because a majority were trained within the very system, they are now being asked to dismantle. Moving educators from the "sage on the stage" to the "guide on the side" requires more than a single workshop. Pedagogical

mindsets do not evolve overnight. Teachers need continuous, structured support to master these new instructional methods. Realizing this transition demands genuine patience and long-term institutional commitment.

Resources present a separate difficulty. Not every school can build a robotics laboratory. But laboratory access, libraries, activity spaces, and learning resources, and maintained activity spaces can go a considerable distance. Nature-based learning, school gardens, and ordinary household materials are powerful tools when used with pedagogical intent. The constraint is rarely infrastructure alone. Assessment, too, must evolve. Evaluation methods that grade the process of problem-solving, collaboration, and critical reflection, alongside any final academic output, are harder to standardise. They are also far more honest about what education is trying to achieve.

The shift toward experiential learning represents a fundamental change in Indian education. Fundamentally, this approach mirrors natural cognitive development. Children learn best by relying on their innate curiosity. They test ideas, make errors, and reflect on the outcomes.

Educational institutions must also acknowledge the larger learning ecosystem. They should involve parents in the process as essential collaborators, and view co-curricular activities and counselling as essential structural needs rather than optional extras. The goal is obvious: education must completely abandon standardized metrics in favour of developing individual aptitude.

Looking toward a future dominated by artificial intelligence and automation, the unique human skills developed through experiential learning — empathy, adaptability, resilience, and original critical thought — will be a student's greatest asset.

The author is Principal-CBSE, Lancers Army Schools, Surat

Liberal-arts education matters more, not less, in the age of AI: Five reasons why



AMITABH MATTOO

EVEN AS universities across India seek to implement the National Education Policy, they are confronted with a deeper question: What should higher education look like in the age of Artificial Intelligence? Fortunately, the NEP's focus on multidisciplinary learning and intellectual flexibility is remarkably prescient. In a world being shaped by AI, the future will be shaped by societies that can think across disciplines, rather than simply excel within a single specialisation. It also revives the importance of liberal-arts education.

Over 25 years, in academic leadership, I have seen recurring waves of anxiety about the relevance of liberal-arts education. Successive eras of doubt about the importance of the liberal arts have been driven by the growing dominance of STEM subjects. Questions about humanities and social science degrees are often posed in terms of "worth" or return on investment; disciplines that are intellectually interesting but economically dispensable. The age of AI has finally exposed the poverty of that thinking.

Liberal-arts education is now — more than ever — India's key to the future. Here's why. First, while data may be the new marker of literacy, information alone is not enough. Yes, artificial intelligence can process massive amounts of data at speeds no human can match. Yes, AI can write essays, create computer programs, identify trends, and engage in convincing conversation. But at a time when AI is dangerously masquerading as truth, nothing can substitute judgement informed by history, ethics, culture and politics. The more sophisticated machines become, the more precious distinctly human capacities will grow.

The second reason to embrace liberal arts is that future problems will not come neatly labelled as History, Economics or Computer Science. Debates about the liberal arts versus STEM are based on a false binary. The biggest challenge facing India

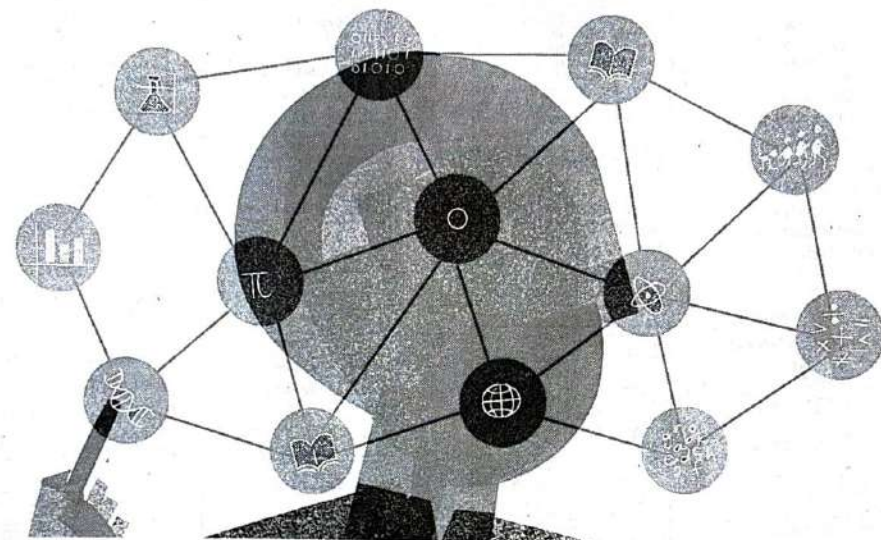


ILLUSTRATION: C R SASIKUMAR

is whether — and how well — it can do both. The best engineers will need the insights of History, Political Science and Ethics to solve the problems of the future. Good technologists will need social science to build humane technology. India needs economists who can speak knowledgeably about climate change and behavioural science. In the age of AI, disciplinary silos will hinder those who work within them. That's why the NEP's stress on multidisciplinary and holistic education is so welcome.

Third, liberal-arts degrees matter for democracy. Democracies need citizens who can think critically, engage in civil disagreement, and have some understanding of the past. When markets determine educational priorities, the social value of learning can easily be reduced to its immediate monetary value. History, Philosophy, Anthropology and Political Theory will always seem less important than degrees with easy job placements. But democracies that stop valuing these subjects will do so at their own peril. Universities are, after all, more than employment facilitation or placement centres.

When JNU was created more

than five decades ago, it was imagined almost as an intellectual republic. Students came from every corner of India and were introduced to new ideas that helped them see beyond the limits of their backgrounds and communities. The value of universities like JNU is not simply in what they research or publish; it is in the idea of a public space dedicated to knowledge for its own sake. Just as importantly, universities play an important role in nurturing democratic citizenship and values. To be sure, private universities have expanded access to education and brought change to India's higher education ecosystem. From Shiv Nadar to Ahmedabad University to Ashoka, several private institutions have pioneered serious investments in liberal-arts education and interdisciplinary programmes.

With India's vast population, we need both private and public universities. Yet there is also reason for caution. Once you let market forces alone dictate the purpose of a university, certain areas of study will naturally be privileged over others.

The fourth reason to care about liberal-arts education is resilience. Coding languages and technical skills change every few years. What

employers look for changes. What will not change — and what humans will always need — is the ability to think critically, communicate effectively, and relate to others. As AI takes over more of the world's blue-collar and white-collar jobs, human skills will need to become more human. Liberal-arts degrees are uniquely positioned to provide that education. At JNU's School of International Studies, we see it play out in real time as the field of International Relations is being reshaped by tech. Climate change, cybersecurity, big data and disinformation aren't just "topics" to be studied — they will define both opportunities and challenges for the next generation of global leaders. Which is why we must train students who are not only tech-savvy, but historically literate, ethically mindful, and globally literate.

The fifth reason is civilisational. India's own intellectual traditions never viewed knowledge as fragmented into isolated disciplines. There was no divide between Philosophy and Politics, Economics and Ethics, or even Literature and public service. Education was seen as a cohesive whole. India's strengths in the modern knowledge economy are tied to a return to this interdisciplinary approach. The NEP, in many ways, mirrors a growing recognition that Indian traditions of knowledge are no longer compartmentalised.

For decades now, I have had the privilege of learning from students across India and the world — whether at public universities in India's conflict areas or leading universities abroad. What I have learned from them is that higher education must do more than create workers. It must help us become better human beings.

India today has a historic opportunity. If implemented with care and seriousness, the NEP has the potential to help India educate a generation that is technologically literate and democratically mindful. That will make India not just a stronger knowledge economy but a stronger democracy, and improve the quality of life of all its inhabitants. For the ultimate challenge posed by AI is not technological, it is human. Machines may increasingly answer questions. Universities must still teach which questions are worth asking.

The writer is dean of the School of International Studies, JNU and professor of IR at the University of Melbourne

India's traditions never viewed knowledge as fragmented into isolated disciplines. Education was seen as a cohesive whole. India's strengths in the modern knowledge economy are tied to a return to this interdisciplinary approach

The battle against AI misinformation

India is working towards Viksit Bharat 2047 with the objective of achieving economic growth, and in order to emerge as a technology leader. One of the major areas that India is concentrating on is the Artificial Intelligence (AI) front. However, a question that needs a definite answer is: what will India's policy be with reference to rapidly developing AI tools? While India's aspiration to attain the status of a global AI hub is commendable, Indian policies regarding AI tools should not only be looked at through the lens of development and economic growth, but also through the lens of growing misinformation and identity manipulation that could be spread through AI platforms.

A new era

ChatGPT recently launched its latest AI multimodal image generation model which has been successful in generating text-heavy images that could rival the work of a professional. Modern generative AI systems are now capable of producing highly sophisticated, text-heavy images akin to a professional newspaper or a scientific research paper. In most cases, these outputs are almost indistinguishable from authentic images taken with the help of a camera, or scanned originals. This model can pull up data from the web portal and provide details of the image with near accurate information.

Thus, through this launch, AI image generation has entered a new era. It is no longer a simple recreational model for a user to dabble with and post on social media platforms to follow a trend; rather, it poses serious concerns in the domain of cyber-crime, theft and digital deceit.

Social networking platforms such as Facebook, Instagram and even LinkedIn are flooded with AI-generated content often leaving users wondering about the veracity of the information they consume. The current version of ChatGPT and similar platforms



Sundar Athreya H.

Assistant Professor at KIIT School of Law, KIIT Deemed to be University, Bhubaneswar



N.S. Amogh Simha

Advocate, Madras High Court and Founder of Ashwin & Amogh Law Chambers, Chennai

While the country seeks to establish itself as a global AI leader, it must develop a robust legal framework that would effectively address the issues of misinformation, identity misuse and manipulation

allow such content to be released disproportionately on social media platforms. Since such platforms are primarily accessed by users through their mobile phones, which have limited screen sizes, the ability to verify such content becomes difficult and users may readily accept AI-generated images posted on these platforms as real.

For instance, a post on LinkedIn about publishing a new research paper, along with the image of the first page of the paper which might contain all necessary details such as the name of the journal and author credentials, might just be fake and non-existent. However, this can be verified by other users only if they check the database; most users are unlikely to fact-check such information.

Educational institutions and genuine academic publishers who strive to maintain originality face challenges as AI systems can fabricate mark sheets, degree certificates and research papers. The persuasive effect of AI-generated content significantly amplifies the possibility of misinformation and manipulation, to the extent where genuine photographs, videos and documents themselves may be dismissed as fabricated thus bearing a large impact on academics, journalism, and institutional credibility.

Various implications

Cybercrimes related to identity thefts have also multiplied in the recent past.

Additionally, celebrities have filed petitions before various High Courts of India seeking protection of their personality rights, and protection against the unauthorised usage of their likeness in image, voice and name using AI. Although various individuals have filed such cases, India has yet to formulate a sound legislative response to this emerging challenge. The implications of AI-generated content also pose risks in terms of

evidence or pleadings that are submitted before courts using AI platforms. The Supreme Court and other High Courts, such as the Bombay High Court, have disparaged such usage and have also imposed costs on lawyers who adopt AI-generated arguments without verifying the submissions and cases cited therein.

Need for regulation

India therefore stands at a critical crossroads at present. While the country seeks to establish itself as a global AI leader, it must develop a robust legal framework that would effectively address the issues of misinformation, identity misuse and manipulation. The challenge at hand is to craft a balanced regulatory framework – one that encourages innovations and technological advancements while simultaneously ensuring accountability from platforms and safeguarding the authenticity of the digital ecosystem.

India's recently amended Information Technology Rules, 2026 mandate the disclosure of AI-generated/alter content throughout the video. They have also attempted to revamp the age-old intermediary liability framework with the stipulated timeline of three hours to remove synthetically generated content upon receiving a court order or government notification. They also mandate that personal complaints filed by users must be solved within 36 hours of its filing. This is a step in the right direction.

Further, there is a need to develop a code of ethics for AI platforms to prevent them from generating images/videos that would undermine trust in digital news. Beyond the quintessential legal and regulatory frameworks, there is a need for developing digital and AI literacy amongst the public at large. Unless users themselves develop the capacity to critically evaluate a particular digital content and verify the same before dissemination, these issues will continue to linger.

Building a governance framework for AI

The legal framework should have humans at the centre and trust, reliability and accountability as core goals

Should law enable and guide innovation or step in only to regulate and restrict once innovation has taken place? In the area of emerging technologies, law has often played catch-up. An underlying principle driving this approach has been that regulation should not limit innovation and should step in only once there is evidence of the risk that needs to be addressed.

In the rapidly growing area of Artificial Intelligence (AI), where applications are already being deployed across sectors, the regulatory pendulum seems to be oscillating between a consolidated framework such as the EU's AI Act; China's stack of topic-specific regulations on algorithms (recommendation, deep synthesis and generative AI); and the US light-touch permissive approach at the federal level, which also bars individual state regulations and emphasises the need for companies to be free to innovate without cumbersome regulation. There is, however, universal acknowledgement that AI development needs to generate trust and accountability.

India's AI governance guidelines announced in February 2026 adopt an approach of "innovation over restraint"

as one of its seven *sutras*. The guidelines suggest using existing regulatory frameworks while plugging gaps through amendments in the existing Information Technology Act, 2000. It also suggested the adoption of voluntary measures such as industry codes, technical standards and self-certification as methods for risk mitigation.

Since April, however, greater vigilance and perhaps a rethink of domestic legal strategy have been apparent, with the finance minister highlighting the potential risks from Mythos — a tool with autonomous AI capabilities that can detect, and potentially fix, serious flaws in cyber-systems. Anthropic, the US-based AI research company that developed it, has ruled out its public release, citing potential for risks with its large-scale release. As with any tool, Mythos could be a force for good in strengthening cyber-defence by detecting and fixing vulnerabilities or a force of evil in the hands of cyber-attackers. The government has held meetings with Anthropic and continues to engage with key stakeholders in India.

The restraint shown by Anthropic is laudable; acknowledging risks and having transparent conversations is a welcome step. But clearly, law cannot depend on enlightened self-interest and self-regulation. Corporate growth is primarily driven by the need for high stock valuations and managing investor expectations for returns.

For a country like India with digitisation imbedded in various aspects of the economy, be it banking, UPI, Aadhaar or Digilocker, risk management is as important as it is to encourage innovation. When AI operates in a regulated environment with sector-specific stewardship, it signals credibility for broader diffusion. A framework for algorithmic governance as

implemented in the medical device industry provides some insights, with regulation based on intended use, followed by post-market checks. Regulators, manufacturers and health care providers are required to check and report on the behaviour and evolution of AI-enabled devices. While algorithmic governance of medical devices is far more evolved in the EU and the US, the Central Drugs Standard Control Organisation (CDSCO) in India has started implementing this through the Medical Devices Rules, 2017.

A similar stratified risk approach could be considered across other key sectors such as autonomous air traffic control, autonomous robotic surgery and autonomous drones in warfare. The key determination would be how much to regulate: A chatbot providing customer service may not require a disclosure that it is not a natural person, while using AI for robotic surgery would need greater controls.

In either situation, legal accountability must always be on the person that is legally responsible. The strength of the



In India, where digitisation is imbedded in various aspects of the economy, risk management is as important as it is to encourage innovation. REUTERS

regulatory framework would lie in its ability to unambiguously map developer → deployer → user, so as to ensure that autonomy does not create an accountability vacuum. Based on the level of risk, autonomy must be declared and proved and always supported by mandatory human oversight, with a "kill switch" or human control if something goes wrong.

Another feature that needs to be built into the legal framework is the need for adaptive governance to keep pace with a fast-growing technology. Regulatory sandboxes, to shadow key decisions and review cycles as agents learn and adapt, can also provide and support the growth of technology with regulation.

To state the obvious, a domestic-level regulatory framework by itself cannot be sufficient to address a technology whose growth and impact are not limited by territorial boundaries. A shared global understanding of AI regulation and governance structure is key. Following a United Nations General Assembly resolution in 2024, countries globally considered establishing an independent scientific panel to work towards evidence-based assessments. That, however, has not

materialised. The first meeting of the UN-led Global Dialogue on AI Governance is scheduled for July 2026. It is primarily a forum for deliberations and possible coordination. The divergence between country positions may not yield a binding international law any time soon. But with technology growing at a rapid pace, it is important to have a coordinated approach at least on basic principles.

Innovation needs stability and certainty of governance structures. When AI is held accountable and risks are continuously managed, its use will be based on trust and reliability. That itself will be an impetus for greater adoption of responsible innovation.

For Aristotle, the soul of "mythos" was the event or design of a story, and the individual characters were merely incidental to it. Any AI tool, however, needs to have humans as its centre. That is the task for a clear legal framework.

RV Anuradha is Partner, Clarus Law Associates, New Delhi, and Mandira Shah is a Bengaluru-based consultant on digital transformation and data sciences. The views expressed are personal



RV
Anuradha



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P JOHN J KENNEDY

CBSE cannot afford to fail the test of public trust

INDIA'S EXAMINATION system rests on the assumption that the process is fair, even when outcomes disappoint. Remove that assumption, and the system loses its legitimacy. This year, the CBSE has come dangerously close to doing exactly that.

The Class XII results declared on May 13 sparked a controversy that went well beyond routine grievances. Thousands of students reported marks that were inconsistent with their preparation and school performance, particularly in Physics, Mathematics, and Accountancy. Large numbers of answer scripts had to be rescanned and manually reviewed. Teachers' organisations raised con-

cerns that examiners had received inadequate training on the new On-Screen Marking (OSM) system.

Then came the allegation that crystalised public anxiety. A student who accessed his Physics answer sheet claimed the handwriting was not his and the uploaded script belonged to someone else. This was resolved soon after, but it laid bare the inadequacy of the system and fragility of institutional trust.

At the centre of the storm is the OSM. The technology was presented as a reform that would standardise evaluation, improve efficiency, and reduce inconsistency. But digitising evaluation is not the same as reforming it. The answer scripts, the high-stakes nature of the examination and the opacity surrounding the assessment remained the same. Only the medium changed, and that change carried real costs. Evaluating long,

handwritten descriptive answers on a screen is not the same as reading them on paper. Examiners had to scroll through dense responses for hours under strict timelines. In subjects requiring interpretive and nuanced judgement, this arrangement can easily render evaluation mechanical, encouraging keyword-based marking over careful academic assessment. Technology can assist evaluation; it cannot replace the intellectual responsibility that fair assessment demands.

The institutional response has only deep-

The current controversy makes clear that technology has not removed subjectivity or error. It has merely shifted them into a different format

ened the problem. The CBSE initially downplayed irregularities before eventually acknowledging the need for rescanning in many cases. That IIT Madras was called in to assist in ensuring a "glitch-free re-evaluation process" only after the controversy escalated speaks volumes. It confirms that the CBSE was ill prepared to manage a crisis it had created. Not only were students aggrieved by their results, the very mechanism that should have offered them relief rubbed salt in the wound. Besides fixing re-evaluation glitches, ensuring fair and just evaluation in the first place needs to be the focus.

Equally troubling is the CBSE's assumption that digitisation would eliminate inconsistency in marking. It had already weakened the moderation mechanisms that once helped correct extreme variations between evaluators. The current controversy

makes clear that technology has not removed subjectivity or error. It has merely shifted them into a different format.

Meanwhile, the education minister has described the disruption as part of building a new system. But educational institutions cannot run experiments on students whose futures depend on these results.

The Supreme Court's remarks that the NTA has not learned its lessons from the NEET leaks apply equally to CBSE. When India's examination system places enormous pressure on students and its results shape careers and futures, it cannot afford this degree of uncertainty and opacity. The CBSE's crisis now is one of trust. Once that erodes, no technology can easily restore it.

The writer is a former professor and dean of a Bengaluru university

Not so NEET: Why normalised scores in computer tests might not work as in JEE



EXPERT EXPLAINS

RAJEEV KUMAR

FORMER PROFESSOR OF COMPUTER SCIENCE AT IIT KHARAGPUR, IIT KANPUR, BITS PILANI AND JNU

THE EXPECTED shift of the National Eligibility-cum-Entrance Test (NEET) from a single-session pen-and-paper (PnP) examination to multi-session computer-based testing (CBT) is primarily driven by controversies over paper leaks, answer sheet tampering, transportation vulnerabilities and operational failures. CBT is expected to reduce such risks through encrypted digital delivery and elimination of printed papers.

The NEET-PnP is conducted in a single session, with the same paper for all candidates. Students receive carbon copies of their optical mark recognition sheets, allowing independent verification of raw marks directly used for ranking. The system is thus transparent, verifiable, and based on a common benchmark.

Given India's IT infrastructure reportedly accommodates only about 1.2 lakh candidates per session, conducting NEET-CBT for nearly 24 lakh students may require around 20 sessions with different question papers. Since no two papers can be identical in difficulty, comparing raw marks directly is statistically unfair. Rankings, therefore, depend on normalised percentile scores derived through statistical methods. This raises concerns about precision, transparency, fairness, and verifiability, since no normalisation method can ever be error-free or universally accepted.

How does normalisation work?

The fundamental challenge in multi-

session CBT is to fairly compare candidates who attempt different question papers across sessions, presuming candidates appearing in relatively tougher sessions are likely to score lower raw marks than those in easier ones. To compensate for such variations, raw marks are statistically normalised so that candidates are not unfairly advantaged or disadvantaged by their allotted session. So, if all sessions have similar candidate populations and comparable difficulty distributions, normalised percentile scores should theoretically produce fair rankings.

The National Testing Agency will use the same normalisation methodology for NEET-CBT as in JEE (Main), though NEET would involve nearly double the candidate volume. A candidate's performance is assessed relative to other candidates in the same session using percentile scoring. A percentile score indicates the percentage of candidates scoring equal to or below a particular candidate. Thus, the topper of every session receives a percentile of 100 irrespective of raw marks, while percentile values at

lower scores vary depending on the number of candidates appearing in that session.

First, percentile scores are calculated for each subject and in the aggregate within every session. These are then placed on a common statistical scale to generate normalised scores — often reported to several decimal places to reduce ties — and final rankings across sessions.

Can normalisation distort ranking?

Candidates cannot independently verify precisely how normalisation across sessions was computed.

In NEET, where even a single mark can change ranks by thousands, tiny normalisation variations may significantly alter outcomes. The concern is not that normalisation is mathematically invalid, but that even small statistical adjustments can significantly alter rankings and admissions, creating distrust when normalised scores fall below actual raw marks.

NTA already uses normalisation in JEE (Main), where anomalies are evident. But its

impact is limited because about 2.5 lakh top candidates proceed to IIT-JEE (Advanced) for admission to 23 IITs and a few other institutions for a few tens of thousands of seats.

NEET is fundamentally different. Over 20 lakh candidates compete for limited medical seats, including a few hundred at top institutions such as AIIMS and JIPMER. Even fractional percentile differences or minor normalisation adjustments may significantly alter ranks and admissions, especially for candidates near critical cutoffs.

What about global digital exams?

Global digital examinations such as the Scholastic Assessment Test, Test of English as a Foreign Language, and Graduate Record Examination differ fundamentally from NEET and JEE. They are adaptive tests, where subsequent questions depend on responses to earlier ones — unlike NEET and JEE, where all candidates in a session receive the same question set.

Moreover, they are not single-criterion rank-based admission tests. They assess

aptitude, language proficiency, or academic readiness as only one component of broader admission processes.

What is the way forward?

Normalisation in NEET-CBT is the biggest challenge, given the scale and stakes. Question-difficulty balancing, session-equivalence testing, disclosure mechanisms, simulation studies, and independent technical oversight would become essential. Both raw and normalised scores should be disclosed to improve transparency.

The system would need to be transparent, verifiable, explainable and statistically robust. Yet possible ranking distortions are likely to generate distrust and controversy.

The larger question is whether an exam in which even a single mark determines life-altering outcomes should shift from verifiable raw-score merit towards statistically processed rankings. Before any transition, alternative models should be debated with academic experts rather than only high-powered panels.

A test of learning and retention

Karnataka has improved access to schools. It must convert enrolment gains into educational continuity

RAJESHWARI U R

Karnataka has long been seen as one of India's most forward-looking states, driven by its technology sector, strong urban economy, and expanding knowledge industries. The latest NITI Aayog report (2026) on school education, however, suggests that despite important gains in access and inclusion, the state now faces a more complex challenge: improving learning quality and ensuring that students remain in school through higher secondary education.

Over the past decade, Karnataka has performed strongly in expanding access to education for girls. The Gross Enrolment Ratio (GER) for girls at the secondary stage increased from 78.19 to 102, placing Karnataka among the better-performing states. States such as Bihar (54.8%), Uttar Pradesh (64.3%), and Madhya Pradesh (68.2%) continue to lag at the same level. This reflects sustained efforts to improve participation among adolescent girls and strengthen school access.

At the same time, the report points to challenges in retaining students beyond secondary education. Karnataka's secondary school dropout rate is 18.3%, which is among the higher levels reported across states. By comparison, Kerala has reduced its secondary dropout rate to 4.8%, while Jharkhand stands at 3.5% and Uttarakhand at 4.6%. Although Karnataka has improved over the decade, the figures suggest that many students still face barriers in continuing education after Class 10.

The transition from secondary to higher secondary education remains another important concern. Karnataka's transition rate stands at 62.5%, considerably lower than Kerala (90.2%), Punjab (90.7%), Goa (90.9%), and Rajasthan (88.2%). The report notes that financial pressures, social circumstances, and early entry into the workforce continue to affect student retention across many parts of India, particularly after the secondary stage.

The learning outcomes also indicate room for improvement. According to PARAKH 2024 competency assessment data, students in Karnataka achieved 60% of the expected language competencies and 57% of mathematics competencies at the foundational stage. While these figures remain close to the national average, states such as Punjab (82% in language and 78% in mathematics), Kerala (75% and 70%), and Himachal Pradesh (76% and 72%) performed significantly better. At the middle-school stage, Karnataka students achieved 51% competency in language, 33% in mathematics, and 37% in science, indicating that many students continue to face difficulties in conceptual under-

standing and application-based learning. The findings suggest that Karnataka's next phase of educational reform will need to place greater emphasis on strengthening foundational learning, classroom comprehension, and subject-level competencies.

Infrastructure indicators present a mixed but encouraging picture. Karnataka has achieved near-universal access to functional toilet facilities in schools, placing it alongside high-performing states such as Kerala, Haryana, and Goa. However, digital infrastructure expansion has moved more slowly than expected for a state known for its technology ecosystem. Teacher vacancies add pressure to the system. Karnataka currently reports 29,473 vacancies at the elementary level and 8,690 vacancies at the secondary level in government schools. The vacancies are substantial enough to affect classroom continuity and subject-specific teaching support.

Inclusive infrastructure remains an important concern. Across India, only 33.4% of schools currently have Children with Special Needs-friendly toilets, highlighting continuing gaps in accessibility. Karnataka's future reforms will therefore need to strengthen support systems for vulnerable and special-needs students through better counselling, community participation, and school-level monitoring to improve retention and student wellbeing.

From access to real outcomes

Despite these concerns, Karnataka emerges in the report as a state experimenting with reforms. The activity-based *Kalika Chetarike* initiative is recognised as a good practice model for post-pandemic learning recovery.

Karnataka has achieved much of the first-generation education agenda centred on enrolment and access. The next challenge is more demanding: improving learning outcomes, strengthening retention after Class 10, and ensuring students complete higher secondary education with meaningful skills. Addressing these issues will require targeted interventions.

Strengthening scholarship support, transport facilities, and hostel access could help reduce dropout rates. Accelerated teacher recruitment and subject-specific deployment are equally important, especially at the secondary stage. Expanding digital infrastructure beyond urban centres would strengthen learning opportunities.

Karnataka's education system reflects both progress and possibility. The state has shown that improvement in enrolment and inclusion is achievable. The challenge ahead is to convert that access into sustained learning, stronger retention, and higher educational outcomes. The state's response may not only shape its future workforce, but also provide important lessons for India's broader education transformation.

(The writer is an associate professor at the Department of Economics, Christ University)

Are Human+AI Cowritten Novels The Future?

The genie of AI-aided or even AI-authored books is out. A literature Nobel laureate uses AI for her ideas. Dire implications for original human creativity probably won't reverse this trend

Atanu Biswas



In 2016, a Japanese AI research team created short novel, *Koripyuta ga shosetsu iro kaku hi* (The Day a Computer Writes a Novel), nearly won the prestigious Nikkei Hoshi Shinichi Literary Award. Naturally, the judges were unaware of which entries were written by humans. Even though the story didn't receive any awards, this proved the fact that it's possible for AI to create logical and readable stories.

Then, in Sept 2020, a provocative op-ed headlined "A robot wrote this entire article. Are you scared yet, human?" appeared in *The Guardian*. It was written by OpenAI's GPT-3: "I am here to convince you not to worry. Artificial intelligence will not destroy humans. Believe me." However, humans had good reason to be scared, because the most precious human ability – creativity – was challenged.

Since then, AI development has become exponential. People are even wondering whether one day an AI-generated novel would get the Nobel Prize for literature. Although it still hasn't happened, something else shocked the literary world recently.

There were claims about AI usage by some of the winners of the 2026 Commonwealth Short Story Prize, especially the work of writer Jamir Nazir from Trinidad and Tobago. Some experts, critics, and internet sleuths found plenty of "obvious markers of AI writing" in the story, including a litany of "not x, but y" phrase constructions, which are by now a common trope.

Nazir's story was "100% AI generated," according to University of Pennsylvania professor Ethan Mollick. He compared the situation to a modern-day Turing Test. He cited an AI detector as proof.

In practice,

however, it's difficult to prove the use of AI with certainty. Furthermore, AI checkers are not infallible. They might provide probabilities and raise doubts, but can't confirm. Granta, the publisher that published the story, stated that "perhaps we will never know" who wrote the work that received the Commonwealth Prize.

Notably, the dispute here, essentially, is on whether AI was used, assuming that AI's help should not be taken for authoring a book. In contrast, 2018 literature Nobel Prize winner, Polish author Olga Tokarczuk, has drawn criticism and controversy after disclosing that she used AI to generate her ideas for her forthcoming novel. However, Tokarczuk used AI only to assist with writing her novel.

Certainly, this ignites far more significant issues than Nazir's story. Many experts believe that in the age of AI, a much bigger conversation about trust, originality, and the future of human creativity would be necessary. This, however, is not new. German photographer Boris Eldagsen caused quite a stir back in 2023, when he

declined his Sony World Photography Award after admitting that his winning picture was generated with AI technology.

Eldagsen wanted to see if competitions were prepared for AI-generated images. As he observed, they weren't.

However, human attitudes towards integrating AI into the creative process are still uneven. Author Rie Kudo's novel *Tokyo-to Dojo-to* (Sympathy Tower Tokyo) received Japan's most prestigious literary prize for new writers in 2024, although she acknowledged

the novel – the dialogue of an "AI-built" character – was produced by an AI chatbot.

In contrast, society frequently resists AI. Due to the use of AI in their cover designs, two novels by well-known authors Stephanie Johnson and Elizabeth Smith, were disqualified from being considered for the 2025 Ockham New Zealand Book Awards Prize for Fiction. In March, the *New York Times* cut ties with a freelance journalist, who admitted using AI to write a book review. Due to concerns that *Shy Girl*, a debut horror novel, was written at least partially using AI, publisher Hachette has removed the UK version, and cancelled the US release.

Given that practically everything is becoming automated in this AI era, wouldn't it become more challenging, and ultimately pointless, to resist the applications of AI? Is it possible for humans and AI to "co-create" instead?

After the 2023 dual Hollywood strikes by actors and screenwriters, Academy of Motion Picture Arts and Sciences has now made a "substantive" rule change: only acting "demonstrably performed by humans" and "human-authored" writing would be eligible to receive an Oscar. Notably, AI usage in 2024 and 2025 Oscar-nominated films concentrated on augmentation, rather than creation.

For instance, AI improved the actors' Hungarian accents in *The Brutalist*. The Academy has now stated that the uses of AI techniques outside of writing and acting "neither help nor harm the chances of achieving a nomination", but it didn't forbid its usage in films.

What is the perfect balance, then? Maybe nobody knows. Olga Tokarczuk stated, "I'm often deeply shocked by how it (AI) so fantastically broadens and deepens my creative thinking," despite the need to be cautious about hallucinations. In fact, Tokarczuk's endeavour may help establish a benchmark for future human-AI cooperation in this AI era. Despite her feeling "a poignant, very human sorrow for an era that is disappearing forever," Tokarczuk added that "perhaps a symbiotic future and cooperation with artificial intelligence will help" writers going forward.

Yet, even the near future of human-AI cooperation remains uncertain.

The writer is Professor, Indian Statistical Institute, Kolkata

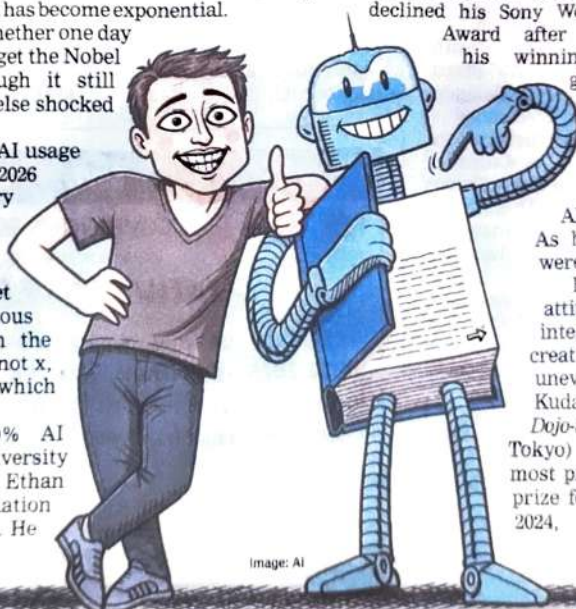


Image: AI

5% of

Beyond Degrees:

Why Basic Science and Literature Still Matter in the Future Economy



Prof. (Dr.) Samit Roy,
Founder Chancellor, Adamas University &
Chairman, RICE Group

As students move away from core subjects, educators warn that India risks weakening the very foundation required for innovation, research and emerging industries

career opportunities - it actually expands them. Students with deep conceptual understanding in subjects like Physics, Chemistry, Biology, Mathematics or Economics are often the ones who adapt fastest to new-age technologies and interdisciplinary industries.

Over the last three decades, almost every modern technological course introduced by universities - from Biotechnol-

A student studying Astrophysics or Space Technology, for instance, cannot succeed without strong understanding of Physics and Mathematics. Similarly, Biotechnology, Pharmacy and Vaccine Research require solid grounding in Chemistry and Bioscience.

The challenge is that students want shortcuts to employment without realizing that future industries still depend heavily on foundational academic disciplines.

New Industries Need Strong Basics

India today is one of the world's leading vaccine-producing nations. The pharmaceutical and

medicine, healthcare research and vaccine production are actively looking for skilled graduates with strong scientific fundamentals.

However, many colleges are unable to provide quality candidates because fewer students are choosing these subjects.

The same trend is visible in emerging sectors like renewable energy, space science, marine research and the blue economy. Students interested in solar energy, space tourism or environmental technology will require strong conceptual understanding of Physics and applied sciences.

Similarly, the blue economy - linked to oceans, marine eco-

in Bioscience and Environmental Science may find high-paying careers in India and abroad in the coming years.

Economics, Finance and Global Careers

Another major concern is the declining interest in Economics. Financial institutions, banks, stock markets and consulting firms continue to require professionals with strong economic and analytical understanding. Yet fewer students today are willing to pursue Economics as a core discipline.

This trend weakens not only student career opportunities but also India's future workforce preparedness.

Building the Foundation for the Future

Basic science and literature are not outdated subjects. They are the foundation upon which modern technology, research, innovation and professional specialization are built.

A student with strong fundamentals can later specialise in emerging areas and adapt to changing industries far more effectively than someone trained only in narrow technical skills.

India's future knowledge economy will not be built only on short-term professional courses. It will depend equally on students who understand science deeply, think critically, communicate effectively and possess strong academic foundations.

The need today is not to abandon basic subjects, but to rebuild confidence in them. Because in the long run, foundational learning remains one of the strongest pathways to innovation, employability and national progress.



ogy and Forensic Science to Data Analytics and Artificial Intelligence - has relied heavily on foundational scientific knowledge.

biotechnology sectors are expanding rapidly, creating huge demand for students trained in Chemistry, Bioscience and allied fields. Companies working in

systems, fisheries, shipping and marine pollution management - is expected to create significant employment opportunities globally. Students with backgrounds

The Misconception Around Employability

A strong foundation in basic science or literature does not limit

Education with Purpose

Why students are choosing value-driven higher education

In today's rapidly evolving world, students are no longer choosing colleges based solely on rankings, infrastructure or placement records. Increasingly, young learners are seeking institutions that offer something deeper - education with purpose, values and personal growth. As career aspirations expand beyond financial success, students are now looking for colleges that nurture character, emotional well-being, social responsibility and ethical leadership alongside academic excellence.

Beyond Degrees and Salaries

For decades, higher education was largely viewed as a pathway to secure jobs and stable incomes. While employability remains important, students today are increasingly aware that professional success alone does not guarantee fulfilment or long-term happiness.

The new generation is looking for institutions that align with their personal values, aspirations and sense of purpose.

They want education that encourages critical thinking, compassion, creativity and social awareness. Students are also becoming more conscious about issues such as sustainability, mental health, diversity and community impact.

This changing mindset is encouraging colleges to move beyond traditional academic structures and create holistic educational experiences that focus on human development as much as career preparation.



The Rise of Mentorship and Student Well-Being

One of the strongest reasons students are choosing value-driven institutions is the growing importance placed on emotional wellness and mentorship. Academic pressure, social expectations and uncertainty about future careers have made mental health support a crucial part of campus life.

Many colleges are now investing in counselling services, mentorship programmes and wellness initiatives that help students manage stress, build confidence and maintain emotional balance. Faculty members are increasingly encouraged to act not just as teachers, but as mentors who guide students personally and professionally.

Students value campuses where they feel supported, heard and respected. A nurturing educational environment often becomes a key factor in their decision-making process.

Class XII Results Out: Steering Towards a Smarter, Flexible Future in Higher Education



As students prepare to step into higher education under the transformative National Education Policy (NEP) 2020, they stand at critical crossroads. **Bidyut Majumdar, Deputy Director, JIS Group**, decodes the key shifts in the evolving education landscape and offers practical counsel on making informed choices in this new era of flexible, skill-oriented and multidisciplinary learning.

The results of the Class X and Class XII Board examinations have been declared. While a section of students will remain within the confines of Class XII, a significantly larger group is now poised to climb the immediate ladders of higher education. The dream remains the same: acquiring deeper knowledge, sharper skills, and ultimately, achieving prosperity and respect that lasts a lifetime. This pursuit drives years of study, research, and professional careers, demanding intense effort and fierce competition.

This year marks a significant milestone as it is the first batch of students navigating higher education under the framework of the National Education Policy (NEP) 2020. The Policy restructures school education into a 5+3+3+4 model, with a strong emphasis on technology integration across the curriculum. In the post-COVID era, students are already well-acquainted with digital and online learning. The new curriculum is markedly skill-oriented and student-centric, promoting personalised learning pathways that align with individual interests, aptitudes, and learning paces.

Unlike the traditional one-size-fits-all classroom approach, NEP encourages customised pedagogical methods that help students leverage their strengths while addressing their limitations, thereby enriching their overall learning experience.

Flexibility and Multidisciplinary Approach

The NEP 2020 also seeks to replace rigid institutional structures with greater flexibil-

ity in the curriculum. It aims to dismantle the harmful silos between academic streams, enabling students to pursue multidisciplinary studies. This allows learners to combine traditional disciplines with contemporary subjects and integrate vocational education seamlessly.

A key highlight is the multiple entry and exit system in higher education. Undergraduate students can now take academic breaks without losing progress and return later. Under this system, students can exit with a certificate after one year, a diploma after two years, and a regular or honours degree after three or four years.

The policy places universal access and inclusion at the core of the education system. It prioritises targeted financial support to bridge educational gaps for women, minorities, persons with disabilities, and other socio-economically disadvantaged groups.

In essence, NEP 2020 aims to prepare college and university students to emerge as competent professionals — whether in employment or research — ready to meet the demands of a rapidly evolving world.

Choosing Wisely: What to Take Care of

Yet, a large section of students and parents often lose their way at this critical juncture. For many, the means overtake the end. Without properly assessing their true interests or capabilities, they rush into popular subjects and colleges, only to regret their choices later.

This is why mental and emotional preparation must receive the highest priority. Students' genuine aspirations — nurtured carefully through their school years — deserve utmost respect. Nothing should be imposed

upon them against their will.

Students are urged to resist social hype and peer pressure. Subject and college selection must be guided by a realistic alignment between their personal strengths, interests, and long-term goals.

Beyond Conventional Choices

The belief that everyone is pursuing engineering or medicine, so "I don't need to" is as flawed as the notion that "everyone is doing it, so I must too." There are numerous emerging and exciting fields beyond these traditional streams — biotechnology, microbiology, genetics, and others.

NEP 2020 promotes flexible, skill-based education, encouraging students to choose careers aligned with interests, abilities and future industry demands.

Careers in Artificial Intelligence, Machine Learning, Robotics, Electronics, Telecommunications, Mechanical, and Mechatronics demand strong proficiency in mathematics and data interpretation. Similarly, pursuing medicine requires not just academic excellence but also patience, a professional attitude, and strong teamwork skills.

The field of law has also become remarkably diverse. Apart from general legal practice, there is rising demand for expertise in corporate law, criminal law, cyber law, and startup regulations — a trend expected

to grow further. Students from any academic background can pursue legal education, which offers a wide array of opportunities.

In the Humanities stream, promising careers are emerging in corporate psychology and clinical psychology, both of which are witnessing increased demand.

With the explosion of information technology, computer science, and the internet, the need for skilled content developers is surging. Literature students, in particular, have immense opportunities here. However, content development extends far beyond writing — it involves compelling storytelling and the ability to engage audiences meaningfully, creating a lasting connection between

creator and viewer.

Selecting the Right College

When choosing colleges, students and parents should look beyond mere reputation. Infrastructure, green campuses, laboratories, workshops, NSS units, various clubs, gymnasiums, yoga facilities, placement grooming cells, and language laboratories are all important considerations.

Equally crucial is the institution's NAAC accreditation and NIRF ranking. These four years of college life are immensely significant — they shape the trajectory of a student's future. A thoughtful, well-informed choice at this stage can make all the difference.



AUTHOR



PARANTAP BASU

India's SKILLS JOBS Mismatch Dilemma

INDIA'S LABOUR MARKET IS EXPOSING A GROWING MISMATCH BETWEEN UNIVERSITY DEGREES, EMPLOYABLE SKILLS AND THE JOBS AVAILABLE TO YOUNG GRADUATES

In the late nineteenth-century fiction of Bankim Chandra Chattopadhyay, Muchiram Gier Jibon-churrit, Muchiram tries his luck at securing a job in the British Collectorate. Many learned Bengalis, fluent in English, had also applied for the same post. Yet the Colonial Sahib dismissed all of them saying, "It is not the learned man who is fitted for this job, so you can go, babu." Muchiram got the job because the job of receiving petitions from peasants in the courtroom or collecting land revenue did not require a highly educated person.

This story comes to mind when one thinks about the current state of India's labour market. According to the Economic Survey 2024-25, only 8.25 per cent of Indian graduates are employed in "high competency" skilled occupations classified as matching their graduate-level skills, while more than half are in elementary or semi-skilled jobs, indicating working below their potential. In many cases, young people fail to get jobs because they are overeducated for the available work. When they do find employment, in many cases their university education proves to be of little practical use. Each year, millions of graduates and post-graduates enter India's labour market, but the creation of suitable graduate-level employment has not kept pace with the workforce supply.

The question is: why are our youngsters unable to put their university education to use in the labour market? I am not speaking here of technical education, although the same problem of skill mismatch exists there as well. My focus is on general undergraduate and postgraduate education.

EMERGING ISSUES

Is the problem one of labour demand or labour supply? From the demand side, employers are seeking workers who have the skills to perform the job. From the supply side, many argue that university education is excessively theoretical. Students do not acquire marketable skills. As a result, they are unable to present themselves effectively in the labour market. Therefore, the university curriculum needs radical reforms. For example, instead of overloading the curricula with teaching Milton, Byron, or Rabindranath in literature courses, universities should introduce core courses on how to write feature articles. In mathematics and economics departments, students should be trained to handle big data. At the same time, courses should be introduced to prepare students to work with artificial

intelligence. Many universities in India and abroad are already moving along these lines.

MARKET-ORIENTED EDUCATION

Although there is a growing trend for market-oriented education, there is a problem with this line of thinking. Once a syllabus begins to move in a market-oriented direction, it may become difficult to arrest that flow. Many university teachers may not have the experience or even the inclination to provide this kind of practical training. A distinguished professor of English may teach Tennyson's poetry with dedication and passion, but may not feel the same enthusiasm for teaching students how to write popular journalistic articles.

INDIA RISKS CONTINUING TO PRODUCE DEGREES WITHOUT DIRECTION AND ASPIRATIONS WITHOUT OPPORTUNITY

Thus, the problem of skill match in the labour market remains unresolved. An employer has the responsibility to find the right match of workers for the job in his business. By interviewing a university graduate, a perceptive manager should be able to understand how her/his talents should be used. A philosophy graduate with leadership potential may be trained and appointed as a junior manager at a modest salary, perhaps eliminating the need to hire an expensive MBA graduate. At the same time, job seekers on the supply side must also take responsibility. They need to shape their resumes in line with labour market demands. An English graduate seeking a journalism job will attract more attention by highlighting her/his published fea-

ture articles rather than essays on Shakespeare. Muchiram understood this though nearly illiterate, he instructed the person writing his job application not to use correct and polished English.

QUALITY OF EDUCATION AND SIGNALLING

Let us now turn to the quality of higher education. Universities today face increasing pressure to expand enrolment. Apart from a few well-known institutions, many universities have fallen prey to this tendency. Grade inflation is another growing concern. As a result, marks and degrees no longer reliably signal quality, making it difficult for employers to distinguish between candidates. This is a slippery slope. As academic standards decline for universities, the demand for their graduates will weaken, eventually eroding the credibility of these institutions in the labour market.

BREAKDOWN OF THE LABOUR MARKET

One of the central principles of economics is that market equilibrium emerges from the interaction of demand and supply. This principle works remarkably well when markets function efficiently. However, in recent years, the labour market has not operated according to this rhythm. Industries seek skills that universities are often unable to provide. Yet, if a proper match between skills and jobs were achieved, young people's earnings could have risen substantially.

Then, why are our youngsters not acquiring the right skills on their own? Why do they continue to pursue degrees that may not help them in the labour market? In a research paper co-authored with Amruth Banerjee and Elisa Keller, we showed that acquiring such marketable skills involves both high cost and uncertainty. After investing significant effort in learning a specific skill, one may discover that demand for it



has already vanished. That may be a reason why students continue to pursue a general line of education.

AI AND STRUCTURAL CHANGE

The problem has compounded with the advent of AI, which is beginning to automate many repetitive jobs. At the same time, many public and private universities have been established. According to the Press Information Bureau, the number of universities in India rose from 760 in 2014-15 to 1,338 as of June 2025. In such a situation, government intervention is necessary to regulate this vast university system. After consulting experts, the government could determine which universities should become centres of research and excellence, and

where practical and vocational education should be introduced.

It is worth noting that in countries such as Germany and the Netherlands, with stronger vocational pathways and closer links between education and employers, skill mismatch is managed more effectively than in India, though mismatch occurs even there. Governments in these countries regulate the quality of educational institutions through public funding, accreditation, institutional differentiation, and strong vocational pathways. India may also need this kind of regulatory

intervention. The government can also establish training centres where job seekers can learn new technologies.

SHOULD UNIVERSITY EDUCATION BE LIMITED TO A SYLLABUS?

I recall my days at Presidency College, where my teachers often went beyond the syllabus. A macroeconomics teacher would discuss topics not directly relevant to the undergraduate curriculum. Initially, this baffled me. The top student in the class engaged actively with the teacher, while others struggled to follow. In retrospect, this experience proved invaluable. By the time I reached postgraduate studies, many of the concepts were already familiar. What had seemed irrelevant earlier became foundational.

This experience demonstrates that university education should not be confined to a rigid syllabus. Students should be exposed to a wider intellectual horizon that fosters curiosity and creative thinking.

LIMITS OF MARKET-RELEVANT EDUCATION

Universities are not merely skill factories. They are centres of imagination, critical thinking, and intellectual culture. These attributes may not translate immediately into job descriptions required by an employer, but they matter profoundly in the long run. A literature student may not "use" Milton directly in the workplace, but learns interpretation, communication, and sensitivity to language. A philosophy student learns clarity of thought and ethical reasoning. These are not

narrow skills—they are enduring intellectual assets.

SKILLS AND TRAINABILITY

Employers often demand "skills," but what they truly need is trainability. This is the ability to learn and adapt. In a rapidly changing labour market, specific technical skills can quickly become obsolete. What matters more is the capacity to acquire new skills. Learning is not necessarily an individual process alone. A workplace can be turned into a space of shared collaborative learning. Fierce competition in the workplace could often thwart such shared cooperative learning. However, developing empathy for colleagues, mentoring junior staff members, and interpersonal communication skills can mitigate the harsh competition in the workplace and make colleagues realise that the workplace is not a place of a "zero-sum game" where one worker's success is another's failure.

EMPLOYER RESPONSIBILITY

Employers, too, have a role to play. Many firms demand "job-ready" graduates but invest little in training. They expect universities to bear the entire burden of skill formation. It may be rewarding for employers to invest in apprenticeships, internships, and on-the-job training. Partnerships with universities can bridge the gap between theory and practice. Short internships, data literacy workshops, and structured mentoring programmes can help align education with employment. This would benefit the employers in terms of better skill-match which could boost their productivity and profit.

REGIONAL INEQUALITY

India's labour market is highly heterogeneous. There is a sharp rural-urban divide. A graduate in Bengaluru, Pune, or Hyderabad has very different opportunities compared to one in a small town in Bihar, Odisha, MP or West Bengal. Many capable graduates in rural areas may lack networks, English fluency, or the mobility required to access urban job markets. Also, rural labour markets are narrow and undiversified. Most job opportunities are concentrated on agriculture, low-skilled services, informal work and government schemes (e.g. MGNREGS). Someone with a graduate degree may find it difficult to get a job locally. The cost of migration to cities, both economic and social, can be substantial which may impair social mobility. In a research article with Joseph Getachew, we have discussed how such adjustment costs of mobility contribute to persistent inequality.

LESSONS FROM MUCHIRAM

What does Muchiram teach us in today's rapidly changing labour market? Not that education is irrelevant, but that the key lies in aligning skills with the tasks at hand. For this, our youngsters must keep the windows of their minds open. Universities, employers, and policymakers must recognise their shared responsibility. Without that, India risks continuing to produce degrees without direction and aspirations without opportunity.

