ASSOCIATION OF INDIAN UNIVERSITIES

AIU INFORMATION RESOURCE CENTRE IN HIGHER EDUCATION

PRESS CLIPPINGS IN EDUCATION

01-31 DECEMBER, 2024

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BOARDING UNBOUND

Residential schools offer academic excellence, discipline, and independence, equipping students with skills for a globalised world

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The country's education system offers a wide array of options, and residential schools have long been a traditional favourite for generations of Indian families. Many renowned schools across Tamil Nadu are now offering boarding facilities, making them more accessible to a wider range of students. No longer reserved solely for the elite, these schools are attracting students from diverse backgrounds, offering both academic and personal growth opportunities in a supportive environment.

"These schools provide a rich cultural experience by bringing together students from various regions, cultures, and backgrounds. The opportunity to interact with peers from different parts of the country – and sometimes from abroad – helps students develop social skills, tolerance, and global perspectives. There's a spirit of inclusivity and mutual respect, which prepares students for a globalised world," says Siddharth Jyothish, an alumnus of a well-regarded residential school.

Let's take a closer look at what makes residential schools so special and why they remain a preferred choice for many.

MODERN APPEAL

Students and parents are increasingly seeking environments where academic growth can flourish without the distractions of long commutes or the demands of city life. Residential schools across Tamil Nadu provide an ideal setting for students to focus on their studies, while also engaging in extracurricular activities that promote all-around development. Without the need for daily travel, students save valuable time, allowing them to fully immerse themselves in academic and co-curricular pursuits.

> I SEE MY SIBLING'S CHILDREN COMMUTING THROUGH THE CITY TRAFFIC FROM THEIR HOME TO SCHOOL. THEY HAVE TO LEAVE EARLY JUST TO REACH SCHOOL ON TIME. SO MUCH OF THEIR DAY IS SPENT GETTING READY AND TRAVELLING. THERE'S SO MUCH POLLUTION, AND THE KIDS ARE EXPOSED TO IT

Anjana S Prasad, now settled in the US, shares, "I see my sibling's children commuting through the city traffic from their home to school. They have to leave early just to reach school on time. So much of their day is spent getting ready and travelling. There's so much pollution, and the kids are exposed to it. It's tiring and unhealthy."

She adds that her parents chose to send her to a boarding school in Tamil Nadu because they wanted her to grow up in a healthier, more global environment.

STATE-OF-THE-ART FACILITIES

Most residential schools offer world-class facilities that cater to the diverse needs of their students. These institutions have evolved significantly, providing a balanced mix of academics and extracurricular activities that support overall development of children.

Academic Excellence: Residential schools in Tamil Nadu boast a strong track record of achieving commendable academic results. These institutions provide a conducive environment for intellectual growth, thanks to a high student-teacher ratio, personalised attention, and a focus on excellence. The absence of distractions from home and long commutes helps students dedicate themselves to their studies.

Global Exposure: Many schools now offer international curricula, including the International Baccalaureate (IB) and Cambridge IGCSE, preparing students for global education. Exchange programmes, workshops, and collaborations with international institutions also ensure that students gain valuable global exposure early in their academic journeys.

Latest Infrastructure: Residential schools often feature impressive campuses, including well-equipped classrooms, libraries, and science laboratories. Most schools embrace modern teaching methods and incorporate the latest technologies to enhance the learning experience. A favourable student-teacher ratio also ensures that students receive personalised attention.

Sports and Recreation: Extracurricular activities are central to the development of well-rounded individuals. Residential schools offer access to a wide range of sports, including cricket, football, tennis, swimming, chess, and more. Students can also explore activities like rock climbing, trekking, and horse riding, helping them stay physically active while developing discipline and teamwork.

Art and Culture: With dedicated spaces for music, dance, drama, and visual arts, these schools encourage students to cultivate their creative talents. Whether in music rooms or art studios, the facilities offer opportunities to balance academic pursuits with artistic expression.

Health and Wellness: Emphasising physical well-being, these schools offer nutritious meals and offer access to health facilities. Many institutions have partnerships with local hospitals, providing medical support whenever needed, so that students' health is never compromised.

Discipline and Independence: A significant advantage of boarding schools is the opportunity for students to develop discipline and independence. Students learn to manage their time effectively, adhere to routines, and take responsibility for their personal care. This autonomy fosters resilience, responsibility, and the skills necessary to thrive in adulthood.

Safety and Security: Safety is a top priority in boarding schools. Most institutions are gated, with security personnel ensuring 24/7 supervision. Modern surveillance systems, safety protocols, and secure campus environments ensure parents that their children are safe and well-protected.

For busy parents, the structured environment of boarding schools provides peace of mind. They know their children are not only safe but also learning to navigate life's challenges without constant supervision.

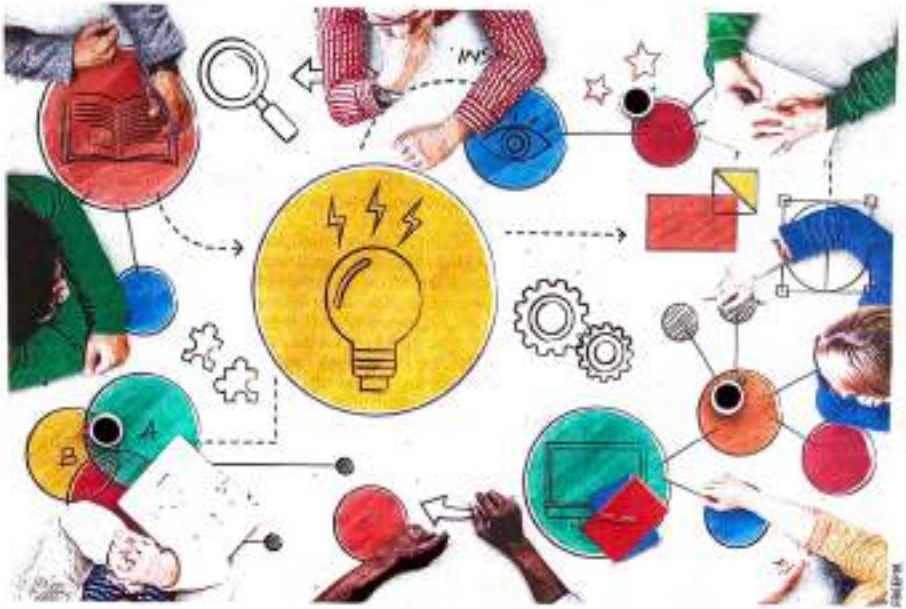
> PARENTS ARE BECOMING MORE AWARE OF THE NEED TO PROVIDE A BALANCED EDUCATION—ONE THAT NURTURES NOT ONLY ACADEMIC ABILITIES BUT ALSO LIFE SKILLS, EMOTIONAL INTELLIGENCE, RESILIENCE, AND LEADERSHIP

BALANCED EDUCATION

"Parents are becoming more aware of the need to provide a balanced education—one that nurtures not only academic abilities but also life skills, emotional intelligence, resilience, and leadership. At residential schools, parents aren't involved in their child's day-to-day activities, allowing children to grow as individuals. This independence helps them manage their own affairs, become self-reliant, and develop the confidence to overcome the challenges of life," says advocate S Chitra, whose son attended a prominent boarding school.

As educational needs continue to evolve, boarding schools in Tamil Nadu have adapted, blending tradition and modernity to offer a well-rounded education. These institutions not only prepare students for academic success but also for a fulfilling, globalised future.

A. Joseph Dorairaj



Cross those borders

Academicians should move beyond their silos and promote the crossing of disciplinary boundaries to make the pursuit of knowledge innovative and holistic

Complex issues and phenomena such as global warming and climate change, poverty, migration and displacement cannot be addressed by a single discipline. They need to be studied from an interdisciplinary or multidisciplinary perspective so that we can grapple with them comprehensively and meaningfully. Global warming and climate change, for instance, need to be addressed by experts drawn from different disciplines such as Glaciology, Hydrology, Oceanography, Geology, Geography, Geoinformatics, and Engineering and Technology. Similarly, migration and displacement need to be discussed by experts from Political Science, Geopolitics, Economics, Sociology, Ecology, Human Rights, and Literature.

Unfortunately, academia is subtly biased in favour of "academic tribes and territories" (Becher and Trowler 2001). Against this backdrop, we need to highlight the ongoing debate between 'generalists' and 'specialists'. While the generalists, even as they are grounded in their respective disciplines, strive to strike a conversation with their counterparts in other departments to promote interdisciplinary thinking and collaboration, the specialists prefer to confine themselves to their respective areas and guard their territory. Disciplinary boundary crossing is an anathema to them.

In *Academic Tribes and Territories*, Becher and Trowler address the issue and point out that "the tribes of academe ... define their own identities and defend their own patches of intellectual ground by employing a variety of devices geared to the exclusion of illegal immigrants." But academicians should shed their silos syndrome as a fragmented and piecemeal approach to the pursuit of knowledge will not produce tangible results.

Subtle differences

At this juncture, we need clarity about what exactly is meant by interdisciplinarity and the reasons to embrace it. We also need to distinguish it from its cognate: multidisciplinarity. There are subtle but crucial differences between the two. Both call for the presence of various disciplines but the level of integration between them is differential. While the integration of different disciplines is quite high in interdisciplinary programmes and projects, it is limited in the case of multidisciplinary endeavours. The former aims at amalgamation and synthesis of ideas and theories and the latter is rather reluctant to shed its disciplinary character. In short, while interdisciplinarity insists on integration of ideas, multidisciplinarity focuses on juxtaposition with limited space for integration. In *Interdisciplinarity: History, Theory and Practice*, Klein points out that the coming together of different disciplines in multidisciplinary endeavours is "essentially additive, not integrative".

Why are academicians reluctant to undertake interdisciplinary projects? There are five major reasons. First, the epistemological clash, sometimes incompatible, between different disciplinary perspectives is a hurdle and a challenge. Second, getting to know a new discipline involves time and energy, and many prefer to expend their energies in their own disciplines and territories where they already have a foothold. Third, there is hardly any incentive for undertaking innovative interdisciplinary projects. Fourth, when it comes to research projects and publications, editors are inclined towards papers in conventional disciplines. As a result, interdisciplinary projects get sidelined. Finally, interpersonal issues crop up while undertaking interdisciplinary projects with issues relating to seniority and ownership of the project occasionally rearing their heads.

Fostering interdisciplinarity

What should be done to shed academic tribalism and foster interdisciplinarity? First, higher educational institutions should, under the Choice-Based Credit System, offer interdisciplinary courses in domains such as AI, Nanotechnology, and Digital Humanities. Teaching pedagogy too could be interdisciplinary. A course like Philosophy and Literature could be co-taught by faculty from the two departments. Second, allied departments could come together and organise interdisciplinary seminars and conferences. For instance, Chemistry and Life Sciences could come together and explore common topics such as enzyme catalysis, kinetics, energy and metabolism. English and Political Science could organise a conference on a topic like language and ideology. Language departments such as Tamil, Hindi, French, and English can pool their resources and explore themes in comparative literature and translation. Third, research scholars and postgraduate students should be motivated to explore interdisciplinary topics for their projects. Finally, border-crossing leading to inter-departmental networking. So interdisciplinary collaboration should be recognised and incentivised.

Academic tribalism breeds a culture of hierarchy, insularity and traditionalism. Therefore, academia should ensure that the curriculum is innovative, interdisciplinary and holistic and encourage and help shape our students into multifaceted individuals.

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Research security should be a national priority

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As India aims to achieve its development objectives by 2047, the government has laid an emphasis on the role of science and technology in strategic and emerging sectors. Investment in cutting-edge technologies is essential to stay globally competitive, address societal challenges and unlock economic opportunities. Like in many nations, India is building an innovation ecosystem to harness the transformative power of these technologies. However, along with this intensification of research and development (R&D) arises a new challenge – research security.

While collaboration and the free exchange of knowledge are fundamental to scientific progress, there are new risks in the rapidly evolving geopolitical landscape. Foreign interference, intellectual property theft, insider threats, cyberattacks, and unauthorised access to sensitive information are concerns for countries investing in advanced technologies. If left unaddressed, they could undermine India's progress in strategic sectors. Research security, in this context, refers to safeguarding scientific research from threats to confidentiality, economic value, or national interest. India is ramping up investments in strategic technologies which include space, defence, semiconductors, nuclear technology, cybersecurity, biotechnology, clean energy, artificial intelligence, and quantum technology. So, ensuring strategic research outputs remain protected is critical. Any breach of security could compromise national interests, delay technological advancements, and expose sensitive data to exploitation by foreign actors.

Policymakers must focus on strengthening research security as a part of India's broader science and technology strategy. This involves a concerted effort to protect sensitive data, intellectual property, research infrastructure, and personnel. Preventing espionage, sabotage, and adversarial foreign influence are essential to safeguard India's R&D investment.

The global landscape, China factor

The issue of research security is not far-fetched, as there have been several cases of research security breaches around the world with serious consequences.

In a famous case, a senior professor at Harvard University and his two Chinese students were arrested for not-disclosing their links to Chinese funding, while also receiving funding from the U.S. Department of Defense. In another case, COVID-19 vaccine research facilities were subject to cyber attacks in 2020 to steal sensitive vaccine research and development data. The European Space Agency (ESA) has also suffered several cyberattacks to sabotage or steal sensitive information, prompting ESA to develop a partnership with the European Defence Agency on cybersecurity.

Policymakers must focus on strengthening research security as a part of the broader science and technology strategy in India

Such incidents have prompted several countries to develop policies and guidelines to strengthen research security. The US CHIPS and Science Act has several provisions on research security, which are complemented by other guidelines; these include the research security framework of the National Institute of Standards and Technology. Canada has come up with National Security Guidelines for Research Partnerships and a Policy on Sensitive Technology Research and Affiliations of Concern, along with a list of sensitive technologies.

Moreover, the country has identified research institutions – primarily from China, Iran, and Russia – with which collaborations should be avoided. The European Council's recommendation is taking a different approach based on the principles of self-governance by the sector, a risk-based and proportionate response, and country-agnostic regulations. It underlines the need to establish a centre of expertise on research security and highlights research security-related guidelines for Horizon Europe, the primary research funding programme of the EU. Several of these initiatives are partially driven as responses to the military-civil fusion strategy of the Chinese Communist Party, which promotes the use of dual-use technology, technology transfer, funding and foreign collaborations; there is a close nexus between China's defence industry, universities and research institutions to develop and share strategic research and technologies between the civilian and military sectors.

Promoting research security in India

Unfortunately, the concept of research security has received little attention in academic circles and government policymaking, leading to vulnerabilities that adversarial actors could exploit. The first step would be to systematically map the security vulnerabilities in our research ecosystem. This would involve understanding the nature of foreign influence in our universities, assessing the vulnerabilities of key research labs and sensitive research infrastructure, analysing foreign collaborations and funding in strategic technologies, and reviewing the personnel hiring and access control practices to comprehend possible insider threats in the crucial research facilities. For this, government agencies and research institutions need to deliberate on possible steps to make strategic research more secure while avoiding over-regulation. Further, engagement with trusted international partners could be explored for the initial capacity building and awareness-raising in this area.

Concrete steps would require security and intelligence agencies to engage with researchers and develop an understanding of the sensitive research areas. This would also necessitate the classification of research in different categories based on strategic value, possible economic impact and the national security implications. Thus, a research security framework could be developed providing research security guidelines. Here, a risk-based and proportionate response approach similar to the one recommended by the European Council could be considered as it seeks to avoid over-regulation while reducing security risks. There would be a requirement to develop a research security surveillance mechanism to keep tabs on emerging risks.

Observe these cautions

There are several in-principle and practical challenges for research security. For instance, science is inherently international and collaborative in nature and international collaborations are crucial drivers of scientific progress. Research security seeks to restrict certain funding and collaborations, which would be opposed by researchers for infringing on academic freedom and hindering scientific progress. Similarly, research security would also have to find a balance with open science, which includes sharing of research infrastructure, open data, and involving the general public in the scientific research via citizen science. Rightfully, open science is promoted by governments, funding agencies, science academies, and individual researchers.

Another major challenge would be the additional administrative and regulatory burden that research security would bring to research institutions and individual researchers, already strangled by the overly bureaucratic nature of our institutions and funding agencies. It is crucial that research security is implemented in close collaboration with the technical experts rather than security and intelligence agencies making decisions without full understanding of the matter. It is important that research security should not become an instrument of political interference in academic institutions.

Research security would require significant funding, effective communication, engagement, and capacity building to create a cadre of professionals who could design, develop, implement and lead research security efforts in India. A dedicated office similar to one at the U.S. National Science Foundation could be created for research security in the newly established Anusandhan National Research Foundation (ANRF). Such an office could become a focal point for coordinating and synergising efforts for research security among security agencies and academic institutions. Finally, researchers should be engaged at all levels of decision-making to find the right balance of security issues with open science, regulatory burden and scientific progress. Here, the spirit of 'as open as possible and as closed as necessary' could help guide decision-making.

In 8 IITs and 7 IIMs, over 80% faculty are from General Category

In IIT Mumbai and IIT Kharagpur, 90% of the over 700 faculty positions are held by people belonging to the General Category

DATA POINT

The Hindu Data Team

In at least two Indian Institutes of Technology (IITs) and three Indian Institutes of Management (IIMs), the share of faculty belonging to the General Category exceeds the 90% mark. In six other IITs and four other IIMs, the share is 80-90%. These conclusions are based on Right to Information (RTI) replies received from these institutions individually on various days in September 2024.

The Centre mandates reservation of 27% in faculty positions for candidates of Other Backward Classes (OBC), 15% for those belonging to Scheduled Castes (SC), and 7.5% for those belonging to Scheduled Tribes (ST) in both the IITs and IIMs as a part of its policy which covers nearly all Central educational institutions.

In IIM Indore, 106 of the 109 posts (97.2%) are held by faculty belonging to the General Category. There are no faculty belonging to the SC or ST reserved categories in IIM Indore, according to the RTI reply received on September 20. In IIM Udaipur, more than 90% of the faculty belong to the General Category. In IIM Lucknow, 95% of the faculty belong to the General Category. In six of the IIMs analysed, there is no faculty member who belongs to the ST category. In IIM Bangalore, where there were protests demanding proper implementation of reservations in faculty recruitment, over 85% of the faculty belong to the General Category.

In IIT Mumbai and IIT Kharagpur, 90% of the over 700 faculty positions are held by people from the General Category. In the Mandi, Gandhinagar, Kanpur, Guwahati, and Delhi IITs, 80-90% of the faculty belong to the General Category.

Overall, in the 13 IIMs for which relevant data could be ascertained through RTI requests, 82.8% of faculty members are from the General category, 5% from the SC category, 1% from the ST category, 9.6% from the OBCs and the rest split across Economically Weaker Sections (EWS) and the quota for the physically challenged. **Chart 1** shows the category-wise share of faculty members in select IIMs which shared data.

Overall, in the 21 IITs for which data were shared, 80% faculty are from the General Category, 6% from the SC category, 1.6% from the ST category, 11.2% from the OBC category, and the rest split across the EWS and the quota for the physically challenged. **Chart 2** shows the category-wise share of faculty in select IITs which shared data.

While the overall figures show a smaller share than what is mandated, not all IITs and IIMs are the same. In IIT Patna, for instance, 38% of the faculty are OBC, followed by 22% who are SCs, and 13% who are STs; 12% are from the General Category. In the IITs in Bhilai and Indore too, around 50% of the faculty are from the General Category.

Similarly, among the IIMs, 51% of the faculty in IIM Jammu are from the General Category, 19% are SC, 5% are ST, 23% are OBC and 2% belong to the EWS category.

For the RTI requests, only some IITs and IIMs had given the sanctioned strength and vacancy across various posts. Among the seven IIMs which had shared vacancy data, 256 vacancies were listed. Of those, 88 were for the OBC category, the highest among all categories, followed by 54 from SCs. There were 30 unfilled posts among STs too.

Among the 11 IITs which had shared vacancy data, 1,557 vacancies were listed. Of those 415 were for the OBC category and 234 were for the SCs. There were 129 unfilled posts among STs too.

The RTI requests were filed by Gowd Kiran Kumar, national president of the All India OBC Students Association

On the margins

The data for the charts were sourced from Right to Information reports

Chart 1: The chart shows the break up of faculty by social groups (in %) in IIMs

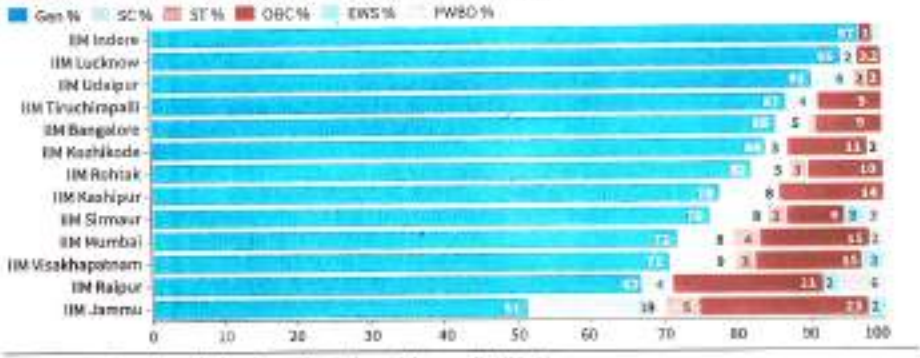
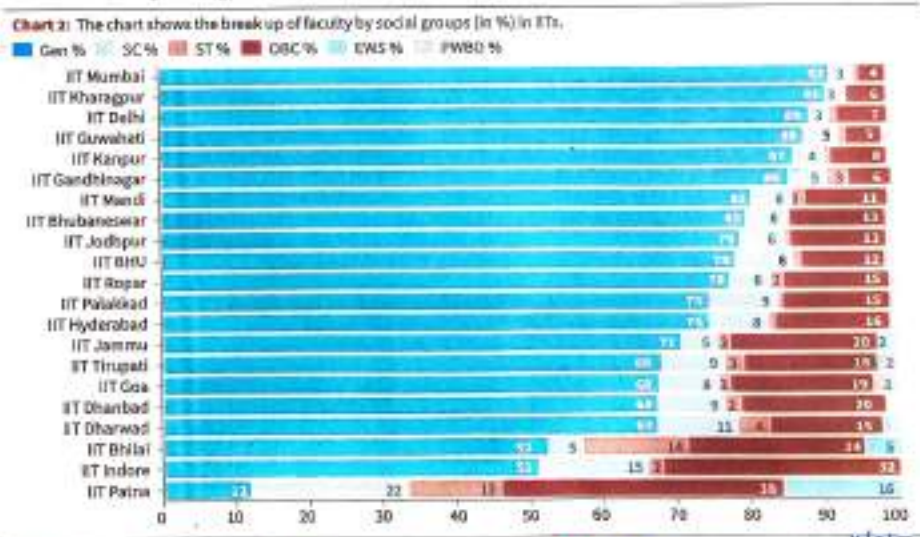


Chart 2: The chart shows the break up of faculty by social groups (in %) in IITs.



MILLENNIUM POST (P-7), 02 DECEMBER 2024

Democratising Learning

'One Nation One Subscription' can potentially enhance access to academic resources—reducing costs, and enhancing research quality, which could eventually fuel innovation in India

MANOJ K TIWARI & POONAM SINGH

Despite high publication volumes, India ranks 9th globally in citations, indicating room for enhancing the impact and quality of its research

The 'One Nation One Subscription' (ONOS) scheme, approved by the Government of India, on November 25,2024, aims to democratise access to academic and research content by enabling institutions, organisations, and individuals to access a wide range of scientific literature, including research papers, journals, and e-books, through a unified subscription model. The scheme will be monitored bythe Information and Library Network (INFLIBNET), an autonomous inter-university centre of the University Grants Commission (UGC). The idea was originally proposed in the National Science and Technology Policy (2020).

By centralising subscriptions to global academic resources, ONOS addresses the long-standing issue of unequal access to scholarly resources by ensuring that institutions, students, and researchers have access to high-quality academic content regardless of their geographical location and financial capacity. By negotiating at the national level, the government can potentially reduce costs by leveraging economies of scale. A single subscription model might also lower administrative overheads for individual institutions. For instance, institutions like IIM Mumbai will save Rs 1.79 crore per annum due to the implementation of ONOS.

India has ascended to the 4th position worldwide in research output, with approximately 1.3 million academic papers published between 2017 and 2022

It is observed that India has ascended to the 4th position worldwide in research output, with approximately 1.3 million academic papers published between 2017 and 2022. Over 5,300 Indian scientists are listed among the world's top 2 per cent in the Stanford University Global Research Rankings 2024, up from 4,635 in 2023, highlighting India's growing research excellence. Despite high publication volumes, India ranks 9th globally in citations, indicating room for enhancing the impact and quality of its research.In one stroke, ONOS can potentially address this challengebyboosting the quality of research output in India. Researchers can make more informed contributions, fostering innovation in various fields. ONOS can potentially position India as a global research hub, enhancing the country's competitiveness in the international academic and scientific community.

Inthe NIRF ranking 2024, the category of research and professional practices contributes to 30 per cent of the overall score of the individual institutions. ONOS, if implemented, can contribute to the positioning of the institucions, locally and globally. The scheme aligns with the vision of initiatives like "Digital India" and "National Education Policy (NEP) 2020", which emphasises equitable access to education and technology.

The programme is geared to be launched in January 2025 with a budget allocation of rupees 6000 crores in the budget for the next three calendar years, covering around 6300 government institutions impacting 1.8 crore students. The trickle-down effect of the scheme canbe further multiplied with training and awareness programmes complementing the access.Most importantly, the scheme also involves the monitoring of implementation by the Anusadhna National Research Foundation (ANRF), which will increase its reach and effectiveness.

Prof Manoj K Tiwari is Director at IIM Mumbai and Prof Poonam Singh is also at IIM Mumbai.

Views expressed are personal

PIONEER (P-7), 02 DECEMBER 2024

LEARNING MUST GO ON

Learning opens the doors of possibilities, if it is stopped we are closing that door and impeding our own growth

SHAINY SHARMA

Learning is an essential and lifelong process. It is a cornerstone of human growth and evolution. However, beyond the mechanics of acquiring knowledge lies the nuanced art of learning - an approach that emphasises curiosity, creativity, adaptability and a passion for discovery.

Curiosity - the word says by itself is the fuel for lifelong learning. At its core, the art of learning involves more than the accumulation of facts and skills. It is a dynamic process that integrates intellectual, emotional and experiential dimensions. Learning becomes artful when it is purposeful, joyful and deeply connected to an individual's values and aspirations.

Unlike a rigid, standardised approach, the art of learning recognises that everyone has unique strengths, interests and ways of understanding the world. It encourages learners to embrace their individuality, explore diverse perspectives and find meaning in the learning process for knowledge doesn't only come from formal education or reading books rather it comes from life, conversations, experiences and unexpected encounters.

Individuals should stay open to new perspectives, whether from different cultures, professions or age groups. A growth mindset, as popularised by Carol Dweck, is the belief that intelligence and abilities can be developed through dedication and hard work which contrasts with a fixed mindset that assumes that the abilities are static.

With a growth mindset, setbacks are often seen as learning opportunities rather than failures while challenges are embraced as part

of the learning process. No matter how much one knows, there's always room to grow. Staying humble, and being open to feedback, criticism and constructive input from others can help an individual improve and refine their understanding. Another important factor that enhances the art of learning is the art of passion. Learners who pursue subjects that resonate with their interests, enter a state of flow, where effort feels effortless, and the process becomes intrinsically rewarding.

Passion sustains motivation and fosters deeper engagement, leading to mastery. Surrounding oneself with like-minded individuals who prioritise learning, engaging in discussions, attending workshops or collaborating on projects challenges an individual to learn and grow.

There is no denying that the most brilliant minds ask questions that others may take for granted. One must cultivate a habit of asking 'Why' and 'How' and not just about abstract ideas but in everyday situations too for these questions push the boundaries of one's thinking and can lead to deeper insights.It is always when one embraces learning as a lifelong practice, that can one open oneself to a world of possibilities, ideas and opportunities for personal as well as professional transformation.

Understanding learning as art transforms it from a mundane task into a profound journey of self-exploration and mastery for developing a passion for learning that will never cease to grow.

(The writer is an educator; views are personal)

Political stability: A

DAINIK JAGRAN (P-6), 02 DECEMBER 2024

संकट में भारतीय ज्ञान परंपरा

आचार्य राघवेंद्र पी. तिवारी

एक महाशक्ति के रूप में उभर रहे भारत के लिए औपनिवेशिक गुलामी से मुक्ति आवश्यक हो गई है

अपनी जड़ों की ओर लौटने का समय ● प्रतीकात्मक

यद्यपि हमने 15 अगस्त, 1947 को तत्कालीन औपनिवेशिक शासन से स्वतंत्रता प्राप्त की, किंतु अंग्रेजों की लगभग 200 वर्षों की दासता का दुष्प्रभाव हमारी संस्थाओं, व्यवस्थाओं, राजनीतिक-सामाजिक प्रतीकों एवं जीवनशैली में विद्यमान है। औपनिवेशिक प्रवृत्ति एवं परंपराओं, हमारी शासन व्यवस्था, भाषा, वास्तुकला एवं जीवन के अन्यान्य क्षेत्रों में अब भी मौजूद हैं। तत्कालीन भौगोलिक परतंत्रता अब मानसिक और सांस्कृतिक गुलामी में परिवर्तित हो रही है। वर्तमान परिदृश्य में जब भारत एक वैश्विक महाशक्ति के रूप में उभर रहा है, यह आवश्यक हो जाता है कि हम औपनिवेशिक मानसिकता एवं उसके प्रतीकों से मुक्त हों। आज विश्वभर के चिंतक इस बात से सहमत हैं कि गुलामी केवल शारीरिक रूप से किसी देश पर अधिकार जमाने तक सीमित नहीं होती, बल्कि यह उस राष्ट्र के जीवन दर्शन एवं मूल्यों को भी प्रभावित करती है। अंग्रेजों ने भारत पर शासन करते हुए सिर्फ भौगोलिक एवं आर्थिक शोषण ही नहीं किया, वरन सामाजिकता, परंपरा, इतिहास और सांस्कृतिक अस्मिता को भी विकृत करने का दुष्प्रयास किया। परिणामस्वरूप ऐसी मानसिकता का विकास हुआ जिसमें भारतीय नागरिक 'स्व' के अस्तित्व को भूलकर पश्चिमी सभ्यतागत विमर्श के अनुगामी बन बैठे।

जैसे कि भारत में आज भी अंग्रेजी भाषा का वर्चस्व है। अंग्रेजी के मुकाबले अन्य भारतीय भाषाओं को हीनता की दृष्टि से देखा जाता है। उच्च शिक्षा, न्याय प्रणाली एवं प्रशासनिक कार्यों में अंग्रेजी का ही बोलबाला है। भारतीय भाषाओं का व्यवहार करने वालों को कमतर आंका जाता है एवं अंग्रेजी बोलने वालों को अधिक योग्य माना जाता है। कई माता-पिता इस बात पर गर्व करते हैं कि हमारा बेटा जिस स्कूल में पढ़ता है वहां एक भी शब्द हिंदी का बोलने नहीं दिया जाता। युवा पीढ़ी न तो अपनी मातृभाषा में लिखने-पढ़ने में सक्षम है और न ही भारतीय साहित्य और ग्रंथों को समझने में। ऐसी स्थिति ने भारतीय ज्ञान परंपरा को संकट में डाल दिया है। अंग्रेजी से हमें परहेज नहीं होना चाहिए, परंतु उसे अपनी मातृभाषा से ज्यादा महत्व देना ठीक वैसे है जैसे अपनी मां के स्थान पर दूसरे की मां को अधिक श्रेष्ठ मानना। आज संपूर्ण जीवनशैली में पश्चिमी बातों का अंधानुकरण करना एक 'स्टेटस सिंबल' सा बन गया है। परंपरागत व्यंजनों के प्रति हमारी रुचि कम हो रही है एवं पाश्चात्य व्यंजन हमारी थाली की शोभा बढ़ा रहे हैं। आज हम जो फादर्स-मदर्स-ब्रदर्स-सिस्टर्स-वैलेंटाइन डे आदि मनाते हैं, यह तो हमारी संस्कृति का हिस्सा नहीं, अपितु पाश्चात्य संस्कृति की भोंडी नकल हैं। हमारे लिए तो जीवन का प्रत्येक क्षण इन रिश्तों में आत्मीयता हेतु समर्पित था। हम अपनी प्रकृति-प्रेमी जीवनशैली से विरक्त होकर प्रकृति विरोधी पथ पर अग्रसर हो गए हैं। परिणामतः जलवायु परिवर्तन के दुष्परिणाम झेलने को विवश हैं।

संपूर्ण व्यक्तित्व विकास सुनिश्चित करने वाली गुरुकुल शिक्षा प्रणाली के बजाय भारतीय शिक्षा प्रणाली आज भी मैकाले द्वारा स्थापित ढांचे पर आधारित है, जिसका उद्देश्य भारतीयों को अंग्रेजी शासन के लिए 'क्लर्क' तैयार करना था। हमारी शिक्षा व्यवस्था आज पश्चिमी ज्ञान को श्रेय देती है एवं भारतीय ग्रंथों, विज्ञान और परंपराओं को हाशिये पर धकेल रही है। इस हेतु हमें भारतीय ज्ञान प्रणाली का नए सिरे से अध्ययन एवं वर्तमान में उनकी उपादेयता पर सघनता से कार्य करना होगा। आज भी भारतीय न्याय प्रणाली एवं प्रशासनिक व्यवस्था ब्रिटिश माडल पर आधारित है। न्यायिक प्रक्रिया अंग्रेजी में होती है, जो आम जनमानस की समझ से परे है। इस दिशा में तेजी से परिवर्तन की आवश्यकता है। भला हो मोदी सरकार का जिसने पहली बार भारतीय न्याय संहिता लागू की।

अंग्रेजों ने भारतीयों में यह भावना विकसित की कि हम सभ्यता, ज्ञान और संस्कृति के क्षेत्र में पश्चिम से कमतर हैं। यहां तक कहा गया कि भारतीयों को सभ्य बनाना अंग्रेजों का अतिरिक्त कर्तव्य है। यह मानसिक गुलामी हमारे विकास में बाधा बन रही है। भारतीय परंपराओं, संस्कारों, रीति रिवाजों, कौशल-विकास परंपरा, ग्रामीण अर्थव्यवस्था आदि को आधुनिकता के नाम पर त्यागा जा रहा है। युवा पीढ़ी अपनी जड़ों और संस्कृति से अनभिज्ञ होती जा रही है। हम अपने संसाधनों और प्रतिभा का संपूर्ण उपयोग नहीं कर पा रहे हैं। विदेशी वस्तुओं, तकनीक और सेवाओं पर अत्यधिक निर्भरता आत्मनिर्भर भारत के मार्ग में अवरोध है। ऐसे में यक्ष प्रश्न है कि मानसिक गुलामी से मुक्ति कैसे पाई जाए? औपनिवेशिक मानसिकता से मुक्त होने के लिए देश को व्यापक सामाजिक, सांस्कृतिक, राजनीतिक एवं आध्यात्मिक पुनर्जागरण की आवश्यकता है। यह केवल सरकारी नीतियों तक सीमित नहीं हो सकता, अपितु समाज के प्रत्येक वर्ग को मनसा, वाचा, कर्मणा इस महायज्ञ में आहुति डालनी होगी। राष्ट्रीय शिक्षा नीति में निहित सुधारों को संपूर्णता से लागू करके ही शिक्षा में भारतीय संस्कृति, परंपराओं, ज्ञान भंडार एवं गौरवशाली इतिहास को प्राथमिकता दी जा सकती है। आवश्यकता है कि हम अपनी जड़ों की ओर लौटें एवं उन्हें सींचें। अपनी संस्कृति एवं जीवंत परंपरा पर गर्व करें और औपनिवेशिक मानसिकता को त्यागकर आत्मनिर्भर, स्वाभिमानी, विकसित एवं 'स्व' के तंत्र वाले भारत का निर्माण करें। मानसिक गुलामी से मुक्त होकर ही हम वास्तविक अर्थों में स्वतंत्र और आत्मनिर्भर बन पाएंगे। जब तक भारतीय समाज इस बीमारी से मुक्त नहीं होगा, हमारी स्वतंत्रता अधूरी रहेगी। और इस लक्ष्य को प्रधानमंत्री नरेन्द्र मोदी के साथ कदम से कदम मिलाकर 2047 तक प्राप्त कर लेना होगा।

(लेखक पंजाब केंद्रीय विश्वविद्यालय, बठिंडा के कुलपति हैं)
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Spokesperson for the oppressed

Amiya Kumar Bagchi went against dominant currents in his research, convictions

ADITYA MUKHERJEE

PROFESSOR AMIYA KUMAR Bagchi passed away on November 28 at 88. A legendary Indian academic, teacher and institution builder has left us. Since the 1970s, there would hardly be any historian or economist in any premier institution in India who was not exposed to or grappled with his writings, whether they agreed with some of his conclusions or not. He will be sorely missed, particularly in today's times when the academic world is under severe stress in India, with free and non-conformist thought becoming increasingly difficult and even punishable.

If there was one quality that distinguished Professor Bagchi, it was his ability to stand up boldly against the dominant current, however powerful and pervasive it may be, if his own research and conviction pointed the other way. In the discipline of economics, India began to witness by the late 1960s and early '70s a turn away from the study of Political Economy, (which was the hallmark of our early nationalists, people like Dadabhai Naoroji and R C Dutt, a tradition kept alive by later economists like Bhabatosh Datta, B N Ganguli, K N Raj and several others), towards econometrics, mathematical modelling, game theory, etc. It was at that time that Bagchi, as a doctoral student at Cambridge, switched from being a game theorist to probing issues of political economy, particularly economic history. Economic history proved critical in making major theoretical breakthroughs, as is evident from the writings of Karl Marx, Dadabhai Naoroji, Maurice Dobb, Ernest Mandel, Andre Gunder Frank, Paul Baran, Daniel Thorner and so many others. Bagchi too used his deep foray into economic history to make important theoretical generalisations.

Bagchi's magnum opus *Private Investment in India, 1900-1939*, published in 1972 was his first major work as a result of his shift in focus to economic history. Based on research from a variety of sources in India and England, the book immediately became a must-read for every student of history and economics and it remains so till today, more than 50 years after it was published. After a deep and thorough study of all major sectors of the Indian economy, Bagchi demonstrates, proving many current supply-oriented hypotheses wrong, that the reason for the lack of industrial investment and overall growth in colonial India was not what economists had been repeating ad infinitum. That is, the lack of supply of capital, or its "shyness", lack of entrepreneurship, unsuitable social traditions and values in contrast to the so-called "protestant ethic" in England, overpopulation and so on, but the imposition of the priorities of British imperialism in India which constrained demand severely, limiting the profitability or even viability of investment.

Professor Bagchi's foray into the economic history of the modern period led him inevitably to look at the capitalist system as a global phenomenon, which explained the development of some parts of the world and the underdevelopment if not decimation of other parts. Among his numerous publications, the next major contribution came in the form of the book *The Political Economy of Underdevelopment*, published in 1982. It is a study that looks at various parts of the world which became victims of colonialism at different points of time for varying periods, under different colonial masters, but all sharing certain underlying similarities and structural disabilities. The study covered Latin America, Indonesia, China and India.

From here, the logical next step was his masterly overview of the emergence of world capitalism and its impact, not only in the early stages of the rise of capitalism but also its devastating consequences on a large part of humanity up to the current millennium. It was to be his last magnum opus, *Perilous Passage: Mankind and the Global Ascendancy of Capital*, published in 2005. In this work, Bagchi, in his inimitable polemical style backed by huge amount of empirical evidence, demolishes several Eurocentric myths promoted by the dominant Western world, such as that Europe went ahead of the rest of the world centuries before the Industrial Revolution, or that Europe shot ahead of the rest of the world with the Industrial Revolution because of some intrinsic advantages or capabilities. On the contrary, he shows that the Great Divergence, the rapid rise of the West was in fact predicated upon surplus extraction and decimation of the rest. Through a detailed calculation he shows that between 1871 and 1916, Britain extracted as tribute from India about £3.2 billion while total British investment abroad was about £4 billion, a large part of it going to the White colonies and the US. The blood and sweat of the Indian people thus contributed, in no small measure, to the "peopling of the United States" through massive migrations from Europe "and its rise as the most economically advanced country in the world (and) also helped improve the living conditions of the Europeans left behind." A connection Professor Bagchi brings home so dramatically that our colonised minds did not make.

The world will miss a great spokesperson for the oppressed.

The writer taught contemporary history at JNU. His latest book is Nehru's India: Past, Present and Future

Four tips to articulate your career goals effectively in an interview

Prashant Tibrewal

Interviews are one of the most common and effective mediums to showcase your personality, skills, potential, and experience to the interviewer. While the ultimate goal is often to secure the desired position, it is equally important to understand that it is a powerful tool for both personal and professional growth opportunities. Often, the feedback received from the interviewer can be effectively used to refine your career goals and focus areas. By incorporating this feedback into your preparation for future interviews, you can continuously improve and align your professional journey with your goals, ultimately contributing to your long-term success.

One major question that is usually asked during the interview is about your career goals. This question is not only designed to gauge your ambition and future trajectory but also to assess how your aspirations align with the company's mission and growth. Being able to convey your career goals effectively can distinguish you as a candidate who is self-aware and has insight into how the position fits into your long-term vision. Here are four important tips to help you articulate your career goals clearly and effectively in an interview.

Establish a strong correlation between professional aspirations and organisational vision

Start by researching about the company's mission, values, and long-term objectives. Consider how these resonate with your personal and professional ideals and fit into your larger goals outline and highlight your skills, interests, and experience that will allow you to contribute to the organisation's vision and enable mutual growth and success. This not only shows that you've done your homework but also demonstrates your commitment to growing alongside the company. Make it clear that you're excited about building a future that benefits both you and the organisation. Thereby, you can convey genuine enthusiasm and a clear sense of direction that resonates with the interviewer.

Relate your goals to the skills and strengths developed through past experiences

Interviewers are often looking for candidates who are open to learning and acquiring new skills, not just those who are content with their current abilities. It's important to showcase a balance between confidence in your existing skills and enthusiasm for growth. When discussing your experience, consider how it connects with the job's key responsibilities. Focus on specific skills you gained at your previous organisation and how they'll help add value to the current role. For example, if you are applying for a manager's role, highlight your leadership achievements and explain how you will use these skills to guide a team towards accomplishing organisational goals, while also expanding your skill set in the process.

By linking your past experiences to your future aspirations, you demonstrate both preparedness and a forward-thinking mindset.

Present a strong understanding of the role and industry you want to grow in

Express your understanding of the role you are pursuing and the industry you want to grow within. Share how your expertise and vision align with market trends and emerging challenges. Show how you can leverage this understanding to drive innovation and create value for the company. For example, if you are applying for a role in the tech sector, you can discuss your awareness of advancements such as AI, cloud computing, or cybersecurity, and how you plan to use these developments to contribute to the company's success.

Additionally, don't be afraid to ask questions, and express curiosity and willingness to learn by asking thoughtful questions about the role, the company and even industry-specific challenges. This demonstrates your ability to think beyond the immediate job requirements, positioning you as a candidate who can make meaningful contributions in the long term.

Discuss how your short-to-medium-term plans will lead to long-term impact

It's important to show how your short-to-medium-term plans align with your long-term objectives, for both your personal growth and the company's success. You can begin by outlining how you plan to acquire relevant experience, build industry knowledge, and develop key skills in the near future. Emphasise how these efforts will lay the foundation for impactful contributions in the long run.

For example, you might discuss your desire to develop leadership capabilities, master new technologies, or expand your cross-functional knowledge. Stress how focusing on short-term objectives like these will enable you to take on more responsibility and produce significant outcomes for the company in the future. By connecting your short-term goals with your long-term ambitions, you convey both dedication and foresight.

To sum up, interviews are not just a platform for a candidate to share their aspirations but an opportunity to articulate one's goals with clarity, purpose, and alignment. It is about aligning personal objectives with the organisation's vision, demonstrating the skills and experience necessary to drive results, and committing to both personal and professional growth, you position yourself as a strategic asset. Remember, this approach not only contributes to individual success but also drives the long-term success of the business. It's about creating a unified path forward, where both individual ambitions and organisational goals progress together, leading to impactful and sustainable outcomes. At the end of the day, it's your ability to talk about your goals with confidence and vision that truly sets you apart—it's what transforms you from a job seeker into a future leader in the making!

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Bridging gaps: Empowering India's healthcare workforce for a stronger future

PB SODANI

Imagine a corporate system functioning without management departments, or employees working with incomplete knowledge, would it be counted as a perfect working organisation? Similarly, despite significant advancements in India's healthcare sector over the past two years, the industry still grapples with complex challenges related to its workforce. According to the India Brand Equity Foundation (IBEF), the healthcare sector in 2024, will be one of the country's largest employee industries, estimating a workforce of 7.5 million healthcare professionals. Still, issues of training, retention, and management occur as a primary challenge in this industry, which is not only an administrative concern but has a direct impact on the quality of care received by millions of patients every day.

Training: Bridging the skills gap

Indian health care ranges from crowded metropolis hospitals to a remote rural clinic suffering a range of unresolved problems that require serious attention to be addressed now. What students are taught in healthcare institutions varies from what is needed in on-site fields.

The Indian healthcare market, which was valued at US$ 110 billion in 2016 is now projected to reach US$ 638 billion by 2025, revealed by India Brand Equity Foundation (IBEF). The integration of modern technology and tools has revolutionised healthcare sectors. On the contrary, numerous healthcare professionals have revealed that the Indian health industry is significantly behind Western countries. The reason for this gap is the traditional curriculum, which emphasises theoretical knowledge over practical skill build-up.

Will reforming technology be worthwhile for the 7.5 million human capital in the health sectors, if the gap between technological advancements and patient care continues to widen?

Retention: Keeping talent in the field

Incomplete knowledge is not only the reason behind this gap, retaining trained healthcare professionals is another major challenge. Turnover rates are another great concern surrounded by high job dissatisfaction, burnout, and low financial remuneration. This condition is a turning factor for many healthcare professionals to quit their jobs and go abroad for better opportunities. Isolation and poor professional development opportunities worsen the situation for healthcare workers in rural areas, which the government still fails to navigate.

This can be solved if competitive salaries, mental health support, and career opportunities are strongly built for our students and professionals. For example, the 'Swasthya Karmi' scheme initiated in collaboration with UNICEF for tribal communities resolves some of these issues through improved working conditions, by training health workers in rural areas that boost their morale and reduce turnover.

Management: Effective strategies for a growing workforce

Is it possible that with the largest population, the problem is not confined to that, rather the challenge lies in managing a diverse range of professionals across various levels, from highly specialised doctors to frontline health workers in remote areas?

The lack of standardisation in workforce management practices in the healthcare sector leads to inconsistencies in quality care and inefficient resource allocation. A study by the Public Health Foundation of India (PHFI) highlights the need for a unified system to manage healthcare workers, as mismatches between workforce availability and patient needs are common.

To address these challenges, adopting technology such as Electronic Health Records (EHR), and telemedicine concepts for examining patients and Health Management Information Systems (HMIS) can streamline administrative tasks, reduce paperwork, and improve coordination among healthcare teams. Furthermore, implementing robust data management systems can ensure efficient resource allocation and deployment of healthcare workers.

Additionally, fostering a culture of continuous professional development through regular training, certifications, and support for higher education can enhance job satisfaction, career longevity, and overall workforce engagement. Surroundings and nature are considered to be the best teachers for any learner.

How education can contribute

Education is at the heart of building a stronger health workforce system. Education plays an important role, whether related to improved educational quality, escalation of workforce development, or rebuilding management.

The first is a call to action for updating the education system by introducing modern or newly adopted techniques, and advanced technology and implementing real-world problem-solving into the educational apparatus will improve preparedness for future roles. Forming partnerships between academic institutions and healthcare providers re-engages curricular design ensuring accurate responsiveness of teaching hospitals and other healthcare educational programs to the needs and expectations of an evolving workforce.

The Indian education system should reconstruct the curriculum by prioritising problems that are truly part of society rather than adhering to a syllabus developed decades ago. Workplaces with ongoing specialisation opportunities, further training, or advancement of leadership skills are likely to foster enthusiasm amongst the workforce. This will enhance individual work satisfaction and improve versatility in regional and specialised care making a more effective health workforce and system.

Training programs focused on management and the usage of technology will inevitably improve efficiencies in the management of operational areas of healthcare. When healthcare managers have foundational training and skills to address the many levels of the administrative burden of modern healthcare or are exposed to ongoing learning that addresses new skills that support technology, the ability to operate healthcare organisations, systems, and entities improves.

INDIAN EXPRESS (P-12), 04 DECEMBER 2024

AI Challenge In Classroom

Institutions should start conversations on how to use technology with integrity

Arul George Scaria

A RECENT PETITION filed by a law student before the Punjab and Haryana High Court against a private university for failing him in a course raises important questions regarding generative AI (GenAI) use in academia and research. The university failed the student because he used AI-generated materials to submit responses in an examination. The student challenged the decision on several grounds, including lack of sufficient evidence and violation of principles of natural justice. As the university later informed the Court that they had passed him, it disposed of the petition.

While whether a student used GenAI tools in his submissions is an inquiry conducted ideally by experts in the field, the controversy raises a broader question – how to navigate the ethical and academic challenges posed by GenAI fairly and consistently. When used appropriately, many GenAI tools can act as complementary resources to enrich learning and enhance communication. These tools can, however, defeat many broader goals of education when used in inconsiderate ways. Many institutions are now grappling with the challenge of GenAI-generated submissions by students and researchers. Academic journals and other scientific communication platforms face a similar challenge.

The response from many Indian institutions to this crisis has, unfortunately, been far from satisfactory. A substantial chunk of institutions continues to proceed with traditional modes of evaluation, as if nothing has changed. Some institutions that are concerned about excellence in education and research have gone to the other extreme to rely heavily on technology. Many indiscreetly use AI detection tools like Turnitin AI Detector to penalise students and researchers.

Appropriate disclosures regarding AI use should also become a norm in academia. Students and researchers should be obliged to disclose what tools were used in their writing, and for what purposes. Based on the disclosures as well as the institutional guidelines, inquiry committees could take fair and balanced decisions on AI misuse allegations. It is also important for students and researchers to keep a record of their writings.

As numerous scientific studies have pointed out, false positive rates are a matter of concern with respect to most AI detection tools. These tools operate on probabilistic assessments and their reliability substantially goes down when human intervention modifies an AI-generated draft. While it may be relatively easy for a tool to detect a completely AI-authored work, the robustness in prediction drops substantially when the output from the GenAI tool is edited or modified by the user. It is important to understand the importance of human intervention. The decision on whether a candidate has engaged in academic malpractice has to be taken by experts in the subject area. Not much reliance should be placed on machine-generated reports.

A constructive starting point for addressing the current GenAI crisis could be opening dialogues within institutions on what constitutes permissible AI assistance, and what is not. This clarity is important, as AI tools are increasingly getting integrated to widely used word processors – use of AI tools for language correction, for example. Without clear guidelines, students and researchers may inadvertently commit mistakes. Institution-level dialogues can lead to both general and discipline-specific guidelines.

Institutions could also consider supplementing written submissions with rigorous oral examinations to enable a more holistic assessment of the candidates and reduce potential misuse of AI tools. This demands greater time and effort from the faculty and examiners. This needs to be factored in in the faculty workload planning of institutions. Regulatory authorities like UGC and AICTE have a major role in facilitating this transformation.

Appropriate disclosures regarding AI use should also become a norm in academia. Students and researchers should be obliged to disclose what tools were used in their writing, and for what purposes. Based on the disclosures as well as the institutional guidelines, inquiry committees could take fair and balanced decisions on AI misuse allegations. It is also important for students and researchers to keep a record of their writings. Tools such as "version history" in Microsoft Word can help to prove what part of the document was authored by them and what modifications were subsequently made with AI tools.

It is also important for policy makers to revisit the incentive structures within academia and research, particularly the relentless focus on publications that promotes a publish-or-perish culture. Though UGC has removed the mandatory publication requirements for the grant of a PhD degree, many institutions continue to demand publications from doctoral candidates. It is high time that we explore better modes of scientific communication and evaluation that values quality over quantity. Comprehensive reforms can help us balance the opportunities and challenges posed by the technology.

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JE/12

PIONEER (P-6), 04 DECEMBER 2024

One nation one subscription as a catalyst for equitable education

BIJU DHARAMPALAN

Access to quality academic resources remains a significant challenge for students and researchers, especially in India's remote regions

Access to quality resource materials remains a critical challenge for students and research scholars, particularly in the remote corners of India. While the digital age has transformed the way information is disseminated, physical libraries continue to be the cornerstone of academic excellence.

Yet, these essential knowledge hubs are increasingly becoming relics of the past, accessible only to a privileged few associated with national institutions and selected universities. So far, every agency in the country has subscribed for their digital library resources, UGC have INFLIBNET, which is available in selected universities and colleges, CSIR and DST institutions have the National Knowledge Resource Consortium (NKRC); ICAR institutions have CeRA, etc, paying crores of rupees. In many cases, these e-resources are limited to the users of the host institute alone, though they are funded through public money. The ambitious One Nation One Subscription initiative, if implemented effectively, has the potential to

address this disparity and revitalize the educational landscape. Despite technological advancements, access to quality academic resources has not been democratised in India till now.

Libraries in most colleges and universities face an alarming decline for various reasons. The lack of interest among younger generations in visiting libraries and shrinking funds has exacerbated this crisis. Unfortunately, in many public institutions, mainly libraries associated with national institutions, library staff often lack the enthusiasm and interpersonal skills to create a welcoming environment for readers.

This, in turn, alienates even the most genuine readers who, despite the odds, make the effort to visit libraries. A lack of support and an uninviting atmosphere can deter students and researchers from making libraries their go-to space for academic and intellectual pursuits, further eroding the library culture that is already under threat.

The One Nation One Subscription initiative aims to address these challenges by providing nationwide access to high-quality academic resources through a centralized system. By negotiating bulk subscriptions to international and national journals, databases, and e-books, the initiative can ensure that every student has the same knowledge regardless of geographic or economic constraints.

What a student or scholar gets in a national institute will be available to a student in a university situated in a remote corner of the country. It's democratising the knowledge resource. However, the success of this initiative depends on more than just access. India needs a parallel effort to rejuvenate its library ecosystem. Even in the digital age, physical libraries are irreplaceable as spaces for reflection and collaboration.

The Government should provide adequate funds to modernise the libraries and also take steps to recruit skilled, motivated librarians who understand the evolving needs of readers and can effectively manage digital and physical resources. To ensure inclusivity, The One Nation One Subscription must provide individual login credentials to every registered student and scholar, enabling direct access to resources anytime, anywhere. This would bypass traditional institutional gatekeeping and foster a more reader-friendly environment.

Policymakers must ensure this ambitious plan does not falter due to a lack of implementation or neglect of complementary measures. Knowledge is the cornerstone of progress, and access to it must be recognised as a fundamental right, not a privilege. To fully realise the potential of this initiative, it is essential that the government ensures access to these resources for every student.

(The writer is an adjunct faculty at the National Institute of Advanced Studies; views are personal)

CEO SPEAKS

INCLUSIVE EDUCATION: KEY TO INDIA'S FUTURE

DR SANKU BOSE

India is on a promising path of transforming its education system, with equity and inclusion at the heart of this mission. The National Education Policy (NEP) 2020 envisions a future where every learner, regardless of background, has access to quality education and opportunities. By addressing challenges such as the digital divide, enhancing teacher training and fostering inclusive learning environments, the nation is embracing innovative solutions to empower all its students. This positive reflects hope and collective commitment to unleashing the potential of every child, paving the way for a brighter and more equitable future.

Indeed, quest for equitable education started with not only providing access but also addressing systemic barriers. The 86th Amendment in 2002 and the subsequent Right to Education (RTE) Act, enacted in 2009, solidified this commitment by guaranteeing education for children aged 6-14 as a fundamental right. Over the years, various schemes like Sarva Shiksha Abhiyan, Mid-Day Meal Programme and many others have aimed to reduce dropouts, improve access and promote gender equity with varying rates of success. But there is plenty more that needs to be done.

In terms of population numbers, the only other country we can compare our schools is China. China has achieved near-universal primary education and significantly higher enrolment rates in secondary and tertiary education. From 2001 to 2021, China's Gross Enrolment Ratio (GER) in tertiary education increased from 7.06% to 47.28% as per the World Bank, an increase of more than 33 times! India, which led China with a 9.19% GER in 1981, managed less than a six-fold increase to 30.19% in the last 40 years. During the period, both countries spent between 3.1 to 4.6% of their GDP on education.

Policymakers seem to have taken note. The NEP 2020 tried to present a comprehensive vision for transforming education into a more equitable and inclusive system. This policy does not merely identify challenges—it offers targeted strategies to address them, including the barriers posed by socio-economic, cultural and infrastructural complexities.

NEP 2020 prioritises universal access to quality education, focusing on marginalised and underserved communities. The policy mandates the establishment of pre-primary schools/anganwadis in rural and tribal areas, ensuring that every child, regardless of their geographic location, has access to schools within their vicinity. Recognising the importance of early childhood care, NEP proposes foundational literacy and numeracy missions to combat learning deficits early on. This approach is particularly critical in bridging gaps for children from disadvantaged backgrounds who often lack access to preparatory resources.

One of NEP 2020's standout features is its cultural sensitivity. It advocates for inclusive curricula that celebrate India's diversity while addressing systemic biases related to gender, caste and community. By revising textbooks and pedagogical practices, NEP aims to dismantle stereotypes and foster mutual respect among students. Importantly, it emphasises the use of local languages in primary education, recognising that language barriers do not impede learning for rural and tribal students.

Another crucial component of NEP 2020 is teacher training. The policy underscores the need for continuous professional development to enable educators to adopt effective learning methodologies. Teachers are envisioned as facilitators of knowledge providers and to customise experiences to guide students through academic and emotional challenges. The inclusion of technology in teaching-learning processes is another hallmark of NEP. From digital content platforms like DIKSHA to multilingual learning initiatives under PM eVIDYA, technology is envisioned as a key enabler of inclusivity. However, its success depends on addressing the pervasive digital divide.

India's digital divide is a formidable obstacle. While urban students enjoy broadband connectivity and access to smart devices, their rural counterparts often lack basic electricity. Initiatives like BharatNet, aimed at expanding internet access in rural areas, are promising but must be expedited. Additionally, community-driven solutions, such as mobile learning vans equipped with offline digital content, can play a pivotal role in bridging this divide.

However, policies alone are insufficient. Implementation—teachers, school leaders, and administrators—plays a decisive role in translating policy into practice. It requires cultural shifts within schools and colleges to make every student feel valued and respected. Representation matters—curricula must reflect diverse perspectives, celebrating the contributions of all communities. Schools must actively engage with parents and local leaders to foster a sense of belonging and relevance in education. Anti-discrimination policies and robust grievance redressal mechanisms are vital for combating exclusion.

Teacher training programmes must be revamped to include modules on inclusive teaching strategies and cultural sensitivity. Partnerships with tech companies can help provide affordable devices and internet access to underserved schools. Data-driven decision-making should guide intervention, identifying areas with the greatest needs and measuring the impact of implemented solutions. India must also embrace collaborative networks, bringing together educational experts, non-profits and private enterprises to pool resources and expertise. For instance, corporate social responsibility (CSR) initiatives can be leveraged to fund digital classrooms while NGOs can support community mobilisation efforts.

> Teacher training programmes must be revamped to include modules on inclusive teaching strategies and cultural sensitivity

Artificial Intelligence (AI) holds transformative potential for inclusion. Personalised learning systems powered by AI can cater to individual learning paces and styles, ensuring no student is left behind. For students with disabilities, AI-driven assistive technologies like text-to-speech software, screen readers, and sign language interpreters can open new doors of opportunity. For example, in rural regions, AI tools to support students with dyslexia could help tailor could replicate to regional languages to reach millions.

The transformative role of India's government schools cannot be overstated when implementation can achieve. Investments in infrastructure, teacher training, and innovative programmes like the 'Happiness Curriculum' and 'Deeksha Mentor' have significantly improved educational outcomes for underprivileged students. The model shows that inclusive education is possible when vision meets execution.

Nelson Mandela aptly said, "Education is the most powerful weapon which you can use to change the world." If India wishes to wield this weapon effectively, it must ensure that education is inclusive, equitable and accessible to all. The journey is arduous, but with determination and collaboration, the vision can become a reality. In an era driven by innovation and knowledge, investing in equitable education is the most powerful tool to unlock our nation's true potential.

The author is the Group CEO of Techno India Group, a visionary and an educator. Beyond his corporate role, he is also a mentor who guides students towards resilience and self-discovery.

PIONEER (P-6), 05 DECEMBER 2024

The role of teachers in building positive learning spaces

ALKA **KAPUR**

A successful classroom isn't just about books and resources; it's about creating an environment where students feel valued, heard and empowered to succeed

A thriving learning classroom is grounded in the way the students perceive their classroom. It's not just about utilising the appropriate resources but establishing a space where students feel recognised, heard and valued. Teachers are the key catalysts in making this possible by nurturing a balanced, cohesive and well-organised environment that allows students to reach their potential. By implementing strategies to cater to individual requirements, connect thoughtfully, and commemorate milestones, educators can establish an educational atmosphere that supports progress, self-esteem, and teamwork.

Teachers can build a positive and inspiring learning space:

Develop a sense of anticipation: Teachers should give explicit instructions and procedures to their students so that they feel comfortable. When students know what comes next, their interaction with the lesson increases and their belief in their learning abilities is enhanced, leading to a serene and concentrated mood. Address students' needs. No student is entirely

similar to another in the classroom. Instructors should appreciate academic and emotional needs and take a personalised approach to materials, attention, and motivation .

Welcome learners into the classroom First impression means a lot. A simple smiling morning wish makes students receive and look forward to the day. A welcoming environment causes active involvement and participation in the class's activities.

Interact with students Ideally, this should help prepare a powerful fondness between teachers and students. Teachers must take an active role in students' lives; they should ask questions and pay attention to the answers. This builds trust, develops reading skills, and makes students want to speak more. Team-building activities Team-building activities help in practising directives and showing appreciation to others.

Be experiential Sometimes, the mistakes, failings and losses of the teachers make the learning environment comfortable and emotionally intelligent. This ensures that students are encouraged to connect and share, indicating that learning is collective and not individual.

Celebrate success and appreciate students: Recognising and celebrating students' achievements enhances their self-confidence and encourages them to try again. Teachers must reward such behaviour with verbal appreciation, prizes, or other forms of reward in the classroom.

Avoid judgement: Acceptance and open-mindedness are evident in a conducive learning environment. Judgement should not be attached to the students so that the students can feel free to explore and even commit mistakes without being laughed at.

Suppress anger and act strategically: Emotional regulation is expected from the teachers. Keeping cool during conflicts or problems serves as a good decorum for the students' emotions and problem-solving skills, this practice leads to a learning environment that is calm and goal-oriented.

Listen to their thoughts Allowing students to express their opinions also encourages them to take responsibility for their learning. Studies suggest that teachers should nurture students to enable them to speak their minds.

Acknowledge feedback: The teachers should encourage and respond to any feedback from their students. If the students are appreciated for their response, then the atmosphere becomes interactive. Simple activities such as organising the room, attending to students, or recognising achievement encourage teachers to design a safe, friendly, and welcoming space for students. A welcoming and nurturing classroom facilitates academic achievement among learners and emotional and social development.

(The writer is principal of Modern School; views are personal)

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ASSAM TRIBUNE (P-4), 06 DECEMBER 2024

Power of science

IISF-2024, which concluded at IIT Guwahati on Tuesday, celebrated India's scientific achievements, underscoring the critical role of science and technology in shaping the nation's future. The four-day event witnessed a wide-ranging display of innovation, collaboration, and knowledge-sharing, with participants from the scientific community as well as planners, policy makers, academia and students coming together to explore the transformative power of science. Holding such major science events and the enthusiasm and the wide participation and publicity it generated sends out a strong signal of rational thinking and scientific temper. The days ahead belong to science and collaboration if the fruits of mind-blowing technological advancements were to reach the grassroots and trigger social progress. For this, we need to have a sustained interface among scientists, governments, policymakers and the industry. Another imperative is to expand the exposure of science to the younger generation and sow in young minds the seeds of scientific temper. A more sustainable and self-reliant future for the State and the Northeast as also for the entire nation will entail leveraging science and innovation. It was refreshing to see thousands of students attending and becoming a part of the days of scientific discussions and deliberations during IISF-2024. The success of IISF as a platform for inspiration and collaboration needs to be taken to the next level for advancing India's global scientific leadership.

Over the centuries, science and technology have played a key role in uplifting human civilizations, with the pace getting more pronounced following the industrial revolution. Indeed, there exists an undeniable link between a progressive, equitable economy, and proper application of science and technology. Economic progress and technological advancement generally go hand in hand, which implies an urgent need for integration of technology and economy. The paradox in India has been that despite the remarkable growth of science and technology, a vast majority continues to remain deprived of the fruits of development. This is evident by the appalling living conditions of a sizeable section of the populace. This brings us to the all-important question of how to apply science and technology for the greatest good of the greatest number – something that has not yet taken place in the country. It's disturbing to see that technological advancements have fallen short of fulfilling the collective, national need of making India a better place to live for the citizens. Here is the crucial imperative of ensuring that science and technology are applied for sustainable and optimum utilization of our natural as well as human resources and transform India into a developed nation. We have seen how countries desirous of making a mark globally – such as China and South Korea – have been investing heavily in education. A country's prosperity is not determined by the size of its Army; rather it is determined by the way it shapes its human resources.

06/12/24

DECCAN HEARLD (P-8), 06 DECEMBER 2024

INCENTIVE TO INNOVATE

Policy tweaks can push private sector R&D

Non-restrictive, investment-friendly policies will attract private investment to help India realise its innovation potential

SARTHAK PRADHAN AND PRANAY KOTASTHANE

A few days ago, Apple Inc. established a wholly-owned subsidiary for research and development in India. While the company has conducted R&D in the United States, China, Germany, and Israel, it did not previously have a research base in India. This move is, undoubtedly, a welcome one. However, this initiative should not remain just one of the country's few major industry R&D initiatives. India needs the private sector to play a much larger role in driving its technological advancement.

Currently, India underperforms in innovation. For instance, the country's share in high-tech exports in its manufacturing basket is 12%, a low share compared to 23%, 22%, and 39% in China, Israel, and Vietnam, respectively. This underperformance is not due to government neglect – government spending is in line with the income levels in the country. The primary concern is India's in-house industry R&D, which contributes a mere 36.4% to the gross expenditure on R&D, compared to 77% in China and 75% in the US.

Thus, to increase India's technological power, it is crucial to understand why Indian firms fall short in innovation. For instance, it is noted that Indian firms find it difficult to raise resources. Private investment as a share of India's GDP has declined. High tax rates and uncertainty stemming from sources such as lack of precision in the tax code and frequent tax changes act as disincentives for investment. The existing mechanisms to hedge against tax certainty and facilitate investments have not been effective. Of the 1,659 Advance Pricing Agreement applications, only 516 have been signed, mostly unilateral, which provides less certainty. Since introducing the new model bilateral investment Treaty (BIT) in 2015, India has signed only four new BITs and terminated older BITs with 77 countries, prompting the standing committee on external affairs to remark that "it was not commensurate with the growth of India's interest in this domain and our rising stature in global affairs."

Another key ingredient to foster innovation is talent. India does well in screening top talent but fails to retain this talent. A recent study found that the higher a student's rank is in the IIT JEE exam, the higher the likelihood of the student emigrating. Top-notch talent in an economy needs to be complemented by a large enough skilled labour force. However, India's labour productivity is low, i.e., one-ninth, one-fifth, and one-half that of the US, South Korea, and China, respectively.

Additionally, an ecosystem that

is conducive to firm scalability fosters innovation by helping the firms envision larger markets, incentivising them to bear the fixed costs of innovation. However, restrictive regulations and protectionist policies such as high tariff and non-tariff barriers have reduced the scope of Indian firms' access to cheaper inputs, being part of global value chains, and scale-up.

Given that the societal benefits of R&D surpass the private benefits, there is a case for governments to finance R&D. However, India has progressively reduced R&D tax incentives from 200% in 2016-17 to 100% in 2020-21. Further, India lacks high-quality research universities. The R&D funding to academia in India is just 5% compared to 30% in the US.

Identifying leverage points

So, how do we go about from here? The factors identified above impact innovation, but they also influence each other. For instance, academia can impact the quality of the workforce, which will have a bearing on the corporations and, in turn, can impact academia and the overall R&D system. A one-dimensional analysis of the challenge might not be enough to solve this deep and connected problem. As part of an analysis conducted for the 1991 project, we deployed the tools of complexity to locate all interrelationships that impinge on firm-level innovation.

The complexity analysis helped us identify three leverage points: corporations, universities, and R&D systems. Prioritising these domains would lead to significant gains in innovation.

The government must create an enabling policy environment that attracts investments and facilitates the scaling up of corporations. Reducing tax rates and enhancing tax certainty through improved capacity for concluding APAs and BITs can help. The government should also remove restrictive labour legislation that is out of step with current realities.

Universities in India need to tap the intellectual capital of top talent outside the country. Special fellowships or monetary incentives, similar to those employed by China, might not be sufficient to persuade individuals to move to India permanently. The most viable approach would be facilitating collaboration between Indian researchers abroad and those in India. It could be achieved through joint research programmes and by establishing hubs of excellence in geopolitically favourable and livable locations such as Dubai, Singapore, or Melbourne. Additionally, the government must prioritise setting up new universities and accelerating foreign universities' participation by simplifying the regulatory approval process. It will increase competition and, consequently, increase India's innovation potential.

In addition to the above measures, the government could explore enhancing R&D tax incentives and collaborating with geopolitically favourable partners like the Quad countries to enable technology transfers.

Focusing on the above policy ingredients, identified through considering system linkages, would go a long way in enabling private sector R&D, which could help India transition to a more innovative and advanced industrial landscape.

(The writers are researchers at the Takshashila Institution)

6/12

PIONEER (P-7), 06 DECEMBER 2024

Financial literacy: The key to unlocking India's economic power

By teaching money management skills early, India can cultivate a generation of financially savvy individuals capable of driving economic growth

AJAY LAKHOTIA

As we are about to wrap up 2024, it cannot be underestimated how important financial literacy is with changing trends of the economy, where education is pivotal in determining India's arrival as an economic superpower. Even now, with the growing financial awareness, only 27 per cent of Indian adults are financially literate, that number drops to a mere 16.3 per cent for students. Recognising the urgency for the skills of financial management, the National Education Policy (NEP) 2020 revolves around putting in place financial literacy from the early days of schooling in the country's educational system. Teaching children money management skills early in life helps develop financially responsible adults who can make sound decisions benefiting both themselves and the economy. In earlier times, financial education was largely informal. The previous generation was focussed on accumulating tangible assets like gold and property. However, India's banking and financial system has undergone a vast transformation since the 1990s. With SEBI paving the way for new regulated asset classes for the common public – mutual funds, stocks, bonds, REITS and multiple other financial products are available for the common public to invest and grow their capital. The establishment of the Securities Exchange Board of India (SEBI), has instilled confidence in financial markets and led to greater participation in investments. As India progresses towards a digital financial ecosystem, the demand for financial literacy has never been so crucial in navigating opportunities.

Why Financial Literacy Needs to Start Early: Financial literacy goes beyond just education; it is a life skill and mindset that needs to be cultivated from an early age. All the education policies stress encourage students to be mindful and well-read towards financial issues so that they can cope with anything ranging from budgeting to retirement savings. Students with such financial sensibilities provided that they have been exposed practically to these concepts, would be able to cope with investment volatility, financial contingencies and planning for a strong future. Building such a ground is vital for citizens to contribute towards building a balanced economy.

Taking Inspiration across the globe: Switzerland, Japan, and South Korea have leveraged their core strengths—banking, technology, and manufacturing, respectively—to drive economic growth and establish distinct global identities. These unique specializations have not only accelerated their economic development but also secured their positions as global leaders in their respective domains.

Following their example, India could prioritise financial literacy as a national initiative to enhance its citizens' saving and investing behaviours while increasing economic participation. This focus could yield significant social benefits: reducing poverty, narrowing income inequality, and improving the quality of life for millions.

India's abundant advantages—from its tech-savvy youth to its robust educational infrastructure—position it favourably for global leadership in financial prosperity. However, these strengths alone are insufficient. Without proper financial knowledge, even the most talented individuals may struggle to maximise their potential, ultimately hindering economic growth. By combining financial education with India's technological expertise and expanding educational frameworks, the nation can nurture future entrepreneurs, investors, and professionals who will not only excel in their careers but also effectively manage and grow their wealth.

A multi-pronged approach can help to establish a financially literate India. The key steps to follow:

Integrating Personal Finance into Curriculums: Personal finance should be included as part of the school and college syllabus so that a strong foundation towards money management & finance for a lifetime.

Nationwide Awareness Programs: Public campaigns on financial literacy will reach areas lacking financially literate communities, effectively democratising access to that knowledge as well as encouraging wider economic participation.

Leveraging Technology and Partnerships: Public-private partnerships can make financial education accessible and attractive. By using technology, it is possible to cast interactive sessions and impart practical, real-life skills to a broader audience, regardless of their location.

A Call to Action for all of us: It is now time to recognise financial literacy as an indispensable part of our journey towards education and the economic boom of India. Financial literacy, more than a skill, should be regarded as a strategic enabler to achieve personal growth. Through the infusion of financial education across all levels, which range from classrooms to boardrooms, we can unleash a superpower that will help our population bloom and lead us into the 21st century.

(The writer is founder and CEO of StockGro. views are personal)

STATESMAN (P-6), 06 DECEMBER 2024

Student Uncertainty

As the United States prepares for a new presidential administration, uncertainty looms over the future of its immigration policies. For international students, particularly the large and growing population of Indian students, the stakes are high. Concerns about potential travel bans and policy changes have resurfaced, bringing back memories of previous disruptions caused by sudden executive orders. These developments call for a deeper examination of the vulnerabilities in the global education ecosystem and the resilience required to navigate such challenges. Indian students have long been a vital part of the US academic landscape, contributing not only to the economy but also to the intellectual and cultural diversity of institutions. With their numbers surpassing those of Chinese students in recent years, they represent a demographic that is both significant and deeply invested in the American education system. However, this reliance on the US as a primary destination for higher education also exposes them to geopolitical risks. The potential for abrupt policy shifts, particularly around immigration, underscores the fragility of their position. American universities, aware of the precariousness of the situation, are taking proactive measures to safeguard their international student communities. Advisories urging students to return before potential policy changes reflect a commendable commitment to protecting their interests. However, these steps also highlight the reactive nature of responses to such crises. For a country that positions itself as a global leader in education, the lack of consistent and inclusive immigration policies sends mixed signals to the international community. The current situation also highlights the urgent need for clear communication and contingency planning by universities and governments alike. Institutions must prioritise transparency in addressing students' concerns, ensuring they are well-informed about potential risks and their rights. Governments, on the other hand, must strike a balance between national interests and the global nature of higher education by enacting policies that promote stability and inclusivity. For Indian students, this moment is a reminder of the importance of diversification. While the US remains a top choice, it is increasingly clear that sole reliance on one destination is fraught with risks. Other nations with stable immigration policies, such as Australia and certain European countries, present viable alternatives. Diversifying educational choices can mitigate the impact of geopolitical shifts and ensure that students' aspirations are not derailed by external uncertainties. At the same time, India must strengthen its role in addressing these challenges. Diplomatic efforts to advocate for the rights of its nationals abroad are crucial, but so is the need to develop robust higher education systems at home. By investing in world-class universities and creating an environment conducive to research and innovation, India can offer competitive options for students who might otherwise look abroad. The situation serves as a wake-up call for all stakeholders – students, universities, and governments alike. For Indian students navigating this uncertain landscape, resilience and informed decision-making will be the key to securing their future in the global academic arena.

HINDUSTAN TIMES (P-16), 07 DECEMBER 2024

Case for a quiet, well-lit, free space to read, reflect

The Khirki branch of Delhi's Community Library Project is filled with books for people of all ages, provides computers with internet for those who lack access at home, offers story time and literacy programmes for children, and offers evening-hour operations to working people who need a quiet place to read and work when homes are loud and crowded. Like many public libraries in the United States (US), Khirki also responds to material needs beyond the book, offering clean drinking water, washrooms, and even food — bananas in the morning, biscuits in the afternoon — to address the gap in access to basic human necessities produced by systematic and longstanding disinvestment in the people by the governments we elect.

Emily Drabinski

All this good work is underpinned by a singular structural commitment – the library is free. It is free to use and free to join. Book borrowing is free. Computer use is free. Water and food are free. Anyone can walk through the gates into the vibrant courtyard and use the library. The Khirki community library serves the public. That public must include everyone if it is to live up to its purpose. When libraries charge fees, their use becomes restricted to the subset of people who can afford to pay. When libraries limit use by gender, race, class, religion or caste, they cannot, in any meaningful sense, be called public. When libraries are impossible to access due to distance or disrepair, only the people who live nearby, and who can afford transit fares, are served. In each case, a public good — the library — is privatised, limiting its use only to those who can afford it.

When we call a library public, we mean that the library belongs to the people, all of the people. If it is to belong to all of the people, particularly and especially in the context of economic inequality and other forms of discrimination, the public library must be free. Any imposed cost is an exclusionary barrier.

Appeals to charge fees take two forms. First, some argue that libraries are expensive, and, therefore, users must contribute to the funding of these institutions. It is true that libraries have costs, from the buildings and land they occupy to the book and journal collections that only get costlier as publishers consolidate across the United States (US) and Europe, extracting increasing profits from institutional and individual buyers. The question is who should pay these costs. Public goods are paid for with public money. We don't ask individuals to cover the costs of parks or public schools. These are understood as things that benefit everyone; so, we pay for them through the public purse. Libraries should be no different.

Others argue that charging fees promotes personal responsibility. When we ask users to pay for library service, some say that they will take greater care of the books they borrow. Such an argument imagines that monetary exchange is what produces a sense of commitment to us and each other, when it is the opposite that is true. We value and care for what belongs to us, what we understand to be our own. Our children receive our best attention not because of what we pay for their food and clothing but because we see them as a part of who we are. The public library belongs to those who are invited and welcomed through their doors. If such libraries are to be valued by everyone, they must be open to everyone. This requires abolishing exclusionary measures, including fees for service.

The public library must be free. Any imposed cost is an exclusionary barrier AFP

Since the late 19th century, libraries in the US have enjoyed broad support for their public mission. Very few charge fees for service, and the vast majority work every day to expand their offerings to the public. In New Lebanon, New Hampshire, a library circulates garden beds each growing season and a seed library that ensures public access to food and flowers. In Donnelly, Idaho, a library circulates a cotton candy machine — an example of decommodification, the making public of a commonly private good — so that every child in this community that faces ever-deepening poverty can enjoy a birthday party. In Brooklyn, New York, libraries host monthly dinners for people returning from incarceration, providing free access not just to food but to fellowship.

But, as Angela Davis, the great American activist and author, reminds us, freedom is a constant struggle. Encroachments by capital threaten our ability to do our work. Our fundamental commitment to the public guides our organising against these threats. The movement to protect and expand access to the public good must be a global one. At the heart of this struggle are the library workers whose daily labour expands access to reading and literacy, to quiet and well-lit spaces, to a sense of community and camaraderie that can be more and more difficult to access as our elected officials divide us and then exploit those divisions for private profit.

As we work toward a future where all are meaningfully included in public life, the public library manifests that future in the present. Through those gates in Khirki and through the doors of my home library, the Windsor Terrace branch of the Brooklyn Public Library, we can find the world we want and the world we need, a world in which all of us and our libraries, are free.

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7/12/24

TIMES OF INDIA (P-20), 08 DECEMBER 2024

Big learning gaps but bright spots emerge

SWAMINOMICS

SWAMINATHAN S ANKLESARIA AIYAR

Indian school education is in quite a terrible state. Research studies have revealed high absenteeism, and barely half the teachers were actually teaching at the time of surveys. The Annual State of Education Reports show that students in class 5 cannot read a class 2 text or do simple mathematical sums. Central and state govt have poured more money into education in the last two decades. But despite higher outlays, higher teacher-pupil ratios, curriculum changes and NGO efforts, ASER outcomes have not improved significantly in the last decade.

In 2009, India participated in the Programme for International Student Assessment (PISA) school rankings. These evaluate how 15-year-old school children perform in science, maths and reading. It came 72 out of 74 countries, a result epitomising its education system. India's reaction was to stop participating in PISA! Then in 2021, a decision was taken to start competing again in PISA contests. But Covid intervened, and nothing further happened.

Given this state of affairs, it is a pleasant surprise to find that two Indian schools have been adjudged 'best school in the world' by T4 Education, a low-key but respected international institution. T4 Education gives awards for five categories corresponding to UN Sustainable Development Goals —community collaboration, environmental action, innovation, overcoming adversity, and supporting healthy lives. For 2024, Ryan International School, Vasant Kunj, New Delhi, won best school award for environmental action. CM Rise Vinoba Bhave School in Ratlam, MP, won the award for innovation. In addition, Kalvi International Public School, Madurai, was voted the best school to work for.

T4 Education says it aims to create the biggest community of teachers and schools in the world, sharing innovations and proven best practices. It claims membership of over 200,000 educators in 165 countries. It champions change and innovation, fostering collaboration and diversity for educational excellence. Similar pledges are made by thousands of politicians, bureaucrats, and school principals, but such lofty aims usually fail in India.

What are the credentials of T4 Education and how seriously should we take its awards? It was founded by educationist Vikas Pota following the Covid-19 pandemic and the toll it took on education across the world. He is one of the Young Global Leaders chosen by the World Economic Forum. He serves on multiple education boards in countries ranging from Jordan to India to the UK. The Dell Foundation has publicised the recent T4 Education awards. It also partnered MP govt in CM Rise schools, a project to create 10,000 high-quality govt schools by 2030 with the help of private partners. According to the Foundation's programme manager, CM Rise schools have outperformed other state schools by approximately 10% in language and math assessments. They achieved an 11% higher pass percentage and 12% more first divisions in grade 10 and 12 state board exams, and increased the percentage of first division students in grade 10 from 32% in 2022 to 50% in 2024.

CLASS IT UP: One of the awardees was a CM Rise school in Ratlam. Good govt schools providing decent education can be a game-changer

Many educational initiatives in the past have claimed promising early results but failed in the medium term. It is so difficult to create even one quality school that the target of 10,000 quality schools looks like a stretch. A recent news report said that CM Rise schools in Bhopal had underperformed some other govt schools. Let us wait and watch before getting euphoric.

The awards clearly have a selection bias, with Indian schools getting disproportionate coverage. Only a fraction of world schools took part, and none of the world-famous ones. So, the awards are a way of encouraging participating schools rather than establishing global supremacy. Still, when we have so much unwelcome news about the quality of our schools, the winning of some international awards is worth one cheer if not three.

We are not on the cusp of an educational revolution. But here and there, some bright spots are emerging.

Quality has long been established in some eminent private schools in India. This helps produce a thin veneer of world-class students even while the masses remain terribly educated. Central Kendriya Vidyalayas provide good education, because the parents are influential civil servants who ensure accountability of teachers to parents. This is not the case with most state govt schools. These are of such poor quality that many poor families take their children out of free govt schools and put them in expensive private schools even though these often have questionable credentials.

Hence, it is heartening that one of the awardees of the T4 Education prizes was a govt school in MP. No country has ever prospered without good govt schools providing decent education for the masses. Hopefully, we have made a start. ■

STATESMAN (P-7), 09 DECEMBER 2024

Can ONOS transform Indian research?

AMIT MITRA AND
SOURYABRATA MOHAPATRA

India's research ecosystem stands on the cusp of a seismic shift with the impending rollout of the One Nation, One Subscription (ONOS) scheme, a Rs 6,000-crore initiative aimed at dismantling the long-standing barriers to accessing global academic resources. Boasting the promise of providing 13,000 international journals to over 6,300 institutions and nearly 18 million researchers and students, ONOS seeks to upend the narrative of restricted knowledge, which has long hampered Indian academia. Yet, amidst the applause, one cannot help but ask: can this scheme genuinely revolutionize the Indian research landscape, or will it remain another incomplete policy, leaving many behind?

The promise of ONOS is indeed significant. For institutions that currently cannot afford subscriptions, this initiative has the potential to level the playing field. It aligns with India's growing aspirations to enhance its research output, which saw a 54 per cent rise between 2017 and 2022, more than double the global average of 22 per cent. India now ranks fourth globally in terms of research publication volume, producing over 1.3 million academic papers. However, this numerical achievement is tempered by the quality and impact of the research. India lags behind in global citation indices, ranking ninth in the world, well below peers like China, the US, and the UK. This disparity raises critical questions about the accessibility and visibility of Indian research - a problem that ONOS can address, but only partially.

The scheme's reliance on centralized access assumes that all institutions have the means to effectively utilize these resources. For elite institutions like the IITs, IISc, and AIIMS, which already have access to premium journals, ONOS offers a cost-saving advantage. However, for colleges and universities in tier-2 and tier-3 cities, the challenges run deeper. These institutions, often operating with meager budgets, lack not only access to journals but also the research infrastructure, training, and funding to conduct impactful studies.

India spends only 0.7 per cent of its GDP on research and development, compared to the global average of 1.8 per cent. This figure is alarmingly low when juxtaposed with China's 2.2 per cent and Israel's 4.9 per cent, signalling a deeper systemic neglect of R&D. Without parallel investments in research capacity and infrastructure, merely providing access to journals may not be enough to bridge the gap between top-tier and under-resourced institutions.

Moreover, the ONOS scheme raises another critical issue: the uneven focus on STEM (Science, Technology, Engineering, and Medicine) disciplines. While it will undoubtedly benefit researchers in these fields, the humanities and social sciences remain an afterthought in India's research ecosystem. These disciplines already suffer from poor output and global visibility. For instance, in 2020, India produced 26,127 gold open-access (OA) articles, predominantly in STEM fields, while research in social sciences and humanities barely made a dent in global databases. This neglect is exacerbated by the lack of funding for humanities research, further marginalizing disciplines crucial for understanding societal issues. Can ONOS truly address the inequities across disciplines, or will it reinforce the STEM-centric nature of India's research priorities?

The problem extends beyond subscription access to the publication process itself. In the age of open-access publishing, researchers face

significant financial barriers. In 2020, Indian authors paid a staggering $17 million in Article Processing Charges (APCs) to publish their work in open-access journals. This represented more than half of the $30 million spent globally, with health sciences alone accounting for $7 million of the total. These costs are predominantly borne by researchers themselves, as most Indian institutions lack dedicated funding mechanisms for APCs. This contrasts sharply with developed countries where national policies often subsidize such expenses, ensuring that research remains accessible to global audiences. Without similar support, Indian researchers struggle to disseminate their work widely, further limiting its impact and citation scores.

Even for STEM researchers, APCs pose a significant burden, but the humanities and social sciences are hit hardest. Journals in these disciplines often lack the funding and market size to adopt sustainable open-access models. As a result, Indian research in these fields remains confined to limited local publications or locked behind expensive paywalls, accessible to only a few. This creates a vicious cycle: without global visibility, Indian social science research struggles to attract citations, funding, or recognition, perpetuating its marginalization.

India's education and research funding landscape amplifies the challenges ONOS seeks to address. Allocating just 3.85 per cent of its GDP to education - well below the global average of 4.22 per cent and far behind Cuba's 12 per cent - India underfunds a system where over 50,000 colleges and 1,100 universities struggle with uneven quality, particularly in rural areas. Research funding faces no better, with Rs 2,985 crore spent on journal subscriptions between 2019 and 2022, largely benefiting elite institutions while leaving smaller colleges and researchers behind. This imbalance stifles innovation and limits equitable access to knowledge.

While ONOS is a step forward, it is no panacea. Addressing systemic barriers - like inadequate funding, exorbitant APC costs, and the neglect of humanities and social sciences - is critical. Without national APC funds, open-access mandates, and investments in underrepresented disciplines, India's vision of global research leadership by 2047 risks becoming a pipe dream. Will ONOS empower all or widen existing gaps? The answer lies in what comes next.

(The writers are associated with the National Council of Applied Economic Research, New Delhi. The views are personal.)

Salil Sahadevan

Away with the bell

Can we (re)design timetables to take into account the rhythms of students' bodies and minds?

GETTY IMAGES/ISTOCKPHOTO

You know that kid who stares blankly at the timetable grid while filling the school bag for another day of routine? School timetables, like the ringing of the bell, signal a rigidity that suggests time is an absolute and physical entity. But that is not how learning happens. Educational time is fluid, a subjective experience influenced by an individual's emotional states. Unlike the standardised time in a timetable, learning opens uniquely for each student, a reality that traditional timetables often fail to accommodate.

Symbol of structure

Originally, bells were introduced to manage time and ensure punctuality; a symbol of structure and efficiency in western thought. As time passed, the bell came to segment the day into periods, allowing convenient transitions from Math to Language to Biology, and finally freedom in the evening. The school bell – much like Pavlov's bell used with dogs – conditions behaving, though with good intentions. John Taylor Gatto described this regimented approach as a prison of measured time. What if we consider the biological clocks of students and design the schedules differently?

Eastern educational traditions take a different approach to time. Instead of mechanical devices, these systems wove time with natural biorhythms. The rising sun, the movement of leaves, or an animal call guided daily schedules. An inner awareness of the individual learner and educator alike was connected to the cycles of Nature. While it sounds overly idealistic for us today, it presents an opportunity to reflect on how we can cultivate an intuitive, self responsible, personalised learning experience that respects the natural rhythms of learners.

Our internal biological clocks – known as circadian rhythms – govern our sleep-wake cycles and energy levels. By understanding these rhythms, educators can design schedules that fit learning activities to match periods of peak alertness and engagement.

Similarly, studying sleep cycles – the distinct stages we experience during the night – offers insights into memory consolidation and cognitive function. For example, adolescents display different sleep patterns and energy levels compared to younger children and adults. Education researchers can track these rhythms through self reporting, melatonin level measurements, and observation. By adjusting learning experiences to these individual rhythms, students are not merely present, but truly ready for optimal cognitive performance.

Our sense of time is not just personal; it affects how we learn too. Waiting for someone we care about can change how time feels. In the same way, looking forward to a learning project can either make us more interested or more anxious.

When institutions blend subjects into themes for interdisciplinary learning, flip the class for self-learning, and design for competency-based learning, they need a flexible approach to time, timing, and timetables.

Why should schedules be personalised to reflect individual energy levels and circadian rhythms? While traditional timetables value efficiency, elevating student engagement to a primary goal is equally essential. Identify peak learning times or power hours for each student. Cluster those with similar patterns to create bi-flex timetables. Such experimentation may lead to initial chaos.

In a connected world of constant learning, rigid instructional hours have become obsolete. Adaptable schedules are key to untangling the learning potential of every moment. They also come with uncertainty, scalability challenges, and difficulties in implementation. Still, they are worth piloting because the idea of habits of mind and habits of body have futuristic implications on how we teach and learn.

Learning over time

Philosophers and scientists agree that, at the quantum level, time is not necessarily continuous but granular. This supports breaking down learning into smaller, manageable chunks with opportunities for more reflection. As time is a matter of perspective, not rigid measurement, we should shift from measuring performance at specific moments to appreciating the ongoing journey of learning.

We invest heavily in time – the scarcest resource – to enable learning. Yet, how that time is used often receives less attention. Not all learning moments hold the same value; disengaged time equates to lost time. So, the ideal timetable will be characterised by hybrid models, bi-flex, small group approaches, and clusters of circadian rhythms, all supported by continuous reflection and feedback. These new forms of timetables are less about time and more about minds that learn.

Views expressed are personal.

The writer is Deputy Secretary, University Grants Commission, and a Learning Designer.

HINDUSTAN TIMES (P-14), 10 DECEMBER 2024

Why children in schools take to physical violence

What made a 12-year-old strangle his classmate over a minor incident in New Delhi? In another city, a class monitor, in his enthusiasm to maintain discipline in the classroom, kicked a student in the groin who succumbed to his injuries on the way to the hospital. A child was bludgeoned by his schoolmate following a minor fight. Two students killed several classmates and a teacher in another part of the world.

Children involved in these incidents may be geographically far apart, yet the desire for violence among them seems identical and alarmingly on the rise. From no-holds-barred movie and book scenes to acts of violence viral on social media, from aggressive role models to facing aggression at home, schools, or the playground, there are many factors through which society has normalised violence. We have helped desensitise our young to the pain of others and the fallout of conflict occurring around them.

Ameeta Mulla Wattal

Was brutality a part of the childhood of the perpetrators of violence? These acts and more throw a spotlight on fragmented family structures and the lack of educational institutions' investment in the well-being of their students.

Today, social integration, mental health and emotional well-being have to be integral to schooling, but, for too many boys and girls, school is where they experience violence, bullying, harassment, verbal abuse, and sometimes exploitation, at the hands of peers or teachers or even the inscrutable school authority. Every child has the right to go to school free from fear. In the best circumstances, schools should put children on the path to a promising future.

The learning landscape in metros is dotted with steel, glass, and concrete structures with manicured atria and centrally air-conditioned environs that can put a five-star hotel to shame. If the brand has worked in the eyes of the parent, what actually happens behind the walls is seldom examined.

At the heart of all schooling lies shared meaning, engagement, and understanding. This is the collective dialogue which the child internalises and turns into a personalised monologue of empathy and compassion. As parents and educators, we must remember that challenging behaviour does not happen overnight. Children cannot identify or communicate disruption in the manner that adults do. Their anger often rises from fear, defiance from manipulation, and violence from anxiety, a result of a damaged connection between the adult world and that of the child and her/his peers.

School is where a child builds an internal monologue of empathy and compassion AFP

Education has become extremely aspirational. This has resulted in ghettoisation in schools as classrooms become challenging spaces with students from varying social, cultural and economic backgrounds, sometimes with the baggage of single/divorced parents, domestic violence, or some other familial factor. A plethora of behavioural issues result from such social contexts. This has created both interdependence and insecurity. It has led to the strong and weak, the majority and minority, the rich and poor feel equally threatened by the other.

We continue to focus on embedding the three R: Reading, wRiting, aRithmetic because we intrinsically believe that this will get our children the livelihoods that we desire. We never stop to worry that our children can't relax, cope with anxiety, aggression, and envy, are unable to express tenderness and trust, and have no understanding of who they are or even that they have a self to find. If the basic skills are not empathy, resilience, compassion, relationship building and reflection, then schooling is doing nothing for a child's health, happiness, sanity or survival.

The recent incidents are not merely tragic; they are a loud alarm that we can't silence. Schools and homes have to go much beyond what they are today. Teachers have to be trained to identify early signs of aggression and distress so that they can intervene before violent emotions manifest themselves. Social-emotional learning needs to be integrated into every aspect of the curriculum, and not be offered as just an optional area. Homes need to be spaces of understanding with healthy responses and active listening to nurture emotionally resilient children.

We need to engage children through the dignity that is in them. Our basic mission as parents and teachers is to acknowledge and work with it. Most children at any age seem challenging and disruptive at times. We need to understand the reasons behind their behaviour.

The lack of a robust emotional vocabulary often leads children to express frustration through physical means. Without tools to articulate their struggles or a safe space to share their pain, they lash out. This raises difficult questions: Are we, as a society, raising children to see violence as an acceptable way to resolve conflicts? Are they mirroring the aggression they see in their homes, schools, media, or from the adults they trust? Can we go beyond another headline and make these tragic incidents a turning point in the way we envision the future of our children?

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PIONEER (P-7), 10 DECEMBER 2024

The imperative of continuous learning in India's AI-driven future

The rapid growth of AI, has intensified the demand for skilled professionals. Yet, a stark talent gap threatens this progress

SUMIT SHUKLA

Technology has become an integral part of our daily lives and work, making continuous learning essential to stay relevant. The rapid adoption of automation and advanced digital technologies, such as artificial intelligence (AI), is not just transforming industries but also reshaping the skills employers expect from their workforce. By 2027, it is projected that 50 per cent of engineering roles will require employees to undergo training and development to meet the changing demands brought about by AI advancements, according to Gartner.

In India, the demand for skilled professionals in technology-driven fields, especially AI, is growing significantly. Reports by BCG and NASSCOM indicate that the AI market in the country could grow to $17 billion by 2027, with an annual growth rate of 25–35 per cent. However, this growth is accompanied by a stark shortage of experts in advanced technologies. NASSCOM estimates that over a million skilled engineers specialising in AI and related technologies will be needed in the coming years. Alarmingly, the talent gap could rise from 25 per cent to nearly 50 per cent by 2026, emphasising the critical need for skill development among both new graduates and experienced professionals.

One significant challenge is the disconnect between formal education and the practical skills required in the job market. Every year, approximately 1.5 million engineering graduates enter the workforce in India, yet only a fraction secure jobs aligned with their field of study. This mismatch is not due to a lack of opportunities but stems from the gap between the theoretical knowledge imparted in academic institutions and the hands-on skills sought by employers. Beyond technical expertise, companies now prioritise candidates with interpersonal skills and emotional intelligence, essential for thriving in collaborative and dynamic work environments.

The India Skills Report 2024 highlights this concern, noting that while some states, such as Telangana, have made strides in job preparedness among the 18 to 23 age group, critical skill gaps persist. For roles reliant on AI and emerging technologies, the gap ranges from 60 per cent to 75 per cent. These statistics underscore the urgent need for educational institutions to revamp their curricula to better align with industry demands.

Updating academic programmes is vital to bridging this gap. Universities and colleges must incorporate industry trends and practical learning experiences into their courses. Today's workforce needs to think critically across disciplines and understand the broader implications of technology on economic, social, and cultural contexts. Flexible and continuous education plays a pivotal role in closing the divide between academic knowledge and the realities of the job market.

Digital learning platforms offer a promising solution in this context. With over 50 per cent of Indians actively using the internet, online education provides accessible opportunities to acquire new skills. EdTech platforms specialising in skill enhancement allow individuals to enroll in tailored courses and programmes, preparing them for rapidly evolving job landscapes.

The benefits of continuous learning extend beyond career advancement. Employees who are adaptable and committed to enhancing their knowledge contribute to organisational innovation and help businesses navigate shifting market dynamics. For instance, as AI becomes more integrated across industries, the demand for experts in these technologies will continue to rise. Forward-thinking companies are already investing in employee training programs to stay competitive and ensure their teams are equipped to handle emerging challenges.

Despite these efforts, many traditional educational institutions struggle to meet industry needs. Relying heavily on lecture-based teaching, these institutions often focus on theoretical knowledge at the expense of practical skills. Students have limited access to industry-standard equipment or opportunities for hands-on problem-solving, leaving them ill-prepared for the workforce. Integrating real-world applications into academic learning bridges the gap between theoretical instruction and practical expertise, ensuring graduates are ready to meet employer expectations.

Upskilling is not just about addressing current deficiencies—it involves cultivating a mindset of continuous improvement. In a world where industries evolve rapidly and the shelf life of skills is shrinking, professionals must adapt to new technologies and methodologies quickly. Skills once considered indispensable can become obsolete within a few years, making the ability to learn and relearn critical for success in today's professional environment. For individuals and organisations alike, embracing continuous education is a strategic move to navigate the present and excel in the future.

(The writer is CEO at Scholarz. Views are personal)

TIMES OF INDIA (P-18), 10 DECEMBER 2024

UGC Is Chasing 'Flexibility' In A Blind Maze

40% Indians hold jobs for which they're undereducated, 13% with advanced degrees remain jobless. Adding 'options' doesn't fix the gulfs between choosing a course, getting a degree & landing a job

Chandrima.Banerjee @timesofindia.com

Those not chronically online may have missed this. But last week, an innocuous post by a University of Cambridge academic announcing she had completed her PhD became an astonishing source of outrage for far too many people. The problem? The subject of her thesis – *Olfactory Ethics: The Politics of Smell in Modern and Contemporary Prose*.

Trolls had a lot of questions. Why say 'olfactory' and not simply 'smell'? Don't 'modern' and 'contemporary' mean the same thing? (They don't.) And who even studies smell? By now, the post has had over 100mn views, what started with mockery had turned into death and rape threats. Why this disproportionate rage? Anti-intellectualism, a lot of people commented. But it is more than that. It is the culmination of a neoliberal fallacy – where the purpose of study is judged by its market value. Is it that different in India?

What's the UGC proposal? | The buzzword of University Grants Commission's recent draft regulations seems to be 'flexibility'. It *should* mean progress in how higher education is seen and structured. If the draft goes through, students will be able to seek admissions twice a year, rejoin courses they may have left, complete courses quicker than usual or slower than usual, pursue two UG or PG programmes simultaneously and – most importantly – be eligible for courses without a background in those specific disciplines. That means a significant amount of openness and choice for students in planning their education.

But besides the immediate questions about capacity and infra to actually see this liberalisation through, the *laissez faire* approach leads back to the important question about purpose.

In India, it might be too late (and sometimes misguided) to make a case for students simply following through on what genuinely interests them. Without generational wealth or an ecosystem that supports people in working on what they are drawn to, aptitudes and passions are often best left for the privileged to explore. Data from the latest All India Higher Education Survey bear this out.

What does it mean for underprivileged students? | How many students from SC and ST communities complete degrees in art education? 8%. Interior design? 3%. Visual arts? 4%. In which courses do students from SC and ST communities account for the largest share? Those which prepare them to become medical lab techs and nurses. If the choice of disciplines is still dictated by social background, flexibility may not always mean choice – not for everyone.

Besides, shifts in the choice of subject do not always follow straightforward supply-demand logic. For instance, when Unesco data show that the most dramatic surge in India has been in arts and humanities graduates (while social sciences plummeted) – from 6% of college degrees in 2020 to 29% now – it might seem like a translation of growing interest. But as academics have pointed out, expansion in humanities in India has historically been more about how inexpensive it is to create more 'seats' than about a commitment to the interrogative ideals of humanities.

Is faith in college degrees misplaced? | India places a lot of faith in the value of a college degree, and having one – even if it is mismatched to skills or interests – is believed to be better than not having any formalised certificate of study.

It's not going too well, though. Because what comes after actually getting the degree is even more confounding. ILO data show that less than 40% of Indians are engaged in work that matches their education level – India, at 124, is one of the lowest in this ILO list of 145 countries. A little under a quarter of Indians hold jobs for which they are overqualified. But many more hold jobs for which they are undereducated – 40%, one of the highest shares in the world.

There *can* be a surge in undereducated workers when there are more high-skill jobs than high-skill workers. But that is clearly not the case in India, unlike developed economies like Australia and Israel where high-skill jobs make up the largest share. In fact, the share of high-skill jobs in India has dropped from 17% in 2018 to just under 12% now.

Who's doing India's high-skill jobs? | Not just people with college degrees. About 60% of high-skill jobs are held by people without advanced degrees – and about half of them are people with primary or lower secondary education.

Obviously, job mismatches are not degree-to-work anagrams, which simple rearrangements can resolve. But the scale of these incongruities means that India simply doesn't know what to do with its educated workforce. Even though just one-third of Indians who are of college-going age actually go to college – that share is about 80% in US and UK – 13% of Indians with advanced degrees remain unemployed, one of the highest shares in the world. In US, that share is 2.8% and in UK, 2.7%.

Flexibility is great. But what would India do if every college-age student actually signed up for a degree?

10/12/18

Calvin & Hobbes

Sacred

ASSAM TRIBUNE (P-6), 11 DECEMBER 2024

Striving for excellence, inclusivity

PROF RAJENDRA PRASAD DAS

The Krishna Kanta Handiqui State Open University, committed to empowering learners to realize their dreams, shines as a beacon of hope and progress.

The Krishna Kanta Handiqui State Open University (KKHSOU), the only state open university in Northeast India, is celebrating its 19th foundation day on December 11. Established under the KKHSOU Act, 2005, the University has emerged as a beacon of hope for learners seeking higher education, irrespective of age, academic background, or geographical constraints. Guided by the motto, 'Education beyond barriers,' the University has become synonymous with accessible, flexible, and quality higher education in the region. With the dedicated collaboration and support of its diverse stakeholders, the University has been steadfastly advancing its mission to provide accessible higher education across the State, overcoming numerous challenges along the way. On this auspicious day, let us reflect on the remarkable progress and achievements the University has accomplished in recent times.

The University has made significant strides in aligning its academic programmes with the National Education Policy (NEP), 2020, setting an exemplary standard for other institutions. In July 2023, the University achieved a historic milestone by becoming the first open university in India to introduce a Four-Year Undergraduate Programme. The UG programmes incorporate ability enhancement courses and skill enhancement courses such as Environmental Education, Yoga, Life Skills, and Indian Knowledge Systems (IKS), embodying the holistic educational vision of NEP 2020.

The University has established the Banikanta Kakati Centre for Indian Knowledge System to preserve and promote India's rich cultural and philosophical heritage. To meet the diverse needs of learners, the University introduced new PG programmes in Mathematics, Philosophy, Hindi, and History in July 2024.

From the next academic session, the University plans to introduce new PG programmes in Bengali, Sanskrit, Yoga, and Public Administration, BLIS as well as various vocational courses. These initiatives underline the University's commitment to broadening its academic horizon. At present, the University offers 51 different levels of programmes, including PhD. The University has also made impressive progress in the implementation of the Academic Bank of Credits (ABC), recording over 70,388 learner registrations to date.

The University's proactive admission campaigns across the State and support initiatives have contributed significantly to increasing Assam's Gross Enrolment Ratio (GER) in higher education. The University successfully enrolled nearly one lakh fresh learners over the past two years, reflecting its dedication to expanding access to education. This cohort demonstrates remarkable diversity, with 51% comprising female learners; indicating significant strides in promoting gender equality. Additionally, 82% of the learners come from rural areas, showcasing the University's strong outreach to marginalized communities. Among them, 19.61% are in-service professionals pursuing education alongside their careers, 15% belong to the BPL category, and 3% are from the EWS, underlining the University's commitment to socio-economic inclusion. Furthermore, 16% are from SC/ST communities, 46 are jail inmates seeking rehabilitation through learning, and 1,109 are PwDs, emphasising the University's focus on inclusivity and empowerment. Presently, the University has 1,84,000 active learners, studying in various academic programmes of the University. The University alone contributes almost 11% of the total enrolment in higher education in the State.

Ensuring optimal learning environments for enrolled learners, the University has established 4 Regional Centres (RCs) and 333 learner support centres (LSCs) across Assam, including 30 jail study centres. With the help of these RCs and SCs, the University offers a robust support system through both physical and online services. The University study centres located in provincialized colleges and State universities of Assam serve as physical contact points for learners, where thousands of academic counsellors provide all sorts of administrative, academic, and personalized support to the learners studying in a unique mode of education. Further, the University provides all sorts of online support to learners using different digital tools, social media platforms, and its own LMS. As a result of these efforts, in the recently held UGC-NET (June 2024) Examination, 52 learners from the University successfully cleared the examination. This success is a testament to the high-quality teaching and learning processes maintained at the University.

With a dedicated Centre for Online Education and an advanced Electronic Media Production Centre, the University has undertaken significant initiatives to enhance e-content development and the online teaching capabilities of its faculty members. To build the capacity of faculty, the University has regularly collaborated with renowned national institutions like IGNOU, CEMCA, and NIEPA, inviting experts to train its academic staff for e-content development, MOOCs development, and blended learning. As a result, faculty members of the University have successfully developed 22 MOOCs for the SWAYAM platform in the last four years. Faculty members have also created a large volume of e-content for UG and PG programmes. Moving forward, the University is set to expand its offerings by launching online PG programmes by 2025, ensuring greater flexibility and accessibility for learners across diverse regions.

The University is committed to advancing vocational education and enhancing graduate employability. Aligning with the vision of the NEP 2020, which targets providing vocational education to at least 50% of learners by 2025, the University has undertaken several transformative initiatives. A notable endeavour is a three-year partnership with the Commonwealth Educational Media Centre for Asia (CEMCA). This collaboration focuses on implementing graduate employability frameworks, organizing capacity-building programmes for faculty and staff, and developing graduate-employability-oriented Open Educational Resources and skill-based courses. These efforts ensure alignment between educational outcomes and market demands, fostering a workforce of skilled and employable graduates.

The University is also pursuing recognition as an awarding and assessment body under the National Council for Vocational Education and Training (NCVET). This recognition will enable the University to launch NCVET-recognized vocational courses aimed at empowering youth with essential skills for employment, self-employment, and entrepreneurship, thereby driving socio-economic development in Assam. In another significant stride, the University is set to appoint a Professor of Practice in Agricultural Science, with the goal of transforming its Rani Campus into a hub of agricultural practices. It is worth mentioning that the State government sanctioned a sum of Rs 20 crore this year for the development of the University's Rani campus.

As KKHSOU proudly celebrates its 19th foundation day, it continues to shine as a beacon of hope and progress, committed to breaking barriers and empowering learners to realize their dreams. Together, let us strive to elevate this people's university into one of the premier learning institutions in the country.

DECCAN HEARLD (P-10), 11 DECEMBER 2024

Reform in varsity administration crucial

Karnataka's proposal to amend the Karnataka State Universities (KSU) Act to replace the Governor with the Chief Minister as the chancellor of universities has sparked a heated debate in political and academic circles. According to Higher Education Minister M C Sudhakar, the government seeks to adopt the Gujarat model where the role of the Governor is largely ceremonial, limited to attending convocations. If the amendment is passed, the state government will assume control over appointing vice-chancellors and members of academic bodies, centralising university governance under the chief minister. Historically, the Governor's responsibility as chancellor, was created to ensure university autonomy. Governors, as impartial figures, were supposed to shield higher education institutions from political interference and safeguard academic integrity. However, the growing politicisation of gubernatorial appointments has raised doubts about the neutrality of chancellors. In recent years, non-BJP-led states have increasingly questioned the Governor's role in university administration. As appointees of the central government, the role of Governors in university affairs is often perceived as a tool to further the ruling party's political agenda. In response, the state governments have pushed for reforms to curtail the Governor's influence and restore control to locally elected leaders.

Beyond moves to shift power centres, the focus should be on ensuring institutional autonomy

The proposed amendment in Karnataka has its own merits and demerits. One of the significant advantages is the potential for greater accountability and responsiveness to local needs. The Chief Minister, as an elected leader, is more directly answerable to the people of the state and can be held accountable for decisions related to higher education. However, critics argue that concentrating too much power in the hands of the Chief Minister could compromise the independence of universities, making them susceptible to political pressures. This politicisation could undermine the role of universities as spaces for intellectual debate and dissent. If key academic positions, such as VCs, are filled based on political loyalty rather than merit, the quality of education and the credibility of universities could be jeopardised.

While the amendment has the potential to bring about a more responsive and regionally focussed governance, the concern over politicisation of higher education remains a major worry. This calls for comprehensive reforms in university administration that goes beyond the appointment of VCs. The ideal solution lies in striking a balance between efficient governance and the autonomy of academic institutions. Whether Karnataka's proposed reform achieves this balance remains to be seen, but the debate underscores the urgent need for a more transparent, independent, and accountable approach to university governance. 11/12/24

HINDU (P-10), 11 DECEMBER 2024

Ends without means

While goals of UGC reforms are clear, they need to be backed by resources

The Draft UGC (Minimum Standards of Instruction for the Grant of Undergraduate Degree and Postgraduate Degree) Regulations, 2024 propose significant changes to India's higher education landscape. These include bi-annual admissions to undergraduate (UG) and postgraduate (PG) courses, enabling students from any stream to pursue any discipline in UG and PG if they pass a relevant national qualifying examination, and allowing for the extension or acceleration of courses. Students can pursue multiple degrees simultaneously. Higher educational institutions will have the autonomy to determine student attendance requirements. According to the UGC Chairman, M. Jagadesh Kumar, these changes will remove rigidity, ensuring that global standards are met. While the intent is laudable, one provision further centralises examinations as a qualifying criterion, which may limit flexibility. The draft rules align with the National Education Policy (NEP) 2020, which emphasises hybrid learning models and skill-based education. The draft rules also support the implementation of the National Credit Framework, providing students greater academic flexibility.

However, while the goals of these reforms are clear, the question is whether there are resources to implement such sweeping changes. Hurdles exist as systemic issues such as insufficient faculty strength, underfunded institutions, and a lack of adequately trained or motivated teachers. Moreover, the regulatory framework, such as on class strength requirements, governing affiliated colleges where a majority of the students study, is ill-equipped to support these new rules that may be implemented more easily in autonomous institutions. Since education is on the concurrent list, State governments often show initial compliance with new regulations only to backtrack. The inertia within academic bodies and administrative procedures further complicates the effective adoption of changes such as the 'academic bank of credits'. This initiative allows students to register at one institution, take courses from another, and complete apprenticeships in a company, with the degree being awarded by the first institution. While such flexibility is groundbreaking, it faces considerable resistance from traditional academic structures. Moreover, the success of these reforms hinges on a substantial increase in investment in education. Unfortunately, this year's Budget allocates 15% less funding to higher education compared to the previous year's revised estimates. While the draft UGC rules offer a promising vision, their success will depend on addressing existing systemic challenges and ensuring that there are adequate resources in place.

INDIAN EXPRESS (P-12), 11 DECEMBER 2024

Making her work count

With job creation a challenge, skill training, credit and legal support can enhance quality of self-employment

FARZANA AFRIDI

TWO CHARACTERISTICS OF India's labour force are striking — the low rate of participation of the working-age population in the workforce and the almost stagnant structure of labour force participation. India has a much larger share of workers who are self-employed and a smaller proportion of wage and salaried workers than most other middle-income economies. This structure has not shifted much in decades. The predominance of the agricultural sector and the relative shift towards the services sector, bypassing manufacturing, has a significant role to play in the continued high levels of self-employment. This carries adverse implications for both worker productivity and the quality of work.

Of the working population, over half are categorised as self-employed — almost 60 per cent in rural areas and about 40 per cent in urban areas, with an uptick in this statistic between 2017-18 and 2023-24, particularly in rural areas and for women. There is a stark compositional difference in the self-employment of men and women. For males, the category of own-account worker dominates, while most self-employed women are "helpers in household enterprises". Although the gender gap in the proportion of own-account workers has declined between 2017-18 and 2023-24, the proportion of self-employed females in the category of "helpers" has increased between 2017-18 and 2023-24.

This increase indicates a worrying rise in the informality of work. The criteria used in most economies to define formal jobs — coverage by the social security system; entitlement to paid annual or sick leave, and written employment contract — are missing for the self-employed. Two other features of self-employment are notable — low earnings and significant underemployment. Not only are the earnings of the self-employed barely above those engaged in casual labour, the gender gap in self-employed earnings has increased between 2017-18 and 2023-24, with the gap expanding more in rural areas. This gap is likely worse than reported, given that women are more often engaged in household enterprises and almost all helpers (irrespective of gender) report zero earnings. Second, for both rural and urban self-employed women, the hours of work is very low, at less than 40 hours per week. Therefore, the proportion of workers who are available for additional work tends to be highest amongst the self-employed in rural areas.

The criteria used in most economies to define formal jobs — coverage by the social security system; entitlement to paid annual or sick leave, and written employment contract — are missing for the self-employed. Two other features of self-employment are notable — low earnings and significant underemployment. Not only are the earnings of the self-employed barely above those engaged in casual labour, the gender gap in self-employed earnings has increased between 2017-18 and 2023-24, with the gap expanding more in rural areas.

The majority of self-employment work is also of poor quality and probably a fall-back option when better work opportunities are unavailable, particularly in rural areas and for women. What are the constraints to improving the quality of self-employed work, either in terms of the nature of work itself or to transition into salaried work?

Low education and skills, poor access to formal credit and legal support stand out as the main limitations. While these impinge on all self-employed workers, they are often particularly binding for self-employed women.

Education and vocational training: The proportion of self-employed with grade XII or above education was only 17 per cent in 2017-18 and has increased only marginally to 20.6 per cent in 2023-24. Education levels are particularly low for self-employed women – 9 per cent of these women had completed high school or beyond in 2017-18, which has inched to just 11.4 per cent in 2023-24. The proportion of all self-employed with any formal or vocational training is abysmal at 3 per cent.

Vocational training can be transforming in enhancing the quality of self-employment and entrepreneurship, broadening choices and expanding work opportunities. There needs to be a conscious attempt to link skill training to entrepreneurship. A recent NITI Aayog report on overhauling ITIs states that "hardly any ITI arranges for tie-ups with financing institutions to make credit accessible to ITI passouts for starting an enterprise. Though the PM Mudra Yojana is open for a range of self-employed people such as small manufacturers or artisans, ITIs so far have not been able to channel any start-up funds for their trainees."

Access to formal credit: Lack of access to formal credit markets limits the size and scope of self-employment, entrepreneurship and the ability to create establishments that generate employment. For instance, 41 per cent of all unincorporated, non-agricultural establishments that employ about 10 crore workers in 2023, operate on a small scale and within household premises, as per the Annual Survey of Unincorporated Sector Enterprises (ASUSE). 5.53 crore of these establishments are Own Account Establishments (OAEs) — they have not employed even one hired worker on a fairly regular basis. This implies that less than 1/5th are Hired Worker Establishments (HWE) that create employment by hiring other workers. Not surprisingly, the annual Gross Value Added per worker, or worker productivity, in OAEs is about 50 per cent of that in HWEs (Rs 1 lakh vs 2 lakhs).

Lack of access to formal credit not only raises the cost of borrowing and reduces the size of available loans, it also restricts the capacity and size of the entrepreneur and her enterprise.

Administrative and legal support: Although the ease of doing business has been steadily improving in India, starting a formal enterprise remains challenging even when the entrepreneur has the technical know-how and access to credit. The administrative and legal landscape is often complex. The WDR 2024 notes that because their time and talent are limited, (firm) owners are compelled to manage firms through their families which inhibits their ability to grow. By some estimates, the lack of professional managerial support could account for 11 per cent of the difference in per capita incomes between India and the US.

Further, access to legal recourse in the event of business disputes is fraught with challenges. Inadequate legal access entails friction in contract enforcement, which lowers the aggregate productivity of establishments. Studies show that the efficiency of courts in India matters for future growth in the formal manufacturing sector. According to the ASUSE, a majority of the unincorporated enterprises that are proprietary or partnerships are run by minorities. Research shows that court quality has a disproportionately larger (negative) impact on the investment decisions of SC-ST entrepreneurs. This further limits the ability of these informal establishments to expand and create employment.

With the creation of jobs continuing to be a challenge, vocational training together with access to credit and legal support can enhance the quality of self-employment and entrepreneurial activity in the country.

The writer is professor of Economics at the Indian Statistical Institute (Delhi) and head, Digital Platforms and Women's Economic Empowerment Programme

INDIAN EXPRESS (P-13), 11 DECEMBER 2024

Speaking for ourselves

Using mother tongue in early learning helps children develop creative, critical thinking and connects them to their roots

DHARMENDRA PRADHAN

BHARATTIYA BHASHA UTSAV, a week-long celebration from December 4, to mark our diverse linguistic heritage and to commemorate the birth anniversary of the revered Mahakavi Subramania Bharati on December 11, is underway in all states and Union Territories. Just a couple of months ago, on October 3, the Union Cabinet, under the leadership of Prime Minister Narendra Modi, made history by conferring the status of Classical Languages on as many as five languages — Marathi, Pali, Prakrit, Assamese and Bengali — thus expanding the ambit of a category that already included six other languages: Tamil, Sanskrit, Telugu, Kannada, Malayalam and Odia. An acknowledgement of Bharat's linguistic heritage, this development makes everyone whose mother tongue is one of these languages immensely proud.

Linguistic pride lies at the core of Bharat's civilisational ethos. According to PM Modi, all Indian languages are national languages, constituting the soul of Bharatiyata. Linguistic diversity strengthens national unity and helps realise the goal of "Ek Bharat Shreshtha Bharat". Each one of our people, therefore, must wear linguistic pride as a badge of honour. The PM exemplified this even on the global stage when he said, "I proudly speak India's languages even at the UN. If it takes a while for the listeners to applaud, so be it." This assertion underscores his commitment to preserving India's linguistic diversity and highlights the value of linguistic pride.

Bharat is a land where multiple languages not only coexist but thrive. It is a living embodiment of the profound sublimity of multilingualism. Our linguistic diversity forms a rich, intricate tapestry, weaving together our national identity while nurturing the country's unity. This cultural strength was eroded under colonial rule. On February 2, 1835, Thomas Babington Macaulay presented a memorandum, known as "Macaulay's Minute on Indian Education" to the Governor General of India, prioritising English over native tongues, with the intention of creating a class of Indians loyal to British interests, alienating generations from their cultural and linguistic roots.

Eighty per cent of Bharat's population identifies itself as non-English, native language speakers. Mother tongue lies at the core of deep learning, because our languages are not just tools of communication — they are repositories of history, tradition and folklore, preserving the collective wisdom of generations and offering a unique worldview. Children, brimming with creativity and emotional intelligence, flourish when their education begins in their native language. A primer in their mother tongue builds a seamless bridge from the home to the classroom, guiding them from "mother" tongue to "other" tongue — transitioning from speaking to writing, vocabulary to semantics, and language to subject comprehension. As Rabindranath Tagore noted, "A child learns to speak not from textbooks, but from his mother." Education in the mother tongue fosters a natural progression from basic understanding to complex thought.

Bharat's linguistic diversity is a treasure-trove of both intellectual and cultural wealth. From the snow-capped peaks of Kashmir to the sun-drenched shores of Kanyakumari, and from the arid expanses of Kachchh to the verdant hills of Kohima, our languages encapsulate the inner essence of our people. Teaching children in their mother tongue not only preserves their connection to heritage but also equips them for the future. By laying down a robust foundation in native languages, we can empower children to master other languages and subjects with greater ease and comprehension.

The National Education Policy (NEP) 2020 embraces this vision. Seeking to reclaim our linguistic heritage, NEP places the mother tongue at the heart of early education, acknowledging that language is not merely a tool for learning but a core component of shaping identity, building confidence and fostering cognitive development.

The NEP 2020 necessitates equitable access to high-quality teaching and learning materials in various Indian languages for greater learning outcomes. It puts a strong emphasis on the fusion of technology with education, particularly in the context of preserving and promoting the nation's diverse linguistic heritage. There have been concerted efforts to create a robust ecosystem for promotion of Indian languages so as to make education inclusive — the Bhasha Sangam programme; Machine Translation Centre of the National Council of Educational Research and Training; the Anuvadini app-based translation of books, including technical books in multiple Indian languages by the All India Council for Technical Education; Augmenting Study Materials in Indian Languages through Translation and Academic Writing (ASMITA) initiative by the University Grants Commission and the Bharatiya Bhasha Samiti.

Besides, the government's groundbreaking initiative to produce primers in 79 Indian languages is a monumental step forward, guaranteeing that children in rural, tribal, and remote areas receive quality education in their native tongues in their early years. These primers, alongside other educational materials, are more than just resources — they are gateways to creativity, critical thinking, and lifelong learning.

Language shapes our thoughts, expresses our emotions, and connects us to our cultural roots. The NEP 2020 heralds a new era, where children can learn in their mother tongue and gradually master other languages. By decolonising our education system, we seek to nurture a generation of thinkers who will not only excel academically but also champion Bharat's rich cultural heritage. This transformation is not merely a policy shift — it represents a cultural renaissance.

As we look to the future, Bharat's linguistic diversity will be a cornerstone of educational excellence and socio-cultural and economic advancement. In this Amrit Kaal, as we pursue a Viksit Bharat agenda, our mother tongues are poised to become powerful vehicles of development. Let us make our linguistic heritage the fulcrum of our progress, as Bharat ascends on the global stage.

The writer is the Union Minister of Education. Views are personal

HINDU (P-8), 12 DECEMBER 2024

Has the government clarified its stance on ONOS?

Why did the 'One Nation, One Subscription' plan invoke criticism after it was unveiled last month?

The Hindu Bureau

The story so far:

On November 25, the Indian government announced the launch of its 'One Nation, One Subscription' (ONOS) plan to improve access to research journals for the country's public education and research institutes. The announcement was accompanied with scant details and brooched widespread criticism from the research community, especially over what was perceived to be its disproportionate expense and lack of support for open-access publishing. On December 11, government officials conducted a press conference in New Delhi that addressed many of these concerns.

What is ONOS's purpose?

When scientists conclude an experiment, they write up their methods and findings and publish it as a paper in a journal. The journal collects, reviews, edits, publishes, and archives these papers as a service to other scholars and the people at large. In exchange, journals levy a fee. Subscription-based journals charge readers a fee to read papers. Some forms of Open-Access (OA) journals, called 'gold' OA, charge researchers to publish their paper. Institutes in India had subscribed to subscription journals through 10 or so consortia within the country. ONOS will replace these consortia as a single window through which all government-funded institutes in the country will be able to access more than 13,000 journals published by 30 major international publishers.

Why did ONOS provoke criticism?

At the time of announcement, a Ministry of Education press release didn't specify which journals would be part of ONOS, how ONOS would be implemented, how its allocation of ₹6,000 crore (for three calendar years) would be spent, and how ONOS would support efforts to make research OA. Experts on the topic also asked whether the allocation for foreign journals could have been used to support domestic publishing efforts instead.

Also it wasn't clear whether ONOS would help scientists pay to publish in gold OA journals or whether these payments – called article processing charges (APCs) – could be discounted.

What was revealed on December 11?

The press conference was attended by officials from the office of the Principal Scientific Advisor (PSA), the Department of Science & Technology, and the Department of Higher Education.

The package: Students and staff at all public institutes will be able to access all papers in the journals participating in ONOS irrespective of their discipline. Negotiations are underway to bring in more journals.

Phases: Joonya Haridason, a scientist at the PSA's office, said the government would implement ONOS in three phases: (i) merge all the consortia and work to facilitate journal access in all public institutes; (ii) expand to include private institutions; (iii) create "universal access" to all citizens "through designated access points at public libraries".

Open access: In a pilot, ONOS would set aside ₹150 crore a year to pay for APCs. The government has also negotiated APC discounts for researchers to publish in certain OA journals. The officials said they are aware of transformative OA models and that ONOS would encompass them as it progressed. As of today, they said, around 65% of papers published by Indian scientists were in subscription-based journals.

Domestic efforts: Officials at the press conference acknowledged the need to support domestic publishers. They said there were five repositories in the country – servers where researchers could deposit digital copies of their papers and where others could freely access them – but that scientists were using them to a less-than-ideal degree. They added that other efforts need to take place, such as "enhancement, promotion, and support of Indian journals" and changes in how institutes evaluate the work of researchers, especially to reduce dependence on journal titles and increase focus on the merit of each person's work.

THE GIST

- On November 25, the Indian government announced the launch of its 'One Nation, One Subscription' (ONOS) plan to improve access to research journals for the country's public education and research institutes.
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MILLENNIUM POST (P-11), 12 DECEMBER 2024

UNITING KNOWLEDGE & PROGRESS: REDEFINING EDUCATION WITH DATA ANALYTICS

DR SANKU BOSE

The integration of learning analytics into education offers a transformative approach to enhancing student outcomes. From personalising learning experiences to identifying gaps in teaching methodologies, learning analytics is emerging as a powerful enabler. Predictive analytics and real-time feedback loops can become essential pillars in ensuring a holistic education system across primary, secondary and tertiary levels. For India, a country with over 270 million school-age children and one of the largest higher education systems globally, the stakes—and the opportunities—are enormous.

When we talk about predictive analytics, we seem to be blind sighted since many of us traditionally believe that such tools are exclusively used in business scenarios from marketing to the stock markets. Yet, this new tool of the digital age can make profound contributions to understanding how our students are faring. Predictive analytics plays a pivotal role in identifying learner needs by analysing historical and real-time data to forecast future performance and potential challenges. For instance, early alert systems implemented in higher education institutions globally have proven effective in identifying at-risk students and enabling timely interventions. This approach significantly reduces dropout rates and fosters an environment where every learner receives the support they need to succeed. This holds true not only for tertiary education but also for analysing trends across primary and secondary education.

Similarly, real-time feedback loops revolutionise traditional education by providing immediate insights into student performance. This continuous feedback enables students to adjust their learning strategies and empowers teachers to tailor instruction dynamically. Research from across the globe indicates that personalised feedback through learning analytics enhances student engagement and academic success, particularly in large classroom settings where individualised attention is challenging to achieve.

We can perhaps appreciate the benefits better if we briefly look at what some countries are doing with these novel technologies. Finland's adoption of learning analytics reflects its commitment to personalised education. Analytics is used to assess student performance in STEM subjects and tailor curricula to address observed gaps. By analysing historical trends and individual learning patterns, educators design interventions that maintain Finland's status as a leader in education. Some institutions, like the University of Turku, through their Turku Research Institute of Learning Analytics are doing seminal work in this field. The digital learning platform developed here, called VILLE has been adopted by more than a third of Finnish schools. This approach underscores how learning analytics can enhance the quality of education, even in traditionally high-performing systems like Finland.

In the US, Arizona State University (ASU) is a pioneer in the use of learning analytics to enhance student retention. ASU employs predictive analytics to identify students at risk of dropping out and implements targeted interventions. These include personalised academic advising and resources tailored to individual needs. As a result, the university has seen a significant improvement in retention rates and a narrowing of achievement gaps across socioeconomic groups. In fact, data from the ASU LearningScale (1:365) project is being made available for researchers across the globe to augment outcomes in learning analytics.

In Australia, the University of Technology Sydney (UTS) has integrated learning analytics into its educational framework to address the challenge of large and diverse classrooms. By using predictive models and real-time data, UTS provides personalised feedback to students, helping them understand their performance and areas for improvement. In a first-of-a-kind initiative, UTS partnered with Acer and Intel to launch an attention analysis programme driven by AI with the aim of establishing a fuller understanding of student behaviour in a classroom setting.

Middle income countries are also making significant strides in integrating learning analytics. In Malaysia, Universiti Teknologi Malaysia (UTM) uses learning analytics to address resource allocation and equity in education. Analytics tools monitor student progress and flag areas requiring attention, allowing administrators to channel resources where they are most needed. Similarly, in South Africa, where educational disparities are pronounced, learning analytics has been employed to optimise limited resources. This has been instrumental in addressing disparities in student outcomes across urban and rural regions, showcasing the potential of analytics to foster inclusivity in middle-income countries.

I strongly believe that India, given our innate strengths with software implementation, can become a leader in innovative approaches to leveraging learning analytics systems. India's push for digital infrastructure through initiatives like the National Digital Education Architecture (NDEAR) provides a foundation for scalable, personalised learning platforms. Schools and universities can use data from Learning Management Systems (LMS) to create tailored lesson plans and interventions for students. Introducing AI-powered tools that provide real-time feedback to both students and teachers can make classroom learning more interactive. Tools like Turnitin, which assess assignments and provide immediate grading insights, or Kahoot, which offers instant feedback during quizzes, can be adapted to Indian classrooms. Such tools can also be deployed in regional languages to ensure inclusivity across India's diverse student base. Mobile apps tailored for rural areas, which work offline or on low-bandwidth networks, can foster a collaborative learning environment. Perhaps this is a challenge that the bustling Indian start-up space can tackle better and more efficiently than in other countries!

> Learning analytics is not merely a tool but a strategy to reimagine education. For India, this means moving beyond traditional rote-learning methods to a system driven by insights, adaptability, and equity

Teachers can benefit from learning analytics that identifies their strengths and areas for improvement based on student outcomes. Training programmes supported by analytics, like the Diksha portal for educators, can be refined to meet specific needs, improving teaching efficacy and student performance. State governments can implement dashboards to monitor school performance, identify trends, and allocate resources efficiently. Tamil Nadu's Education Management Information System (EMIS) is an example of how states can use data for planning and interventions. Scaling such models across India can improve resource allocation in underserved regions.

While the benefits of data analytics are substantial, ethical considerations shall need to be paramount. Transparency, data security, and student consent must be prioritised to build trust. Countries like Canada have introduced stringent policies to ensure data privacy in educational settings. India, too, must develop frameworks under the ambit of data protection laws like the Digital Personal Data Protection Act to ensure the responsible use of student data.

Learning analytics is not merely a tool but a strategy to reimagine education. For India, this means moving beyond traditional rote-learning methods to a system driven by insights, adaptability, and equity. The time to act is now, ensuring a brighter future for our learners and our economy!

The author is the Group CEO of Techno India Group, a visionary and an educator. Beyond his corporate role, he is also a mentor who guides students towards excellence and self-discovery

MILLENNIUM POST (P-11), 12 DECEMBER 2024

CLOSING LEARNING GAPS WITH PREDICTIVE ANALYTICS

Predictive analytics analyses student data to forecast performance and identify challenges that could impact learning

ANINDITA ACHARYA

What if you could predict the future and adjust your choices to match your needs? Today, organisations rely on predictive analytics to understand their target audience and achieve better results. Simply put, predictive analytics uses past data to predict future trends and patterns. For instance, insurance companies use predictive analytics to design personalised and competitive policies while maintaining portfolio stability and profitability. In healthcare, data analytics helps analyse patient records, medical history, demographics, and past hospital visits to create models that predict admissions and readmissions. Similarly, predictive analytics can identify individual learning needs and make education more personalised and effective.

According to Prof Mahadeo Jaiswal, Director, IIM Sambalpur, predictive analytics plays a significant role in identifying learner needs and constructing customised educational experiences by analysing data including past academic performance, engaging in classroom activities and metrics from Learning Management Systems (LMS). It can also help identify areas where a learner excels or struggles by predicting potential challenges or dropouts, through these data faculty can provide timely support and counselling to address issues before they escalate. "These analytics can recommend specifically crafted learning courses that align with each student's career aspiration, ensuring a smooth learning journey. Moreover, predictive analytics are often used to offer instant and targeted feedback, providing learners with authentic instructions to stay on track and improve simultaneously," he said.

Artificial Intelligence (AI) is essential to predictive analytics, enabling the analysis of vast amounts of data to reveal hidden patterns and relationships that traditional methods might miss. AI has become a vital part of various sectors, including education, where its influence is revolutionising teaching methods, student learning, and administrative processes. In administration, AI-driven tools are streamlining tasks like grading, easing educators' workloads, and ensuring students receive prompt feedback.

In fact, predictive analytics also help educators track progress and intervene early to support students at risk of falling behind, admitted Rohit Gupta, CEO & Co-founder, College Vidya. "Learning analytics provides real-time dashboards and predictive insights into student performance. Educators can monitor attendance, participation, and grades to identify at-risk students early. Timely interventions, such as personalised coaching or additional resources, can then be implemented to help these students get back on track," he said.

Implementing real-time feedback loops in educational settings is also very beneficial for both educators and students. For students, this can be done by examining the process, providing immediate insights into students' performance and fostering continuous improvement by providing authentic instructions. This customised approach encourages engagement and motivation, by timely acknowledging their progress and providing tailored resources to address individual weaknesses, said Prof Jaiswal. However, he also warned about the ethical challenges in the collection, analysis, and use of student data. "One major factor is ensuring that student's personal and academic data are collected with informed consent and used strictly for educational purposes. However, misuse or overreach, such as using data for non-educational objectives, can erode trust and raise ethical concerns. There is a risk of bias in data analysis, which may lead to unfair treatment among the students. To address these drawbacks, institutions must prioritise transparency by clearly communicating what data is required, why it is required and how safe that data is with the institution. Establishing robust data governance frameworks adhering to legal and ethical standards such as GDPR or similar regulations can minimise the risk of data misuse," he said.

Gupta also highlighted the importance of institutions in implementing robust data governance frameworks. "They should seek informed consent, anonymise data, and comply with regulations like the Digital Personal Data Protection Act (DPDPA). Transparent communication about data usage and offering students control over their data further builds trust," he said.

AI AS TEACHER

IIM Sambalpur has introduced AI as a faculty. This AI, with machine learning, deep learning, and data analytics, essentially becomes the professor. All the information is fed into the system, and it begins the session. If the class starts at 9 am, the first 15 minutes are for individual introductions and initial discussion. Afterwards, a quiz is taken by the AI in the form of a poll, testing if the students have understood the material. With these insights, educators can intervene early by offering personalised support, such as one-on-one mentoring, targeted resources, or tailored assignments to address specific challenges.

Bridging the educational divide through computer-based testing

MATHEW **POYIADGI**

A successful classroom isn't just about books and resources; it's about creating an environment where students feel valued, heard and empowered to succeed

In populous and diverse countries like India, the educational landscape often mirrors the stark contrasts between urban and rural regions. Urban areas benefit from advanced infrastructure and access to extensive educational opportunities, while rural regions often struggle with limited resources and opportunities. This disparity significantly affects students in rural communities, restricting their career prospects and perpetuating cycles of poverty. However, innovative solutions like computer-based testing (CBT) hold the potential to bridge this divide, fostering enhanced employability and socioeconomic progress.

Empowering Through Certification: Educational centres play a pivotal role in fostering socioeconomic growth by equipping individuals with skills that lead to employment and entrepreneurship. Online learning initiatives and CBT offer equitable access to quality education, providing rural learners with opportunities comparable to their urban counterparts. CBT enhances these

initiatives by enabling a broader range of courses and certifications, including technical skills like coding and data analysis and soft skills such as communication and leadership.

Certifications that are nationally or globally recognised add value to individuals' skillsets, making them more competitive in the job market. As more people upskill and secure employment, communities experience economic upliftment. Educated individuals often share knowledge within their communities, creating a ripple effect that promotes continuous learning and development.

Addressing Skills Gaps: The demand for tech skills is on the rise globally. The World Economic Forum's Future of Jobs Report 2023 highlights that technology and IT roles constitute 16 of the top 100 rising jobs, reflecting the growing importance of tech-related expertise. Conversely, the Global Talent Shortage report by Manpower Group reveals a significant skills gap, with 77 per cent of employers struggling to find qualified talent. Bridging this gap is critical to meeting current and future market demands, particularly through IT and tech-focused courses.

According to Pearson VUE's 2023 Value of IT Certification Candidate Report, professionals who earned IT certifications gained confidence in their abilities, with 81 per cent feeling empowered to explore new job opportunities. Educational centres with CBT capabilities enable individuals in rural areas to acquire certifications that align with market needs, thereby promoting quality education and employability across the nation.

The Broad Reach of Computer-Based Testing: The flexible nature of CBT offers unique advantages over traditional testing methods. Candidates can choose convenient testing locations and time slots, reducing stress and improving performance. This approach proved invaluable during the COVID-19 pandemic, allowing individuals to take exams remotely. The 2023 Value of IT Certification Report underscores the tangible benefits of certifications: 35 per cent of Indian candidates experienced job promotions, while 37 per cent secured new opportunities within their industry, and 20 per cent transitioned to different fields.

Bridging Urban-Rural Disparities: The increasing availability of CBT centres in remote areas is a step toward addressing regional disparities in education and employment. These centres provide a pathway for individuals to upskill, earn recognised certifications, and improve their career prospects. As India continues to expand its CBT infrastructure, the nation moves closer to realising equitable educational opportunities and fostering inclusive socioeconomic growth.

(The writer is Vice President EMEA and Asia, Pearson VUE; views are personal)

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ASSAM TRIBUNE (P-6), 13 DECEMBER 2024

School education in TEs of Assam

Dr BEDIKA BHATTACHARJEE

The education system in the State's tea gardens faces significant challenges, including historical disparities and cultural attachments.

The education system in India has had a rich tradition of knowledge impartation, dating back to the Vedic education system and the Gurukula. Time and again, with the adoption of several policies and Acts, measures have been taken from different verticals to expand the horizon of education both quantitatively and qualitatively. Although the State governments enjoy autonomy over education, guided by the 42nd Amendment of the Constitution of India, the Central government's grip on the overall education scenario in the country is intense and seeks to homogenize it comprehensively. In a country like India, which comprises a heterogeneous set-up due to its diversity in religion, language, culture, social norms, and economy, setting a homogeneous educational framework has been quite challenging and stimulating at times. The challenge not only becomes obvious at the macro level or the national level but is also apparent at the micro level or the local and regional level. One such significant and quite-challenging area for the dissemination of national or State-level educational policies at the micro level is school education in the tea gardens of Assam.

Right from the establishment of the tea gardens in Assam in and around the 1830s to the present times, tea gardens have been one of the major pillars of scenic attraction, economic sustenance, and a very sensitive and important part of the cultural marker of Assam, besides also being a decisive factor in about 35 Legislative Assembly Constituencies in the State. Being one of the principal manufacturers of tea in the country, with about 2,500 tea gardens, Assam provides one of the largest spaces for an industry that employs about one million labourers who are descendants of tribes brought from different regions of Odisha, Jharkhand, West Bengal, and Bihar. These tribes have assembled into a uniform identity known as the tea tribes.

The tea industry is not solely about the production, manufacture, and export of tea around the globe but also represents an establishment and a habitat that transforms a physical piece of land into a place and a home for the tea tribes. For the tea tribes, the tea gardens are not just sources of revenue; rather, their whole existence, essence, and identity seem to be intrinsically attached to the tea gardens. As per the norms of tea garden management, the tea garden administration is bound to ensure necessary measures for the overall welfare of the tea tribes, safeguarding their fundamental requirements of housing, food, health and education.

Several reports till date have focused on education in the tea gardens of Assam, reflecting on the pathetic condition of the education system in the garden schools while also highlighting the unequal ratio of girls and boys studying in these schools. The tea garden managements are responsible for the primary education of the children of the tea community residing in the gardens. While initially, the number of boys studying in the lower primary (LP) schools of the tea gardens was greater than that of girls, since 2017, there has been an increase in the number of girls studying in these schools. Interestingly, the ratio of girls and boys in terms of elementary education and model schools has turned out to be almost identical. The establishment of about 116 model schools within the radius of the tea garden areas – an initiative by the then Education and Finance Minister and current Chief Minister Dr Himanta Biswa Sarma in November 2022 – is another major development and change in the context of school education in the tea gardens. As a result of this initiative, the children of the tea garden community can hope to receive elementary education covering almost every aspect of the educational scheme of the State – from improved infrastructure and trained, qualified teachers to quality education and smart classrooms. On the piece of land provided by the tea garden management, the government-initiated model school attempts to embrace the children within the elementary educational schemes of the State as much as possible.

Despite the State government's efforts to expand the educational belt to reach the tea garden areas, a kind of breach or void seems to persist between the educational landscape and the landscape of the tea tribes. This void cannot solely be attributed to challenges such as the conflicts between the government and the tea garden management authority, human trafficking, early dropouts, child labour, and other issues. Adding to these challenges, there also seems to be an intangible and inexpressible facet to it. This aspect is often rooted in the way of life of the tea tribes, who find contentment and happiness in the present – the present that remains attached to the tea plants and bushes, the trees, the valleys, the merry-making, joy, fun, and laughter under the trees, to the *Jhumur* dance, the *Tirsu* and *Karam*, the *madal*, the *karijo* and *chakna*, and to the enjoyment derived from work and labour.

When contentment and happiness remain confined to the red and white ribbons, plastic bangles, *chana dal*, the humming and whistling of old Hindi film songs, watching the Bagan Cinema (*parda* cinema), cycling, strolling, and returning to the eight hours of work involving either plucking leaves or working in factories, it becomes quite challenging to homogenize the education system under a single strategy. As it turns out, the tea garden culture to a great extent is entrenched in a way of life intuitively entwined with the little, seemingly inconsequential, mundane activities and happenings of life, through the lens of which the higher goals and objectives of education seem to be imperceptible – barring, of course, a few rare cases. Education, which undoubtedly promises and promotes a better way of living, cannot easily supersede an already existing way of life and a culture that still has far to go in discovering what is better and best for it.

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The transformative role of interactive learning in education

AARUL **MALAVIYA**

This modern approach is not just a shift in teaching strategies but a leap toward preparing students for the dynamic demands of the future workforce

The landscape of education has evolved significantly, with technological advancements and the integration of AI, making interactive learning a favoured approach. Because interactive learning fosters engagement, critical thinking and long-term memory, it makes it possible for knowledge to be assimilated more thoroughly.

This is unquestionably an improvement over the conventional approaches, which mostly emphasise rote memory and depend largely on textbook-based techniques. The abilities needed in today's dynamic environment are better suited for interactive learning. Passively absorbing knowledge using conventional teaching approaches results in surface learning, which is ultimately counterproductive. According to National Training Laboratories research, passive learning techniques like reading and lectures only have recall rates of 5–10 per cent.

The Advent of Interactive Learning: A more hands-on approach is provided by interactive learning, which combines technology, teamwork,

and real-world problem-solving. This increases engagement and extends retention. Digital tools, project-based learning, and group discussions are all included in this approach's scope. Students in interactive classrooms outperformed those in traditional lectures by 6 per cent on examinations, according to Harvard University research. Here are some ways that interactive learning approaches work better than conventional strategies:

1.Enhanced Retention: According to National Training Laboratories research, active learning strategies like practice-by-doing and group discussions had higher retention rates, ranging from 50 to 75 percent. Students may directly apply STEM principles through hands-on experiences. According to research from the American Society for Engineering Education, pupils who participated in interactive STEM activities learned much more than those who received standard instruction.

2.Encouraging Critical Thinking: Interactive learning promotes creativity and critical thinking by allowing students to investigate other viewpoints and pose questions. According to a McKinsey & Company research, interactive learning environments foster critical thinking and reflection while increasing student engagement and fostering productive social interactions. Another immersive method of student engagement is gamification, which boosts students' incentive to tackle challenging issues and permits in-depth learning.

3. Real-World Application: Project-based learning, which links education to real-world issues and increases the applicability of information in practical contexts, is a crucial element of interactive learning. In contrast to students who studied using traditional techniques, students who participated in project-based programs demonstrated superior application of information to real-life circumstances, according to a 2022 research by Edutopia.

4. Future Ready: Through more engaging and relevant instruction, interactive learning equips students to overcome obstacles more effectively than traditional approaches ever could. To educate students for the uncertain and constantly changing times, education must emphasise abilities like problem-solving, teamwork, and flexibility in today's competitive labor market.

Interactive approaches also boost motivation and encourage teamwork, which aids students in honing their communication and teamwork abilities. The global EdTech market is expected to grow to $404 billion by 2025, according to EdTechXGlobal. Students that use an interactive learning technique not only perform better academically but are also better prepared to handle problems in the real world.

(The writer is Founder Zamit; views are personal)

P10(6

PIONEER (P-6), 13 DECEMBER 2024

Empowering young innovators

Prime Minister Modi highlights the role of young minds in tackling real-world challenges with creativity and technology

The best way to predict the future is to invent it, said Alan Kay. And indeed how true it is for a nation. A nation that invents and finds solution to its problems marches on the path to progress. Echoing the same sentiment, Prime Minister Narendra Modi highlighted the pivotal role of innovation in nation-building during his interaction at the Smart India Hackathon (SIH) 2024, emphasising how young minds are shaping the future through creativity and technological ingenuity. The event, which included participation from over 1,300 student teams across India, showcased groundbreaking ideas aimed at solving real-world challenges. The SIH is a testament to the transformative power of education and innovation in building a self-reliant India. The event not only bridges the gap between academia and industry but also fosters a culture of collaboration and problem-solving. At the National Institute of Technology (NIT) Srinagar, which hosted the grand finale of the software edition for the first time, 25 exceptional teams from 21 states convened to present their innovative solutions.

The hackathon addressed 250 problem statements submitted by 54 ministries, departments, state governments, public sector units (PSUs), and industries, covering sectors like healthcare, sustainability, education, disaster management and agriculture. With a 240 per cent increase in participation compared to the previous year, SIH 2024 is the largest edition to date, involving over 86,000 teams at the institute level and 49,000 at the national level. Among the standout participants was the 'Big Brains Team' from NIT Srinagar, led by Syeeda Aiemen D Saleem. The team worked on an AI-powered Virtual Reality Friend, a tool designed to assist children with autism spectrum disorder and intellectual disabilities. The project, developed under the Ministry of Social Justice and Empowerment, aims to help children enhance social and interactive skills in a simulated environment. PM Modi lauded the team's empathetic approach, emphasising the global relevance of such solutions and their potential to transform lives. PM Modi's interaction with the participants highlighted his vision of leveraging local innovation to address global challenges. He stressed that solutions tailored for India's unique needs could resonate globally, contributing to the world's progress. "Every child has the right to grow and prosper, and innovative solutions like these ensure no one is left behind," he remarked. By providing a platform for young minds to explore, collaborate and innovate, the Smart India Hackathon is shaping the next generation of problem-solvers and leaders. As India aims to establish itself as a global innovation hub, initiatives like SIH play a crucial role in realising this vision, reaffirming the transformative power of education and technology in nation-building. P10|6

PIONEER (P-7), 13 DECEMBER 2024

Bridging India's urban-rural divide: Empowering rural learners through skilling

India's vast diversity extends beyond culture and language, manifesting in unequal access to education, skilling and employment opportunities

NAGESH SINGH

India is a country with great linguistic, cultural, racial, social and economic diversity. People living in urban areas have access to opportunities for skilling, education and employment that are not easily available to people in semi-urban and rural areas. Over the last decade or two, there has been considerable growth and development in the skilling and education ecosystem due to a multitude of factors. Governments – both central and state – have realised that the only way India can benefit from its tremendous demographic dividend is by ensuring that individuals in the working age are equipped with the knowledge and skills required to thrive in increasingly global workplaces.

Central and state skilling entities have created massive systems that reach every district around India and make top-quality resources available to hitherto underserved audiences.

The corporate sector, leveraging the prevalent Corporate Social Responsibility laws, has also contributed significantly to this by collaborating with government agencies and supporting them with co-funding, content, certification and job opportunities.

The Directorate General of Training (Ministry of Skill Development and Entrepreneurship) manages a network of tens of thousands of institutions that collaborate with the corporate sector and civil society to make high-quality skilling available to hundreds of thousands of learners every year. All India Council for Technical Education, through its network of thousands of engineering institutions, offers cutting-edge training and internship opportunities to learners around India, irrespective of their location or socio-economic limitations. Edunet Foundation, for example, makes courseware and skills across the IT spectrum available to learners across engineering colleges. National Skills Training Institutes and Industrial Training Institutes nationally, directly working with lakhs of learners every year.

These programs are offered in blended modes, leveraging classroom learning, synchronous video, online content and hands-on project work. While there is availability of skilling and education opportunities, there are several issues that limit the benefits of these programs.

The foremost problem is access to technology. Since the courses are offered in blended mode, learners need access to computers with high bandwidth internet connectivity and not just mobile phones. Almost every household in India has access to mobile phones but larger devices that are more conducive to experiential learning in technology are not widely available. Both government and corporate stakeholders can make a huge difference by making current technology platforms available to learners in rural areas by donating and/or setting up labs and digital libraries within the premises of existing educational institutions in these areas.

The second issue is access to local employment. Most jobs – especially the technology-centric ones – are centred around major cities and towns. For learners who are unable to migrate for employment, this is a huge barrier. Additionally, of course, there are many problems associated with mass migration to urban areas. There is a need to create local career opportunities that allow people to gainfully work wherever they are, without the need to migrate to a larger city or town.

This may be done by a steady focus on entrepreneurship that creates jobs locally and helps in the development of rural areas. Rural micro-entrepreneurship, especially focused on agriculture and associated areas, can solve many of the problems associated with mass-migration and lopsided economic development. Local businesses, thus created, will drive the local economy and create local employment.

A stronger focus on rural enterprise will help India by ensuring inclusive economic development. There are several programs by the government and the corporate sector that are trying to achieve this, but they need to be enhanced and made more potent with support from civil society. In an environment where rural learners have access to technology and employment opportunities, skilling initiatives by the government and the corporate sector will make a bigger impact. Learners will be able to learn and earn locally, thereby bridging the urban-rural divide.

(The writer is chairman, Edunet Foundation; views are personal)

DECCAN HEARLD (P-8), 14 DECEMBER 2024

IN PERSPECTIVE

AI-led education, a new normal

Educators must have clarity on processes that can be automated and fundamentals that are non-negotiable

ANUPAMA RAJ AND SHILPI BANERJEE

AI (Artificial Intelligence) is becoming the buzzword across domains including education. With Covid-19, teachers and students from even remote parts of the country made the switch to online teaching-learning. A simple smartphone with internet access opened up a range of possibilities in terms of technology-integrated teaching-learning. The potential and reach of AI in education have expanded continuously since reshaping the way students learn, and teachers instruct.

AI technology can self-train, adapt, and scale in ways that traditional educational technology cannot. It can learn and improve its intelligence over time by analysing large amounts of real-time data related to student learning patterns. By identifying individual students' strengths and weaknesses, AI can adjust in real-time to provide each student tailored learning experience. It can also manage a large number of students simultaneously and scale up activities like providing quizzes and offering personalised feedback. The utility of AI-enabled edtech is evident. However, there is also widespread fear and scepticism regarding its impact on restricting children's creativity; replacing the teacher's role; increasing cases of plagiarism; and encouraging assessment malpractices. While all these concerns are valid, in the future as technology continues to evolve, it is important for educators to navigate certain principles and policies to effectively utilise AI to their benefit.

The use of AI in education is a grey zone, at present. There is an imminent need to understand what kind of knowledge and skills could be safely automated using AI and what should remain strictly within the purview of classroom teaching-learning. As a teacher, how would you treat a presentation on global warming by a student that is completely generated by an AI software? The skill of analysing, synthesising and organising information has been automated using AI; however, the skill of presenting and explaining is being exhibited by the student. If the same student was to write about the issue of global warming in a closed book exam such as the boards, how well-equipped is the student to analyse, synthesise, and organise information in that limited time? So, the question here is as educators, do we have clarity on why certain knowledge, capacities, values, and dispositions are non-negotiable in terms of automation v/s a few others that can be automated purely from an efficiency point of view e.g. gamifying the content for learning; generating a relevant image for a project; creating a detailed reference list, or brainstorming on a topic.

The primary purpose of educational assessments is to understand and track how effectively students have mastered the necessary competencies. Now, with AI-enabled learning in the picture, how much of this mastery is a result of independent thinking by students and how much of it is based on assistive technology might be impossible to differentiate soon. Does this mean AI is completely evil and needs to be evicted from the education system? The answer is not that simple. This would require a much more organised and concrete effort to understand how well students can authenticate their learning and how productively are teachers able to use this assistive technology in their favour. A few principles need to be in place to ensure the same.

Balance is the way forward

Comprehensive school-level policies and guidelines should be co-created to ensure a shared understanding among students on what level of AI usage is permissible and what is considered out of bounds. Initially, this will involve having strict monitoring procedures in place e.g. maintaining drafts of their work and furnishing evidence of their original work as needed.

Teachers should be encouraged to and capacitated in utilising AI as their pedagogic assistant. Routine tasks such as designing assessment tools, automating grading for objective-type tests, creating detailed grading rubrics, and maintaining performance records can be easily automated using AI. While many routine processes could be offloaded to AI, there should be a proportionate increase in classroom-based assessments undertaken by the teacher in the form of oral discussions, role plays, practical demonstrations, field visits etc. This can serve as an effective way of triangulating evidence of student learning between teacher-led and AI-led assessments.

The growth of AI cannot be accurately estimated due to its potential to self-train. Moving forward, we need to create more opportunities and spaces where we can mutually learn, understand, and navigate this new normal of AI-led education.

(The writers are faculty members at Azim Premji University, Bengaluru)

ASSAM TRIBUNE (P-6), 15 DECEMBER 2024

'No arts institution of stature in Assam'

Face to Face

Jyoti Khataniar points out that Srimanta Sankaradeva realised the potential of visual art as an instrument of mass education in 15th century.

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Jyoti Khataniar is a well known art critic, public speaker and a regular contributor to the leading dailies of the region. A recipient of the Munin Borkataky Award, he was earlier associated with *Satsori* and *Bara Ohara*. He is now on the editorial board of *Bigyan Jyoti*.

Why is art essential in human life?

Art is a solace, an immediate escape from reality. Artistic drives are the product of pent up energy building an occupied reality as found in the paintings of surrealistic masters like Salvador Dali and Rene Magritte or a method of human emancipation as evident in the sculptures of Ernst Neizvestny. Picasso has opined that paintings are but research and experiment. Many images and symbols present in different canvases of Picasso present logical orders of his creative process. Art is a fundamental feature of our existence. Art is a manifestation of multilayered human imagination. It speaks for humanity and on behalf of humanity. Down the ages from the pre-historic cave paintings of more than 40,000 years back in time into the canvases of Pablo Picasso, Henry Matisse, Rabindranth Tagore and Sobha Brahma et al, art has created many narratives and abundant scope for interpretations.

What are the key features of modern art and how does it capture human experiences across different cultures?

Modern art is essentially abstract in nature as it has to deal with unprecedented complexities and visual experiences. Art is viewed through the lens of geometry in the strokes and colours of artists like Paul Cezanne. With cubes, spheres and cones, the idea of distortion was introduced in second half of 19th century at different parts of France (Paris and Aix-en- Provence). It was Picasso and George Bracque who provided the modern idiom and innovative techniques of representation. Picasso's Les Demouiselles d' Avignon (1907) stands as a unique example of his artistic playfulness. However, Picasso made it clear that variation does not mean evolution. The modern artist is open to a diverse range of styles, modes of representations, subject matter and mediums. Art encompasses improvements and progress. Picasso's famous pronouncement: "To me, there is no past or present in art", echoes the essential spirit of modern art leading to its newly discovered fascination with primitive art. Besides Cezanne, it was Vincent Van Gogh with The Sunflower (1887) and The Starry Night (1889) and Edvard Munch with The Scream (1893) introduced a deep-seated voice and troubled concerns to contemporary canvases reorienting our sensibilities and control over different subject matters that include nature, human agonies and despair.

Can you give us a glimpse of the Assamese artistic journey down the ages?

Attractive design, beautiful forms with artistic appeal dominated the ancient Assamese world. Through Hangsavega, the messenger of Kumar Bhaskaravarmana, the king of Kamrupa, sent a number of artworks to the royal court of King Harshavardhana in 7th century AD. The famous Chinese traveller Hiuen Tsang visited Kamrupa in 640 AD. Hieun Tsang noted a few interesting characteristics of the life and society of this land. Different northeastern ethnic tribes exhibited their own artistic imagination in traditional and primitive forms (captivating weaving designs of ethnic groups like Nagas and Mising, Terracotas of Achaarkandi village in Dhubri, the tribal Durga of Mangaldoi preserved in the State Museum) where we can experience an essentially elemental world full of strength and vitality . Mahapurusha Srimanta Sankaradeva introduced various artistic elements into the world of Assamese Bhakti Movement. Artworks at different sattras of Assam present a unique flavour. Various paintings used during the performance of *Chihnajatra*, manuscript paintings as contained in the text *Gita Govinda*, *Chitra Bhagavata*, the *Singhashana*, the raised holy platforms present in Assamese community prayer halls (*namghars*) are some of the artistic creations of

the medieval Assam. Jyotiprasad Agarwala noted some elements of cubism in a few Assamese designs and forms. Assamese alphabets as handed over to us from Kanaiberashibowa Lipi (1205 AD) exhibited the literary and calligraphic orientation of our forefathers. The monthly publication of *Arunodoi* by the American Baptist missionaries in 19th century gave the final touch to the stylistics of Assamese alphabet. It is interesting to note that the development of modern art in Assam is closely connected with the artistic development of modern Bengal represented by stalwarts like Abanindranath Tagore, Nandalal Bose, Ramkinkar Baij, Binod Bihari among others. The contemporary Assamese art world is dominated by regional subjects of immense political and social consequences and western techniques drawn heavily from masters like Picasso, Cezanne, Matisse, Edvard Munch, Paul Gauguin, Paul Klee and Indian masters like Tyeb Mehta, MF Hussein, Rabindranath Tagore, Francis Newton Souza among others. Modern Assamese stalwarts like Sbobha Brahma, Benu Mishra, trained at Shantiniketan alongwith Nani Borpujari used their technical skills and artistic imagination to create a world of Assamese art dazzled with political, cultural and social concerns of this land.

What are the main features of Assamese creativity especially in the fields of paintings and sculptures?

It is extremely difficult for any contemporary artist to introduce a unique voice into the two dimensional canvases or three dimensional objects in terms of force and range. Painters like Atul Chandra Baruah, Munindra Narayan Bhattacharya, Kishor Kumar Das, Subhakar Laskar, Anup Kumar Sarma, sculptors like Krishna Goswami, Tridib Dutta, Ratul Chandra Gogoi et al have captured some essential orientations and features of human existence in order to represent their own visual thinking. Chandan Bez Baruah in his series 'Somewhere in the North East' deals with the ecological dimensions that reveal the interplay of nature and man without a strict adherence to abstract reasoning. Biren Singha with his monumental outdoor and public sculptures revived and rebuilt many oral narratives creating a unique order of identity and space for the respective tribes to operate. All these contemporary Assamese artists have been working tirelessly towards building an artistic world that seeks to carry a comprehensive understanding of our situational anxieties and to conceal the true content of the ideas present in their respective mental horizons.

What is the current scenario of art education in the State?

Despite having a glorious history of artistic achievements, we have not yet been able to build a strong institution that addresses our artistic concerns and possibilities. Government College of Art & Crafts (est. August 15, 1947 by Jiveswar Baruah) has its own infrastructural problems and pedagogical limitations. Gauhati Artists' Guild is an effort of 1970s to bridge a gap. Institutions like Gauhati University and Mahapurusha Srimanta Sankardeva Viswavidyalaya have yet to introduce masters in painting and sculpture. It is interesting to note that Srimanta Sankaradeva in 16th-century realised the potential of visual art as an instrument of mass education which is yet to attract the attention of Assamese educational planners even at university levels. AT/15/12

DAINIK JAGRAN (P-10), 15 DECEMBER 2024

विदेश में पढ़ाई

यह अच्छा है कि सरकार उन कारणों का पता लगाने जा रही है, जिनके चलते बड़ी संख्या में भारतीय छात्र पढ़ाई के लिए विदेश जा रहे हैं। ऐसा इसलिए करना पड़ रहा है, क्योंकि शिक्षा मंत्रालय इस नतीजे पर पहुंच रहा है कि विदेश में पढ़ाई के लिए जाने वाले छात्रों की बढ़ती संख्या के चलते प्रतिभा पलायन के साथ ही देश का पैसा विदेशी मुद्रा के रूप में बाहर जा रहा है। चूंकि यह पैसा बहुत अधिक है, इसलिए विदेश में पढ़ाई करने के कारणों का पता लगाने के साथ ही उनका निवारण करना भी आवश्यक है। भारतीय छात्र एक लंबे समय से पढ़ाई के लिए विदेश जा रहे हैं। एक समय ऐसे छात्रों के विदेश में पढ़ाई करने के बाद वहीं नौकरी करने के सिलसिले को प्रतिभा पलायन की संज्ञा दी जाती थी। बाद में यह माना जाने लगा कि इस प्रतिभा पलायन से भारत को कुल मिलाकर लाभ ही होता है, क्योंकि ऐसे छात्र विदेश में नौकरी कर भारी मात्रा में जो धन स्वदेश भेजते हैं, उससे विदेशी मुद्रा भंडार बढ़ता है। अब यह पाया जा रहा है कि विदेश में पढ़ाई में खर्च होने वाले धन और वहां नौकरी करने वाले भारतीय छात्रों की ओर से भेजी जाने वाली राशि का अंतर कम होता जा रहा है। यह इसलिए कम हो रहा है, क्योंकि विदेश जाकर पढ़ाई करने वाले छात्रों की संख्या कहीं अधिक तेजी से बढ़ रही है।

आमतौर पर भारतीय छात्र दो कारणों से विदेश जाकर पढ़ाई करना पसंद करते हैं। एक कारण तो यह है कि वे विदेश में ही बसना चाहते हैं। दूसरा कारण यह है कि उन्हें देश के अच्छे शिक्षा संस्थानों में मनचाहे विषयों की पढ़ाई का अवसर नहीं उपलब्ध हो पाता। कम से कम इस समस्या का निदान तो प्राथमिकता के आधार पर किया जाना चाहिए। इस मामले में इसकी अनदेखी नहीं की जा सकती कि अपने देश में गुणवत्तापूर्ण शिक्षा देने वाले पर्याप्त सरकारी और निजी शिक्षा संस्थान नहीं हैं। उनमें सीटों की संख्या भी कम है। यह ठीक है कि हाल के वर्षों में निजी क्षेत्र में उच्च शिक्षा के तमाम केंद्र खुले हैं, लेकिन यह देखने में आ रहा है कि उनमें पढ़ाई का खर्च तो अधिक है, लेकिन शिक्षा की गुणवत्ता का स्तर संतोषजनक नहीं। कई छात्र और अभिभावक यह पाते हैं कि इन शिक्षा संस्थानों में पढ़ाई के खर्च के मुकाबले विदेश में पढ़ाई का खर्च कम है। सरकार को यह देखना चाहिए कि भारतीय छात्रों के सामने गुणवत्तापूर्ण शिक्षा के अभाव में विदेश पढ़ाई करने जाने की जो मजबूरी है, वह दूर हो। यह समझ आता है कि हमारे छात्र अमेरिका, आस्ट्रेलिया, न्यूजीलैंड और यूरोपीय देशों के अच्छे शिक्षा संस्थानों में पढ़ाई करने जाएं, लेकिन इसका कोई औचित्य नहीं कि उन्हें फिलीपींस, कजाखस्तान, यूक्रेन आदि देशों की ओर रुख करना पड़े और वह भी एमबीए, एमबीबीएस की डिग्री लेने के लिए। 15/12/24

HINDU (P-17), 16 DECEMBER 2024

Hemalatha M.
Biju Dharmapalan

GETTY IMAGES/ISTOCKPHOTO

Fuel their passions

Passionpreneurship is the key to unlocking students' potential and reshaping the future of education

A common problem faced by youngsters today is the difficulty of getting a job in their domain of knowledge. The reason for this is not that there are not enough jobs in the market but the difficulty of finding a candidate who fulfils the needs of the job profile. This situation is primarily because of the lack of passion among youngsters. While passion is an important driver for success, it has never been a measured metric in our academic evaluation structures. The syllabus in our universities is mainly prepared by teachers based on convenience and workload. As a result, students are forced to learn what they don't wish to learn, and so do not acquire or focus on skills needed for a job profile in their knowledge domain. This is affecting the academic and industry ecosystem, and necessitates fixing yardsticks to measure and promote passion during academic life.

Passionpreneurship combines "passion" with "entrepreneurship," reflecting a pursuit of careers driven by personal values and interests rather than just market opportunities. Unlike traditional entrepreneurship, which focuses on profit, passionpreneurship stems from an innate desire to work in fields that excite and fulfill individuals. This mindset can redefine academic success, encouraging students to harness their unique talents and align them with societal needs. Incorporating passionpreneurship into academic structures aligns well with the principles of Outcome-Based Education (OBE), which promotes self-directed learning and problem-solving skills tailored to diverse career paths. The rise of social media and digital platforms has further facilitated this approach, making it easier for students to transform their hobbies into viable careers through digital tools and global connections.

Custom-made syllabi

Fostering passionpreneurship within academia is not about rejecting traditional learning. Instead, it enhances it by allowing students to explore unconventional paths that resonate with their passions. Soft skills such as creativity, critical thinking, communication, and emotional intelligence are vital in this approach. Educators are now developing personalised learning plans, enabling students to tailor course content to match their entrepreneurial goals. A custom-made syllabus can encourage passionpreneurship in several ways:

Enhanced engagement: When students help shape their syllabus, they can include topics related to their interests, leading to increased engagement and deeper investment in their passions.

Cross-disciplinary knowledge: Custom syllabus allow students to incorporate diverse subjects, supporting interdisciplinary learning. For example, a student interested in health technology might integrate Biology, Software Development, and Business Studies to create a niche in health tech.

Syllabus customisation: Tailoring the syllabus enables students to focus on the skills they need for their entrepreneurial goals, avoiding a one-size-fits-all approach.

Problem-solving focus: By designing curricula around real-world problems, students develop a problem-solving mindset. Students interested in sustainability, for instance, could focus on Environmental Studies and green innovation, equipping themselves to launch eco-conscious ventures.

Mentorship and networking: A custom syllabus allows students to connect with mentors and professionals aligned with their passions, providing essential insights and industry connections.

Creative exploration: Custom syllabi encourage students to explore unconventional or emerging topics, fostering creativity and innovation. This helps students generate unique entrepreneurial ideas.

Tailored assessments: Personalised assessments such as portfolios or business models reflect students' entrepreneurial goals, offering a platform to showcase their skills and build confidence in their ventures.

Thus a custom-made syllabus gives students control over their educational journey and provides a structured way to pursue, experiment with, and refine their passions into viable, fulfilling careers. As passionpreneurship continues to gain traction, the role of academic institutions will evolve. Universities and colleges that succeed in the future will embrace this shift, providing students with the tools and opportunities required to pursue their passions and make a meaningful impact. Academic success will no longer be measured solely by degrees or exam results but by the ability of institutions to cultivate innovative thinkers and socially conscious entrepreneurs.

As more institutions adopt this mindset, we can expect to see a generation of students who are not only well-educated but also deeply engaged with their passions, ready to innovate and make meaningful contributions to society. The fusion of passion and entrepreneurship is the key to unlocking students' potential and reshaping the future of education.

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TELEGRAPH (P -10), 16 DECEMBER 2024

OUT OF SCHOOL

It is easier to enact laws about rights than to implement them. That the Right to Education Act has not ensured free and universal education for all six to 14-year-old children was borne out by the figures presented in the Lok Sabha. For the first eight months of 2024-25, 1.17 million children were counted as out-of-school. In spite of schemes and policies, out-of-school children have remained an intransigent issue in India's education system. Since vast numbers are being assessed and often that of a moving population, it is possible that some more children are slipping through the cracks. This year Uttar Pradesh has the most out-of-school children — a staggering 784,228. Jharkhand and Assam are next, with over 60,000 children each. These figures are alarming for the children who are out of school. They suffer not just from a loss in learning, but also from poorer earning skills. This would perpetuate the cycle of poverty and lack of social power.

A National Sample Survey report showed that in 2017-18 12.4% children were out of school. In spite of accounts of girls doing well, more girls dropped out than boys, more underprivileged or backward classes children than children from upper-caste and well-off families and more in villages than in cities. While girls from tribal families are the worst off anywhere, more girls in the north and west drop out than in the south. Children from poor families often leave in order to earn or to help in the house. Domestic work, agriculture and manufacturing are the most popular spheres for this. Girls can be married off, or kept at home because schools are too far away or lack proper sanitation facilities. But a large section drops out because of lack of interest or the hostility faced because of their poverty or backwardness. This last should be tackled by sensitive handling and engaged teaching. Infrastructure suitable for girls and safe travel can also be arranged. It is possible to make parents aware of the importance of foundational learning to prevent children from working. Clearly, laws such as those against child labour or minor marriage or on the right to education are not sufficient to stop children — or their parents — from giving up on school. The approach must change; solutions must fit the problems.

DECCAN HEARLD (P-9), 17 DECEMBER 2024

Science meets sports

VALLISH HERUR

Education has long grappled with the challenge of making science and mathematics engaging for all learners. Research shows that approximately 56% of 14- to 18-year-olds in India struggle with basic division problems—skills typically mastered in grades 3-4. A significant number of children naturally excel in bodily-kinaesthetic intelligence—the ability to learn through physical activity, movement, and hands-on experiences. Yet traditional teaching methods favour abstract and theoretical approaches, leaving many children disconnected from these critical subjects. When students fail to relate to abstract concepts, they often see themselves as "not good enough", leading to a lack of confidence and disengagement.

Studies underscore the importance of aligning learning strategies with students' innate strengths. Engaging in movement-based activities has been shown to improve interest, concentration, and academic performance. Students who learn through physical activity often outperform peers who rely solely on sedentary learning methods.

Developmental psychologists like Jean Piaget emphasise the significance of concrete experiences in early learning. These experiences form the foundation for abstract thinking—a key milestone in cognitive development. Without this bridge, children struggle to grasp abstract ideas, especially in subjects like science and mathematics.

Popular sports such as cricket, hockey, kabaddi, and badminton provide rich, real-world contexts for teaching complex concepts. In cricket, for instance, the physics of fast bowling demonstrates the principle of conservation of angular momentum. A bowler's rotational arm movement transfers spin and velocity to the ball, helping students understand the interplay between physics and skill.

Projectile motion—a critical concept in physics—comes alive when analysing a cricket ball hit for a six. The angle of projection, initial velocity, and gravitational force combine to determine the ball's trajectory, connecting abstract equations to visible outcomes.

Hockey offers an equally engaging context in which students can study momentum and energy transfer. The force applied to the ball during a strike exemplifies Newton's laws of motion, while the passing angles illustrate spatial reasoning and problem-solving. Kabaddi provides a practical introduction to biomechanics, including the concept of the centre of mass, while encouraging critical thinking.

Mathematics finds natural applications in sports. Cricket involves calculating run rates, while badminton demonstrates the principles of angles and trigonometry in shot placement. Kabaddi's scoring system introduces concepts of combinatorics and probability.

Integrating sports into academic learning goes beyond engagement to foster critical cognitive skills like problem-solving and analytical reasoning. For instance, analysing a fast bowler's delivery or the aerodynamics of a shuttlecock engages students in hypothesising and experimenting.

Such experiential learning builds essential life skills, including teamwork, adaptability, and decision-making. Connecting theoretical knowledge to practical applications empowers students to tackle challenges with confidence, fostering a deeper appreciation for science and mathematics.

Incorporating sports into academic curricula requires a paradigm shift. Educators must view sports not as extracurricular but as integral to the learning process. Schools can design activities where students study the mechanics of cricket bowling to understand physics or analyse kabaddi strategies to explore mathematical reasoning.

The cultural relevance of sports like cricket and kabaddi offers a unique opportunity to engage with learners meaningfully. By using these familiar and beloved games as teaching tools, educators can foster a lifelong love for learning, empowering students to approach both academic and real-world challenges with curiosity and confidence.

This approach challenges the traditional divide between "sports or academics," reframing it as "sports and academics." By integrating the two, we recognise that physical activity and intellectual growth are not mutually exclusive but complementary. Sports provide a dynamic and engaging medium to teach science and mathematics, while academic exploration deepens the understanding and appreciation of the principles that govern these games.

(The writer is the managing trustee of Prayoga, a not-for-profit education research institute)

17/12/24

DECCAN HEARLD (P-9), 17 DECEMBER 2024

'India has a unique opportunity to become the global hub for skilled talent'

The Ministry of Skill Development and Entrepreneurship was established during Prime Minister Narendra Modi's first term to foster new skills and innovative thinking for existing and emerging jobs. *DH*'s **Ajith Athrady** spoke with Skill Development Secretary **Atul Kumar Tiwari** about the ministry's accomplishments and future challenges. *Excerpts:*

How will the ministry address skill deficiency in the Indian workforce?

The MSDE focuses on aligning skilling programmes with industry demands, promoting lifelong learning, and integrating emerging technologies like AI, green skills, and advanced manufacturing into training curricula. Through initiatives like the Skill India Digital Hub, expanded apprenticeship programs, and targeted skilling in aspirational and unserved districts, we aim to empower youth, enhance global employability, and bridge regional and gender disparities. By leveraging public-private partnerships and fostering innovation, we are building a future-ready workforce to drive India's growth into a developed nation.

The Skill Ministry is leading the government's efforts to upgrade industrial training institutes. When will the guidelines be finalised?

We are actively collaborating with state governments and industry leaders to finalise transformative guidelines for modernising 1,000 ITIs under the Rs 60,000 crore hub and spoke model, as outlined in the Union Budget 2024-2025. We are consistently holding policy workshops, and one such in Bengaluru, with participation from seven states, focused on key areas such as financial autonomy, governance reforms, sustainability models, ITI selection criteria, and course redesign aligned with industry needs. Insights from over 75 leading companies have further enriched this effort, emphasising industry-integrated training, faculty involvement, and alignment with sunrise sectors with high demand in the future, such as electronics, green energy, and advanced manufacturing. With partnerships involving stakeholders and associations like CII, we aim to shape ITIs into cutting-edge hubs of skill development, equipping a workforce ready to thrive in India's dynamic economic landscape.

The Tuesday Interview

With Atul Kumar Tiwari

Secretary, MSDE

With the rapid advancement of technology, particularly artificial intelligence and automation, the workplaces are likely to undergo massive changes in the coming days. How will the government address this?

Central to this effort is Government of India's IndiaAI Mission, a Rs 10,372-crore initiative aimed at promoting AI innovation and developing indigenous tools for ethical and safe deployment. MSDE is integrating emerging technologies like AI, machine learning, and cybersecurity into its training programmes through partnerships with industry leaders such as Microsoft, Meta, Cisco, and Adobe.

Notable efforts include the rollout of a 7.5-hour foundational AI module across 14,600 ITIs, giving students early exposure to AI's impact on the workforce.

Additionally, partnerships with Meta will help us establish five Centres of Excellence in virtual and mixed reality to deliver specialised training in cutting-edge technologies across our National Skill Training Institutes located at Hyderabad, Bengaluru, Jodhpur, Chennai, and Kanpur.

Complementing these efforts are digital literacy initiatives on the Skill India Digital Hub platform, where students can take these courses online anytime, anywhere.

Skill India has completed 10 years. What challenges do you see in skilling India now and over the next decade? Are states keeping up with the Centre in skilling India?

The next decade offers immense potential to leverage advanced technologies like AI and blockchain, scale digital skilling, and foster innovation in curriculum design. With global trends such as the green economy and Industry 5.0 on the horizon, India has a unique opportunity to solidify its position as a hub for skilled talent. Every challenge we face is a chance to refine, innovate, and build a resilient, inclusive, and future-ready workforce. The rise of gig work and hybrid job models highlights the opportunity to develop modular, lifelong learning programmes that cater to evolving workforce dynamics.

In which sectors can India emerge as a supplier to the global skilled workforce?

Key sectors driving this growth include IT, healthcare, logistics, hospitality, engineering, oil and gas, construction, agriculture, and caregiving. The IT sector is in high demand globally, with countries like Germany, the UK, the US, and Qatar seeking skilled professionals. Similarly, West Asian nations, particularly the UAE and Saudi Arabia, require workers for the oil and gas industry. Over 2.5 million Indians are employed in Saudi Arabia alone.

Germany is actively recruiting Indian professionals to address labour shortages in healthcare and engineering, raising the annual cap on skilled labour visas for Indian workers from 20,000 to 90,000. Additionally, the Indian government is establishing 30 Skill India International Centres (SIICs) to enhance training for candidates seeking overseas employment. The government aims to place 100,000 skilled workers abroad, ensuring India remains a key player in meeting global labour demands across diverse sectors.

MSDE has signed 11 government-to-government MoUs with countries like Australia, Belarus, China, Denmark, France, Germany, Japan, Qatar, Switzerland, the UAE, and the UK in skill development and vocational education training. We have successfully facilitated employment opportunities in Japan for approximately 100 youths in nursing care.

HINDUSTAN TIMES (P-14), 17 DECEMBER 2024

IIT Madras has a digital human brain atlas ready

The complexity of the human brain has always presented one of the greatest challenges in science. Neurological disorders such as Alzheimer's, Parkinson's, and epilepsy affect millions of people worldwide, yet we still know relatively little about their underlying causes. Existing treatments are often expensive, difficult to access, and only modestly effective. This leaves millions of patients and families facing daunting uncertainty, as well as health care systems strained by the burden of care.

At the same time, the rapid advancements in Artificial Intelligence (AI) are transforming industries and creating new opportunities, yet AI still pales in comparison to the efficiency, adaptability, and learning capacity of the human brain. Despite its ability to process massive datasets and perform specific tasks at superhuman speeds, AI systems remain energy-intensive and lack the flexibility that comes naturally to human cognition. If we could better understand how the brain works — its adaptability, efficiency, and ability to process information — we could revolutionise not only the treatment of neurological diseases but also the future of AI.

Vivek Wadhwa

This is where the work being done at IIT Madras comes in. By creating the world's most detailed digital human brain atlas, the researchers at IIT Madras are embarking on a journey that could fundamentally change how we approach both medicine and AI. This digital brain atlas will map the human brain at an unprecedented level of detail, providing insights into its structure, connectivity, and the underlying mechanisms that make human cognition so unique.

The brain is estimated to be made up of approximately 80 billion neurons, with trillions of connections forming a network of incomprehensible complexity. Mapping this network has long been a dream of neuroscientists, but existing tools have been limited in their ability to provide a clear, detailed picture of how the brain is structured and how its different regions communicate with one another. The team at IIT Madras, however, is changing that. Their project involves slicing human brains into ultra-thin sections — 10,000 slices per brain — each captured at tens of gigapixels resolution, resulting in a 3D, fully digital model of the whole brain. This process generates three petabytes of data per brain, creating a dataset that offers unprecedented insights into the inner workings of this most complex organ.

In an exciting new development, the Sudha Gopalakrishnan Brain Centre at IIT Madras has released DHARANI, the first-ever 3D high-resolution imaging dataset of the human foetal brain. Featuring over 5,000 sections at cellular resolution, this groundbreaking dataset offers researchers a detailed view of early brain development. Remarkably, the team achieved this at less than one-tenth the cost of similar projects in the West. This achievement, led by Mohanasankar Sivaprakasam, professor in department of electrical engineering at IIT Madras and head of the Healthcare Technology Innovation Centre (HTIC), a joint initiative of IIT Madras and department of biotechnology (DBT), ministry of science and technology, sets the stage for major advancements in neuroscience and foetal medicine, with potential applications ranging from early diagnosis of developmental disorders to understanding the origins of neurological diseases.

The potential applications of this research are vast. By studying the brain at this level of detail, scientists will gain new insights into how neurological diseases develop, what biomarkers signal their onset, and how various treatments affect brain function over time. The digital brain atlas could help researchers identify early indicators of diseases like Alzheimer's, enabling earlier diagnosis and more effective interventions before symptoms become severe. This is particularly important in countries like India, where access to expensive diagnostic tools is limited and millions of people go undiagnosed until it is too late for treatment to make a meaningful difference. The affordability aspect is central to the project's mission, with the team focused on making their tools and insights available at a fraction of the cost, democratising access to this critical information and ensuring it benefits patients everywhere.

The brain atlas also represents a new model for innovation in India, where affordability and scalability are essential. For years, much of the cutting-edge research in fields like neuroscience and AI has been concentrated in the West. IIT Madras is proving that India has the talent and creativity to not only participate in but lead the next wave of breakthroughs. International collaborations with institutions like the University of California underscore the global significance of this work. India's ability to innovate at lower costs gives it a unique advantage in addressing global problems.

If solutions can work in India, where resources are often stretched thin, they will be effective everywhere. This democratisation of science and technology is central to the mission of the brain atlas project.

Transformative work like this is made possible by visionary donors like Kris Gopalakrishnan, co-founder of Infosys, who has dedicated his post-corporate career to supporting research with global impact. His investment in the Sudha Gopalakrishnan Brain Centre reflects a belief that India can lead the world in creating affordable, scalable solutions for some of humanity's greatest challenges.

Witnessing the groundbreaking work at IIT Madras firsthand early this year also inspired me to collaborate with them and relocate my company, Vionix Biosciences' R&D to India, leveraging their expertise to develop advanced diagnostic technologies. Their commitment to making cutting-edge science accessible to all aligns perfectly with the mission of democratising innovation. These are shining examples of how grand visions, rooted in affordability and global collaboration, can transform industries and improve lives.

Vivek Wadhwa is CEO, Vionix Biosciences. The views expressed are personal

INDIAN EXPRESS (P-13), 17 DECEMBER 2024

Scholars without borders

One Nation One Subscription could make high-quality research more accessible

V S CHAUHAN, REMYA HARIDASAN

ON NOVEMBER 25, the Centre approved the Pradhan Mantri-One Nation One Subscription (PM-ONOS) scheme. This ambitious initiative will grant access to a vast collection of scholarly research e-journals, marking a transformative moment for students, researchers, and academic institutions across India, especially those from the country's less-endowed institutions. The scheme is designed to provide all government Higher Education Institutions (HEIs) and research institutions access to over 13,000 e-journals from 30 of the world's most prominent publishers. Such access spans disciplines including STEM, medicine, management, social sciences, and the humanities, offering an unprecedented expansion of knowledge.

At present, approximately 2,400 institutions benefit from subscriptions through 10 different library consortia. These consortia, managed by various government ministries and departments, provide access to e-resources such as journals, databases, standards, and e-books. Some key players in this ecosystem include the Ministry of Education, the Department of Science and Technology, the Department of Scientific and Industrial Research, the Department of Biotechnology, the Department of Agricultural Research and Education, the Ministry of Earth Sciences, the Department of Atomic Energy, the Department of Space, Defence Research and Development Organisation and the Ministry of Health & Family Welfare. The largest of these is E-Shodh Sindhu (ESS) under the Ministry of Education, which serves around 2,000 government institutions, including Institutes of National Importance (INIs) like IITs, IIMs, IISERs, and NITs. The new initiative includes all central universities, state public universities, and colleges supported by the government of India. Historically, these consortia have operated in a fragmented manner, catering to specific disciplines, but ONOS offers centralised access to resources across all disciplines.

The number of institutions benefiting from these subscriptions will increase by over 160 per cent. Notably this initiative will extend access to all government medical colleges, addressing the current gap in coverage by the National Medical Library's Electronic Resources in Medicine Consortium (ERMED) under MJo H&FW. Currently, only 74 medical colleges, including 14 AIIMS (out of 26) are covered under the medical consortium, ERMED. With the introduction of ONOS, all government medical colleges in the country will get access to e-journals. ONOS also seeks to foster research culture in tier-2 and tier-3 HEIs.

Under the existing consortia model, journal access has been discipline-specific, limiting researchers' ability to access materials outside their immediate field. ONOS will consolidate these resources, offering access to approximately 13,000 journals across various disciplines.

This shift is aligned with the National Education Policy (NEP) 2020 objectives and the Anusandhan National Research Foundation, which emphasise the importance of multi-disciplinary education and research. Institutes like IIT Madras are already blending traditional engineering and technology curricula with social sciences and offering clinical research programmes in partnership with leading medical institutions. Through ONOS, these efforts can be reinforced, with easy access to relevant journals across fields like sociology, economics, psychology, and the like. The Anusandhan National Research Foundation also encourages cross-sectoral collaborations and ONOS is expected to be a powerful tool in promoting such partnerships. The removal of disciplinary silos in academic research will not only enhance the quality and impact of Indian research but also drive innovation that can contribute to social and economic development.

With its vast coverage of journals, ONOS has ensured 98–100 per cent fulfilment of the e-journal requirement of most consortia. In its next phases, ONOS has a plan, subject to approvals, to expand to private higher educational institutions through a public-private partnership model. Ways of moving forward towards this stage will be guided by the learnings from the current pilot phase and will likely involve new models such as transformative agreements that combine subscription costs with open-access publishing.

ONOS is not a value judgement on the subscription-based model of scholarly publishing but the adoption of the most practical India-specific solution towards expanding knowledge access till a sustainable open access model is achieved globally. The initiative represents a fundamental shift in the way scholarly research is accessed and shared in India. It is an important step towards a universal and equitable approach to achieving open access — a principle enshrined in Article 27 of the United Nations Universal Declaration of Human Rights.

By expanding access to scholarly resources, ONOS will empower students, faculty, and researchers to push the boundaries of knowledge and innovation. It presents great opportunities to state universities that do not possess the financial strength of many elite institutions in the country. Even for leading academic and R&D institutions, this opens up the opportunity for cross-disciplinary and multidisciplinary research like never before. It has the potential to be a game-changer in the knowledge ecosystem.

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MILLENNIUM POST (P-7), 17 DECEMBER 2024

Access with equity

Privatisation of higher education in India encapsulates a complex trade-off between facilitating innovation and accessibility through private investment and addressing concerns about commercialisation, inequality, and its impact on democratic values

where education becomes a commodity rather than a public good. This can result in increased inequality, as private institutions may cater to the affluent, exacerbating existing social and economic inequalities. Additionally, privatisation can lead to a loss of government control over education policy and standards. Ultimately, the privatisation of higher education in India is a complex issue that requires careful consideration of its potential benefits and drawbacks.

The concept of public subsidies for promoting education in India dates back to the East India Company era, before the country gained independence. Prior to independence, India experimented with three types of private institutions, where individual philanthropists and notables played a significant role. Some of India's premier universities, such as Banaras Hindu University and Aligarh Muslim University, were established with the active moral and financial support of the community. This initiative can be regarded as a precursor to the present Public Private Participation model in the educational sector.

The privatisation of higher education in India has undergone significant evolution, transforming from what was once described as "half-baked socialism" to "half-baked capitalism." Privatisation has taken various forms in India. Initially, the government introduced self-financing courses within public institutions. This system was unique, with inherent contradictions, as the ownership remained with the state while the courses became self-financed.

The Indian judiciary has played a crucial role in shaping the privatisation of higher education. In the landmark case of *Mohini Jain vs. the State of Karnataka* (1992), the apex court reacted to the trend of collecting exorbitant fees, popularly known as "capitation fees." The court argued that the right to education is a fundamental right and cannot be denied to students who cannot afford to pay these fees. Significantly, private investors have primarily focused on professional education, such as engineering, medicine, and management.

In India, a significant section of the historically underprivileged population remains excluded from the educational system

The privatisation of higher education in India has taken multiple forms. The second form involves converting government-aided institutions into private self-financing institutions. The third form is characterised by the rise of commercial private higher educational institutions, focusing on self-financing private institutions.

India also has a distinct set of private colleges and universities run by missionary organisations, such as the Jesuit Order and Ramakrishna Mission, without a profit motive. For instance, St. Xavier's University in Kolkata, founded by the Jesuits, received government support in the form of land at a subsidised rate and significant contributions from alumni.

In contrast, the privatisation of higher education by individuals seeking to profit from it can be seen as the commercialisation of education. This raises fundamental questions about the purpose of education: will it foster critical thinking and analytical skills in learners, or will it merely equip them with marketable skills to serve the interests of capital owners?

One of the critical concerns surrounding the privatisation of higher education is its potential impact on the promotion of democratic values. Experts argue that democratic ethos is deeply intertwined with the organisation of the education system, pedagogy, and the evolution of knowledge systems. In India, a significant section of the historically underprivileged population remains excluded from the educational system.

Despite growing awareness among parents from disadvantaged backgrounds about the importance of quality education, financial constraints prevent them from accessing private education. This raises fundamental questions about the role of the state in ensuring equitable access to education. Can the state absolve itself of its responsibility to provide quality education to all citizens?

Should the state refrain from providing grants-in-aid to institutions that offer quality education without prioritising profits? This is a critical dilemma, as the state's support can help bridge the gap between private and public education, ensuring that quality education is accessible to all, regardless of their socio-economic background.

The state can play a crucial role in supporting education in two ways. Firstly, the state can provide financial assistance to learners, after a comprehensive assessment, to pursue their education in private institutions. Secondly, the state can offer grants-in-aid to these institutions to support their operations. The criteria for providing these grants must be carefully evolved, with wisdom and impartiality.

However, a fundamental question remains: will profit-driven private investors utilise these funds effectively? This issue can be addressed by appointing a committee comprising competent individuals. The state can establish a committee to rank private institutions based on their performance and devise a grant-in-aid scheme accordingly.

There is no valid reason for the blanket withdrawal of subsidies to private universities that have legislative approval. It is essential to recognise that commodifying education can exacerbate rural-urban disparities and widen the gap between backward and forward classes. This would have detrimental effects on equality and equity, the twin pillars of democracy.

The state must vigilantly monitor private institutions that perpetuate the commercialisation of education by introducing job-oriented courses with exorbitant fees. Although these courses guarantee quick employment, they grant private providers unchecked freedom to determine the price tag of the course.

Another challenge facing the privatisation of education in India is the issue of autonomy. The state attempts to regulate private institutions through various means, without providing financial support. While national bodies like the UGC, AICTE, and BCI should oversee academic curricula to ensure uniformity, stringent regulatory measures may stifle the initiative of private investors.

India, being the youngest country in the world, is poised to reap its demographic dividend from 2005-06 to 2055-56. With approximately 68 per cent of the population falling within the 15-64 age bracket and 26 per cent within the 10-24 age group, India boasts a relatively young population with a median age of 28.4 years. Harnessing this demographic dividend requires spreading quality education among the youth. A study in Assam reveals that students have a positive perception of privatisation in education.

Furthermore, our commitment to achieving Sustainable Development Goals (SDGs), particularly the principle of leaving no one behind, underscores the need for private initiative in education. Public institutions alone cannot cater to the vast population of our country. Therefore, private initiatives that prioritise quality education over profit maximisation must be encouraged.

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Views expressed are personal

HINDU (P-8), 18 DECEMBER 2024

Stuck in the classroom — students, teachers, NEP 2020

Parag Waknis

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Indian students in Higher Education (HE) are spending considerably more time in the classroom than their European Union (EU) and North American counterparts. Yet, they remain at risk of being relatively undereducated. There are primarily two reasons: higher proportion of teaching time in course credits and higher number of courses a semester under the National Education Policy (NEP) 2020.

A contrast and the academic impact

An average student in a university in the EU or North America takes approximately four courses a semester with a maximum of three hours of lectures a course a week. This brings the total classroom time to a maximum of 12 hours a week. On the other hand, Indian students enrolled in the new four-year undergraduate programmes in Indian universities must take five courses a semester with four hours of lectures a course a week. This amounts to 20 hours of classroom time a week. These extra eight hours in the classroom do not leave much time for essential academic activities outside the classroom such as self-study, reading, or working on assignments, most likely leading to exhaustion and reduced learning.

A casualty of this increased classroom time is the number of assessments that are actually feasible in a course. In the earlier version of the choice-based credit system in the three-year undergraduate programme, where students took only four courses a semester, there was relatively more scope for continuous assessment. Now, with increased classroom time, students find it difficult to work on anything more than two assessments a course. This could impact the diversity of assessments, privileging multiple choice questions-based assessments that are easily graded via phone apps over assessments such as a term paper or a reflective essay that requires more time and effort from students.

Increased classroom time runs the risk of students becoming passive recipients, affecting the vision of the NEP 2020

Thus, increased classroom time risks incentivising rote learning and perpetuating the school dynamics where teachers are owners of knowledge and students are passive recipients. At least at the university level, students need to be pushed to own their learning. This is possible only if they are allowed time to reflect, plan, and execute their learning, explore learning outside the classroom individually and with peers scaffolded by assignments such as reflective essays, group projects, and cross-disciplinary problem solving.

The subject of continuous assessment

Addressing this reduction in the number of possible assessments is important because NEP 2020 lays emphasis on continuous assessment. In this system, the final grade can be aggregated from three or four assessment components spread over the semester. Such a system provides an opportunity to design a mix of low and high stakes assessments, incentivising continuous effort and learning, rather than cramming up before one or two examinations. Continuous assessment allows considerable flexibility for faculty to tailor assessment frequency and type to meet the learning outcomes of their courses. It is also a way to receive continuous feedback for faculty to adjust teaching strategy and for the students to adjust self-study strategies.

The increased classroom time impacts the quality of teaching as well. The extra eight-hour a week in the classroom for Indian teachers eats into the time available for research, course revisions, development of new courses, and cross-disciplinary collaborations. This negatively affects the quality and currentness of teaching. The classroom time of two to three hours a course a week in the EU and North American universities, with a total teaching load of two to three courses a semester brings the average weekly classroom teaching load of a typical university teacher in these countries to nine hours. In contrast to this, an average Indian faculty is expected to teach 14-16 hours a week, with time spent in the classroom varying from eight-16 hours depending on how flexible the institutional administration is in interpreting University Grants Commission guidelines.

The centres of learning

Teaching a course as per the vision of the NEP 2020 includes designing the course, selection of reading materials, development and administration of assessments, as well as grading. This is in complete contrast to the earlier model where teachers were responsible mostly for classroom lectures with assessment and grading taken care of centrally by the affiliating university. The elite central universities, Indian Institutes of Technology, and the Indian Institutes of Management could be an exception to this with possibly fewer than eight hours a week in classroom teaching a faculty along with substantially higher resources. But it is important to note that the bulk of teaching and learning in India happens in public universities and colleges, and not in these elite institutions.

Thus, to realise the vision of the NEP 2020 fully, a serious reconsideration of the number of courses and classroom time a course in the new four-year undergraduate programmes across India is necessary. Doing so will improve the teaching and learning outcomes for Indian students putting them on a par with their global counterparts. It will also get students out of the habit of rote learning, improve their self-learning skills, and ensure their readiness for further higher-level educational pursuits.

Inputs by Devajyoti Tirthak, an educational researcher

PIONEER (P-6), 18 DECEMBER 2024

Why reading and writing matter more in the age of AI

BIJU DHARAMAPALAN

As AI grows increasingly sophisticated, our commitment to these skills will determine whether we remain active participants in innovation—or passive consumers

In an era increasingly defined by technological innovation, reading and writing—cornerstones of human intellect—are facing a profound transformation. While artificial intelligence (AI) bots like OpenAI's ChatGPT and Google Bard redefine the boundaries of information generation, the necessity of cultivating human literacy has never been more crucial. The transition from Neanderthals to modern humans (Homo sapiens) involved significant cognitive and cultural advancements, but Neanderthals themselves did not read or write. Reading and writing developed after modern humans became the dominant hominin species. These are not merely communication tools but exercises that keep our cognitive faculties sharp and resilient. When we read, our brains decode symbols, conjuring vivid images, emotions, and concepts. This intricate process activates the left temporal cortex, which is responsible for language processing, and strengthens neural connectivity. Studies

underscore that reading enhances memory, concentration, and analytical thinking. Engaging with diverse genres deepens empathy and broadens perspectives, fostering a nuanced understanding of the world.

Writing, on the other hand, is an intellectual partner to reading. Crafting words—whether in a journal, essay, or story—requires us to organise thoughts, synthesise ideas, and express them clearly. This process activates the prefrontal cortex, the brain's hub for decision-making and problem-solving. Writing is more than an intellectual task; it is therapeutic. Research shows that expressive writing can alleviate stress, enhance mood, and even bolster the immune system.

The tactile act of writing also strengthens memory, embedding information deeply within our minds. Reading and writing foster neuroplasticity, enabling the brain to adapt and form new connections. They are antidotes to cognitive decline and shields against neurodegenerative diseases like Alzheimer's. Regular engagement with these skills cultivates intellectual independence, creativity, and emotional depth—uniquely human attributes.

Yet, as AI bots revolutionise the way we consume and produce information, there is an alarming decline in human literacy. Tools like Book AI, which transforms any book into a conversational chatbot, exemplify AI's capacity to digest and reproduce complex information effortlessly. AI lacks the intrinsic human qualities of creativity, empathy, and ethical judgment. As AI literacy surges, the stagnation of human literacy risks creating a dangerous imbalance. Over-reliance on AI can diminish critical thinking and communication skills, weakening the very attributes that distinguish humans from machines.

While the fear of displacement is understandable, the answer lies in shifting our perspective. AI is not an adversary but a powerful partner that can amplify human capabilities and drive innovation. Individuals can leverage their unique strengths to complement AI capabilities by prioritising the development of reading and writing skills. In an environment controlled by artificial intelligence, these abilities are necessary to navigate complicated concepts, understandably articulate them, and affirm human importance. The development of artificial intelligence highlights the significance of human expertise rather than diminishing it. By committing to studying throughout our lives, we can ensure that technology will not replace our humanity but rather improve it.

(The writer is an adjunct faculty at the National Institute of Advanced Studies; views are personal)

DECCAN HEARLD (P-7), 19 DECEMBER 2024

Making school excursions safe

MATHEW C NINAN

Excursions are among the most cherished memories of school life. In earlier times, excursions and picnics were an integral part of the academic calendar. Today, however, many schools avoid organising excursions for various reasons.

Last week, a tragic incident occurred on the Murdeshwar coast, where four 15-year-old girls from a school in Kolar drowned in the rough sea. Following the incident, the school principal was suspended, and five guest teachers who accompanied the students were dismissed. As is customary, an inquiry has been ordered.

Such tragedies often lead to temporary public outcry and media coverage. However, they are quickly forgotten by the public, while the affected families and the school suffer long-lasting emotional and reputational damage.

Two years ago, a similar tragedy struck a school excursion group in Kerala, resulting in the death of five children and a teacher. While an inquiry and guidelines followed, their implementation and impact remain unclear.

Excursions, per se, are a valuable part of education and a wonderful source of knowledge, offering students experiential learning and exposure to the world beyond the classroom. However, when things go wrong, schools face severe repercussions, including legal battles and the burden of compensating families, often amounting to several lakhs of rupees. The trauma and ordeal last for several years.

Due to these risks, many schools avoid excursions altogether. Elite schools may organise foreign tours through private operators, catering primarily to affluent families. Middle-class parents who can afford it may take their children on trips independently. However, most teenagers prefer travelling with their friends, as school excursions provide a unique blend of fun, camaraderie, and learning under the guidance of experienced teachers and guides.

What about students from less privileged backgrounds? School excursions are often the only opportunity for children from such backgrounds to explore the world. Authorities should support such schools proactively with logistical and financial assistance to ensure safe and enriching trips.

The key question is: Can we make excursions safe? The answer lies in adhering to safety guidelines issued by various departments and regulatory bodies.

- Schools must adopt strict protocols when organising an excursion to prevent mishaps.
- Buses and drivers must be certified fit by the regional transport officials before every excursion.
- Speed governors should be installed in the buses, and authorities must specify safe speed limits. The school authorities should comply with them.
- Buses should have bars across the windows to prevent students from sticking out their hands or heads.
- Emergency doors, GPS, CCTV, and fully equipped first-aid kits are essential.

Night travel by buses should be banned for excursion groups. It is often done to save expense, but they make two mistakes: They deny sightseeing to children and expose them to the risk of serious accidents. More such accidents are reported at night and in the small hours of the day.

There should be experienced teachers accompanying the students in a 1:10 ratio. The total number in a group should not be more than the seating capacity of the bus. Students should be divided into batches of 10 under a teacher during the entire trip. Female teachers with sufficient experience should be included, based on the number of girls in the group.

Drowning incidents alarmingly common. Many students, inexperienced in swimming, venture into dangerous waters, risking their lives. In the recent Murdeshwar tragedy, the students reportedly ignored lifeguards' warnings. Coastal Karnataka witnesses frequent drowning incidents, highlighting the need for stricter preventive measures.

Mobile phones are yet another cause of many mishaps. Cliffs and precipices are favourite vantage points for selfies. But they are also beset with serious risks. Like water bodies, selfies at such locations should be a strict no-no during excursions.

Many such safeguards should be part of every excursion. Most importantly, the students and the teachers should undergo an orientation by an expert before they set out. The entire group must follow a leader who must be a capable teacher. Discipline and safety must be the watchword. Guided freedom makes for a safe and pleasant excursion.

(The writer is Director, Little Rock Group of Institutions, Udupi)

ECONOMICS TIMES (P-8), 19 DECEMBER 2024

A NEET Plan to Nix Exam Disruptions

If India aspires to be a knowledge economy, establishing a robust, foolproof testing agency to accurately assess and grade students' capabilities and expertise is indispensable. GoI set up the National Testing Agency (NTA) in 2017 to achieve this goal: conducting entrance exams for admissions and recruitment for various universities and higher education bodies. But the NEET-UG paper leak earlier this year exposed significant flaws in NTA, prompting GoI to establish a panel under former Isro chief K Radhakrishnan to review its processes and mandates.

On Tuesday, the panel released its report, recommending the restructuring of NTA and keeping its primary focus on conducting entrance exams. It advocates that NTA should focus solely on higher education entrance exams, not recruitment exams, perfecting their delivery by improving internal capacity and functionality. To achieve this, it emphasises engaging qualified personnel and strengthening linkages with institutions and regulators on whose behalf NTA administers tests. This is good advice. It also suggests setting up a governing body with three designated sub-committees to oversee test audit, ethics and transparency, nomination and staff conditions, and stakeholder relationships. Also, stronger measures to curb malpractice, including improved systems and access, more robust authentication processes, and better student interfaces and testing methods are required. Root causes like weaknesses in school education and growing reliance on coaching schools are also identified.

The panel provides a clear pathway for building a robust institution. The education ministry, now reviewing the report, should incorporate its suggestions. NTA will always be a work-in-progress, as it should be. ET/8

MILLENNIUM POST (P-11), 19 DECEMBER 2024

CO-OP EDUCATION: BRIDGING THE GAP BETWEEN ACADEMICS & INDUSTRY

Co-op programmes are most effective when they replicate the dynamics of real-world workplaces

ANINDITA ACHARYA

In 2024, IIT Guwahati strengthened its global and local collaborations, significantly boosting its influence and reach. Partnerships with universities in Canada, Japan and Thailand extended its global presence, while regional initiatives like the Entrepreneurship Development Programme with the Assam Government and a mega Science and Math Olympiad engaging over 100,000 students underscored its commitment to local progress. Similarly, IIT Delhi's industry-academia collaborations offered valuable opportunities to address global challenges. These included projects with Israel Aerospace Industries for applied research, Info Origin for advancements in generative AI, and the Federation of Automobile Dealers Associations for an advanced certificate programme in automotive operation and future technologies. Such collaborations between industry and academia are essential for economic growth, as they drive innovation, create jobs, and support the development of advanced technologies. These partnerships are also critical in helping students transition from academics to the corporate world.

Co-op (cooperative) education programmes are gaining popularity globally as a key component of this transition. Employers are increasingly investing in co-op courses to train and hire skilled students. Co-op education, a form of hands-on learning, allows students to blend academics with work experience. By working at leading companies like Google and Amazon while studying, students gain confidence, maturity, and cutting-edge skills that prepare them for their careers.

Countries like the USA, Canada, Germany, and India have embraced co-op programmes. For India, where unemployment remains a challenge, co-op education holds immense potential. To support this, the National Centre for Cooperative Training (NCCT), under the Ministry of Agriculture and Farmer's Welfare, works to organise, monitor, and evaluate co-op training across the country.

However, co-op programmes differ from internships. In India, internships are more common and offer short-term exposure to the professional world, typically lasting a few weeks or months. In contrast, co-op programmes involve full-time work for six months to a year, requiring 35–40 hours of weekly commitment. Co-op students pause their academic classes during this term and earn academic credits for their work, often helping to offset tuition fees. This approach allows students to gain substantial work experience. On the other hand, interns often juggle classes or work part-time during vacations, resulting in a more limited experience compared to co-op students.

"Co-op education programmes and internships are most effective when they replicate the dynamics of real-world workplaces. These initiatives should include project-based work, mentorship, and chances for students to apply their academic knowledge to actual challenges in the workforce. With initiatives like the government's recent launch of a PM internship scheme, the number of applicants has surged. Also, industry leaders may not always have the expertise to onboard and nurture interns effectively. In such cases, outsourcing the onboarding and orientation process can be immensely helpful. Educational institutions can build strong collaborations by co-developing curricula that meet evolving industry needs, inviting professionals for guest lectures, and organising workshops, that simulate real-world challenges," said Pallavi Jha, MD and chairperson Dale Carnegie Training India and Walchand PeopleFirst Ltd.

A 2022 Mentoring in the Workplace report by HR.com found that 36% of organisations still lack a formal mentoring programme, highlighting significant room for growth in this area

According to Dr Satyabrata Minaketan, Chairman of ODM Educational Group, when governments, tech companies, and communities join forces, the results can be transformative. Take Google's Project Navlekha, which digitised regional language content to make it more accessible. Moving forward, institutions can encourage similar partnerships. A mentoring programme is also highly beneficial for both mentors and mentees while also aligning with organisational objectives such as hiring, retention, and improved performance outcomes. The return on investment for mentoring initiatives is substantial, often offsetting costs through reduced employee turnover. For example, a five-year Gartner study at Sun Microsystems revealed that mentoring significantly increased retention rates—72% for mentees and 20% for mentors compared to those not involved in mentoring. These findings were echoed by a 2019 survey from CNBC and SurveyMonkey, which showed that 40% of employees without a mentor considered leaving their jobs. Despite these advantages, a 2022 Mentoring in the Workplace report by HR.com found that 36% of organisations still lack a formal mentoring programme, highlighting significant room for growth in this area.

Mentorship also plays a vital role in helping students navigate the transition from academics to the professional world. For instance, XLRI's PGDM (GM) programme emphasises mentorship as a core component. Students are paired with experienced mentors who excel in personal, academic, and professional domains. These mentors provide guidance and support, positively influencing the students' professional and personal growth during and after the programme. "To promote effective mentorship, organisations should provide structured programs with clear objectives, regular check-ins, and the right training for mentors. Mentors should be equipped with the skills to actively listen, set goals, provide constructive feedback, and support mentees through their career journey. By fostering a culture of mentorship, organisations can ensure their employees or students receive the guidance necessary for long-term success," said Jha.

MILLENNIUM POST (P-11), 19 DECEMBER 2024

CEO SPEAKS

BEYOND CLASSROOMS: SHAPING TALENT THROUGH PARTNERSHIPS

DR SANKU BOSE

The world of work is evolving faster than ever in today's digital age. As industries embrace automation, digital transformation, and artificial intelligence, they demand not only domain expertise but also adaptability, collaboration, and the ability to integrate seamlessly into dynamic workplaces. Unfortunately, many fresh graduates are left grappling with this transition.

The gap between academia and industry has long been a concern, and unless we address this divide, India's demographic dividend could risk turning into a missed opportunity. Hence, mentorship, internships, and collaborative education models emerge as crucial tools to bridge this chasm. These frameworks do not merely impart technical know-how but mould graduates into workforce-ready professionals with relevant skills, confidence, and industry awareness.

Cooperative (Co-op) education and structured internships are powerful learning tools that integrate academic learning with hands-on industry experience. These programmes allow students to rotate between the classroom and professional environments, applying what they learn in real-world settings. Research underscores their significance. A study by the National Association of Colleges and Employers (NACE), USA revealed that students who participate in structured internships are 50% more likely to receive job offers and demonstrate greater adaptability to new work environments.

Multiple leading educational institutes have already integrated this new paradigm into their pedagogy. At Northeastern University, USA students engage in six-month-long co-op programmes that align closely with their academic majors. By graduation, students often complete multiple co-ops, allowing them to build a robust resume and professional network. This model produces graduates who are not just knowledgeable but confident and ready to contribute meaningfully from day one. Closer home, educational institutions such as SRM Institute of Science and Technology and Vellore Institute of Technology (VIT) are adopting similar approaches. Both institutes have integrated semester-long internships, working with corporate partners to offer live projects and mentorship. These practical experiences provide students with far more than technical abilities—they enhance communication, teamwork, and time management skills, ensuring they graduate as complete professionals.

> The National Education Policy (NEP) 2020 has laid the foundation for this shift by emphasising skills-based education and industry partnerships

While internships focus on real-world learning, industry partnerships play a critical role in bridging the skills gap that has plagued India's higher education system for years. According to the India Skills Report 2023, only 50.3% of graduates are employable. While theoretical knowledge is abundant, practical skills often remain underdeveloped. Industry-academia collaboration can address this by tailoring educational programmes to align with real-world needs. Corporations can help update syllabi to include the latest technologies and processes, train faculty to align their teaching methods with current advancements and trends and offer students exposure to live industry challenges through case studies, projects, and hackathons.

IIT Madras is leading the way in redefining corporate involvement in education. Its Research Park, housing over 250 corporate R&D centres, enables students to work alongside industry professionals on cutting-edge projects. With more than 1300 patents filed and 200 plus startups incubated, the success of this model doesn't need any further validation. Startups like Ather, Uniphore and Agnikul Cosmos are reshaping their respective sectors! This not only enhances learning but also provides companies with a pipeline of trained, innovative talent. Globally, Germany's dual education system has set a gold standard by ensuring that students spend almost half their academic period in practical training with companies. Industries co-design the curriculum ensuring graduates emerge with skills that meet market demands. Replicating similar frameworks in India can significantly reduce the employability gap and produce graduates who are ready to hit the ground running.

While internships and industry partnerships address the practical skill gap, mentorship plays an equally transformative role in shaping professional growth. A mentor acts as a guide, offering insights, sharing experiences, and helping mentees navigate the challenges of career-building. A LinkedIn report highlights that the vast majority of professionals believe mentors are critical to their career success, while the Harvard Business Review (HBR) notes that employees with mentors show improved confidence, leadership abilities, and job performance.

Across institutions, mentorship frameworks are becoming deeply integrated into academic structures. At Stanford University, alumni actively mentor students, providing career guidance and offering valuable perspectives on entrepreneurship, leadership, and industry trends. In India, the Indian Institutes of Management (IIMs) have pioneered similar approaches. At IIM Ahmedabad, students are paired with seasoned corporate leaders who help them understand market realities and the leadership challenges they will face. These mentorship programmes are transformative, not just because they impart knowledge but because they nurture networks, build emotional intelligence, and equip students to adapt, innovate, and excel in the workplace.

The benefits of mentorship, industry partnerships, and co-op education extend beyond mere employability. They equip students with the ability to adapt in industries that change overnight, hone collaborative skills by working in diverse teams, and foster an innovative mindset that focuses on solving real-world problems. Graduates who undergo such frameworks transform from being raw newbies to confident professionals ready to contribute meaningfully from day one.

The path forward requires a cohesive strategy involving educational institutions, industries, and policymakers. Institutions must proactively seek out collaborations with industries to co-design curricula, promote real-world exposure for students, and enable faculty upskilling. Corporations, on their part, must invest in mentorship initiatives, internships, and collaborative projects to ensure a pipeline of skilled and adaptable graduates. Policymakers, meanwhile, must provide incentives that encourage these partnerships to flourish, creating a win-win ecosystem for academia and industry alike.

The National Education Policy (NEP) 2020 has laid the foundation for this shift by emphasising skills-based education and industry partnerships. However, its successful implementation remains critical. If scaled effectively, these models will ensure that every student—irrespective of background—has access to opportunities that can shape their careers and lives.

The future of work demands professionals who are skilled, adaptable, and equipped to innovate in dynamic environments. In this ever-changing landscape, education must evolve to stay relevant. We need to build a generation of graduates who are ready to thrive, not just survive. The future belongs to those who learn beyond classrooms, and it is our collective responsibility to make that future a reality.

The author is the Group CEO of Techno India Group, a visionary and an educator. Beyond his corporate role, he is also a mentor who guides students towards resilience and self-discovery

Views expressed are personal

PIONEER (P-7), 19 DECEMBER 2024

Education: From Kothari Commission to NEP-2020

J S RAJPUT

The educators and policymakers are called upon to transcend ideological divides and lead India toward inclusive progress and innovation

The most comprehensive initiative in education in post-independence India was the report of the National Commission on Education, usually referred to as the Kothari Commission. It submitted its report entitled "Education for National Development' on June 29, 1968. The first two sentences say it all: "The destiny of India is now being shaped in its classrooms. This, we believe, is no rhetoric." It was this report that led to the first national education policy of 1968. For the first time, science and mathematics became compulsory for both boys and girls up to tenth standard!

Yes, it was generally believed that only boys could handle the tough subjects of science and mathematics, and girls could opt for lighter options of spinning weaving, home science and the like! The compulsory study of science and math was resisted and opposed as being unjust and unfair to girls! This one change transformed the lives of millions of girls and has brought global accolades to the Indian advancements in the world of science, technology, ICT and space research. Policies once formulated and formalised deserve support in vigilant implementation, persistent monitoring, and scrutiny based on their relevance 'in the great enterprise of national reconstruction'. India today has great challenges ahead, both national as well as global.

It has the manpower and enough experience to confront these successfully. In the third decade of the 21st century, it's the quality of education and skill acquisition that would equip India shall remain its prime contributory tool against every challenge. The content and process of education shall have to specifically equip itself against nurtured negativity, increasing mutual distrust and ballooning bitterness in public life. Solutions shall certainly not emerge from those that thrive only on negativity and are ill-equipped to see light and positivity around them.

> THE CONTENT AND PROCESS OF EDUCATION SHALL HAVE TO SPECIFICALLY EQUIP ITSELF AGAINST NURTURED NEGATIVITY, INCREASING MUTUAL DISTRUST, AND BALLOONING BITTERNESS IN PUBLIC LIFE

Who must come forward and accept responsibility to normalise such an unacceptable socio-cultural environment? Why not ask the Gandhi ji? Once, before independence, one Dr Mote posed a query to Mahatma Gandhi: what he thought was the greatest problem facing his country! The expected answer could have been, in those days, related to slavery, poverty, illiteracy, ill health, or in the social context.

While narrating it in his Gandhi Katha, Narayan Desai tells the audience: that the answer was the 'callousness of the intellectuals'! Narayan Desai Goes ahead: "Give it a thought. If we stand by and watch the poor blaming their poverty on fate, Gandhi is relevant today. If we can see the callousness of the intellectuals, then Gandhi is relevant today. What are the problems according to intellectuals?

'Why X or Y has become Vice-Chancellor and not me'! They think only of this and are unaware of other social issues". Their concerns for critical social, cultural, social cohesion and religious amity are minimal.

One's obvious inference would be that solutions to major national concerns shall - and must - emerge from institutions and the educated and the learned responsible for attaining their stated objectives. It includes the dilapidated structures running Sarkari schools, much sought-after private schools, and the universities. It also includes the glittering campuses of national institutions that have brought international repute to our educational enterprise.

So, mainly it points out to teachers: from primary schools to professors of the universities, and researchers working in institutions of science, technology, psychology, social sciences and every other area.

One wishes each one of them recalls the assessment of Gandhi shuns away the dreaded callousness and strives to create centres of dialogue and discussions on improving the life and living standards of our people, particularly the 'last man in the line' who was so dear to the Mahatma! At first glance, the existing climate makes such a transformation rather impossible!

Despite all the odds, sincere attempts must be launched to create institutional think tanks with open boundaries that provide for healthy academic, scholarly and intellectual deliberations, not constrained but individual ideological affiliations. For an academic, who shapes the lives of numerous individuals, it is the well-being of others that must precede his own!

And this is no rhetoric or a cliché in the Indian context and culture. For a broad-minded person, this becomes a must, an integral part of his thought and action and hence, an achievable premise.

This is the main task of every teacher preparation institution, from where it shall percolate to schools via teachers trained there, and then to the establishment and the society. After the education policies of 1968, 1986 and 1992, and a gap of around three decades, another policy formulation comes before the nation in the shape of the National Education Policy: NEP-2020. It has been under implementation for the last four years. Having been associated with the implementation and also policy formulations, one could venture to infer that the NEP-2020 was prepared with unprecedented enthusiasm from teachers, scholars academics institutions, organisations and individuals.

As the process was long overdue and rightly very extensive, it inspired active participation from practically every section of society. Unfortunately, its implementation stands hampered in certain states on grounds that may not necessarily be academic.

India has a developed well-knit interactive system of the national and state-level bodies and institutions that have learnt over the years how to arrive at a national consensus in the sectors of education and teacher education. This institutional strength of consultation, collaboration and cohesion need not be diluted in cases where the union and state governments belong to different ideological affiliations.

Intellectuals in education and research must convincingly internalize that they are making the future of individuals and creating the future of India. No one else is destined and better placed than them to reconstruct India. The moment each one of them expands his horizons, thinks holistically, and takes a long-term view, the road ahead would emerge very clearly: how to proceed individually and also collectively to sed the intellectual callousness and lead the nation on the right path.

(Professor Rajput works in education, social cohesion and religious amity. He is Atal fellow with the PMML, New Delhi; views expressed are personal)

...l for cybersecurity in a rapidly evolving digital space

NAV BHARAT TIMES (P-12), 19 DECEMBER 2024

अमल का सवाल

नैशनल टेस्टिंग एजेंसी (NTA) अब केवल कॉम्पिटिटिव एंट्रेंस एग्जाम कराएगी। माना जा रहा है कि एजेंसी का वर्कलोड कम होने से वह ज्यादा फोकस्ड होकर काम कर पाएगी। यह कदम NTA की साख को बचाने और इस साल हुए पेपर लीक कांड की वजह से इमेज पर लगे धब्बे को मिटाने के लिए जरूरी भी था।

ज्यादा बोझ | इस साल NEET विवाद के बाद सरकार ने जो समिति गठित की थी, उसकी सिफारिश है कि क्षमता बढ़ाने के बाद ही एजेंसी को बाकी परीक्षाओं का आयोजन करना चाहिए। इस संस्था की स्थापना राष्ट्रीय स्तर पर होने वाली परीक्षाओं में पारदर्शिता, विश्वसनीयता और एक समान प्रणाली सुनिश्चित करने के उद्देश्य से की गई थी। यह विचार अपने आप में ठीक है कि किसी प्रतियोगी परीक्षा में देशभर के स्टूडेंट्स को एक जैसा मौका मिलना चाहिए। हालांकि इस पर अमल में बहुत सारी गड़बड़ियां पाई गईं।

NTA: वर्कलोड कम होगा

NEET पर निर्णय | NEET पेपर लीक को लेकर देश में जिस तरह का हंगामा हुआ था और कई राज्यों में विवाद खड़े हुए, उसे NTA का सबसे लो पॉइंट कह सकते हैं। इसने स्टूडेंट्स के विश्वास को हिलाकर रख दिया। यही वजह है कि केंद्रीय शिक्षा मंत्री धर्मेंद्र प्रधान ने खासतौर पर NEET का जिक्र करते हुए कहा कि इसे किस मोड में करवाना चाहिए, इस पर बातचीत चल रही है।

सिफारिशें अहम | ISRO के पूर्व प्रमुख के राधाकृष्णन की अध्यक्षता में गठित समिति ने साफ-सुथरी परीक्षा के लिए कई और सुझाव दिए हैं। परीक्षा केंद्र चुनने के लिए डेटा एनालिटिक्स का प्रयोग, पेपर लीक जैसी घटनाओं से बचने के लिए हाइब्रिड मॉडल जिसमें कंप्यूटर के साथ पेन-पेपर का भी इस्तेमाल हो और डिजी यात्रा की तर्ज पर डिजी एग्जाम जैसे उपाय नैशनल टेस्टिंग एजेंसी के काम को और बेहतर बनाने में मदद कर सकते हैं।

सबसे बढ़कर छात्र | नैशनल टेस्टिंग एजेंसी ने 2024 में 29 परीक्षाएं आयोजित कीं, जिनमें 85.78 लाख स्टूडेंट्स रजिस्टर्ड थे। हालांकि 2023 के मुकाबले यह आंकड़ा काफी कम है। तब एजेंसी ने 66 परीक्षाएं संभाली थीं और उनमें 1.33 करोड़ स्टूडेंट्स ने रजिस्ट्रेशन कराया था। इससे साफ है कि NTA पर कितनी अहम जिम्मेदारी है। परिणाम तो बाद की बात है, पहले यह देखना जरूरी है कि परीक्षा कराई कैसे जाती है। इस नुक्ते पर आकर बच्चों की महीनों की मेहनत, भविष्य के सपने और उम्मीदें- सब कुछ NTA पर टिके होते हैं। इसमें दो राय नहीं कि ये सिफारिशें पहली नजर में उपयुक्त लग रही हैं, लेकिन इनकी असल परीक्षा व्यवहार में ही होनी है। देखना होगा कि इन सिफारिशों पर कितना सुसंगत अमल हो पाता है।

Why Trump Must Back Proposed H-1B Rule

Over the last four years, Joe Biden has made significant strides in positioning the US as a global leader in the digital and green economy. Earlier this week, his administration proposed a rule aimed at reinforcing this leadership. The US Citizenship and Immigration Services (USCIS) seeks to redefine what qualifies as a 'US employer'. Among its key provisions, the proposed change would allow foreign nationals to be sponsored for H-1B positions by companies they own, unlocking new opportunities for entrepreneurial talent worldwide.

As the global economy increasingly shifts toward digitalisation and sustainability, entrepreneur-innovators are emerging as crucial players. However, systems that impose roadblocks for this new breed of entrepreneurs are not just outdated, they also hinder economic progress. The proposed rule is a timely intervention to enable the US to attract talent. This change is also a smart move for job creation, and spurring innovation.

President-elect Donald Trump, with his promise to 'Make America Great Again', should lend his support to this initiative. It aligns with the goal of strengthening the nation's economy by fostering an environment that attracts the brightest minds. By opening its doors to entrepreneurial talent, the US not only enhances its competitiveness but also sets a precedent for other nations. This forward-looking step could ignite healthy competition among countries to attract innovators, creating a ripple effect of economic growth. For nations like India, the benefits extend beyond individual entrepreneurs. Partnerships forged in the US can drive technological advancements and growth back home. Such cross-border collaborations create a win-win scenario for both host and home countries, establishing a framework for mutual prosperity that mirrors the benefits of skilled migration. ET/8

HINDU (P-9), 20 DECEMBER 2024

NOTEBOOK

The social character of scientific knowledge

In science, not knowing is ubiquitous. The problems arise when we don't know, or choose to overlook, where science ends and faith begins

Vasudevan Mukunth

Many of us want to know how the SARS-CoV-2 virus originated. To do that, right now we need to unravel its evolution from its bat coronavirus ancestor by sequencing the genomes of animals and viruses near the outbreak site and we need to effect China's cooperation to check whether SARS-CoV-2 could have 'leaked' from a lab. Where the virus came from was once singularly important because the answer could have pointed the way to avoiding similar outbreaks in future. But today, there is good reason for this question to take the back seat.

We don't know where or how the virus originated. If it did in a lab, we would have to re-examine how we regulate research facilities and their safeguards and the manner of political oversight that won't curtail research freedom. If the virus is au naturel, we would have to institute and/or expand pathogen surveillance, eliminate wildlife trafficking, and improve social security measures to ensure populations can withstand outbreaks without becoming distressed. But even as these possibilities aren't equally likely (according to scientists I trust), the origin of SARS-CoV-2 is less important than it once was because the COVID-19 pandemic caused us to implement all these outcomes to varying degrees.

SARS-CoV-2 isn't special of course: it's still difficult to conclusively say what really happened with many things, scientifically. In 1977, a telescope in the U.S. recorded a signal from outer space that remains strange to this day. We don't have a physical explanation for the "spooky" result of an experiment Anton Zeilinger and co. conducted in 1998. We lack a complete understanding of how general anaesthesia works its magic on the brain. Not even their makers fully know how powerful AI models work the way they do. No existing theory of nature can say what happens in intervals shorter than 10^{-43} seconds.

In fact, not knowing is ubiquitous. To quote philosopher Nicholas Rescher, "no one can say in advance what questions natural science can and cannot answer." But science communication has taught me not all of us can know everything unless we invest considerable, perhaps even impossible, resources. Years ago, the philosopher Daniel Sarewitz wrote an article that changed my relationship with science. He argued that while we may know about the Higgs boson particle and that it gives other elementary particles their masses, we can't truly know any of this until we learn the complicated mathematics required to make sense of it. Until then, we just have faith in the physicists who know. This relationship goes for most technical information in our lives.

Science journalists like me communicate science by providing for scientists' claims, to quote Rescher, "the backing of a rationale that renders [their] correctness evident", but I still demand a considerable amount of faith from readers. At some point faith also becomes trust but trust still isn't understanding. (This said, the system of sanctions should they err provides a reasonable backstop for trust in scientists' and journalists' work.) The general idea here is that you pick someone you trust and you believe what they say to be true. Let's call this the social character of scientific knowledge.

When people encounter a weighty concept scientists aren't able to explain fully, the social character becomes more apparent than it normally is. Some people trust impassioned scientists unwilling to consider extra-scientific possibilities. Some lean towards authority figures who don't trust science to provide the answer. Historically, people have turned to faith in the face of the unknown. The problems arise when we don't know, or choose to overlook, where science ends and faith/trust begins. Then we fixate on answers that may never matter at the expense of answers that are already useful.

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HINDUSTAN TIMES (P-12), 20 DECEMBER 2024

Five principles integral to better schooling systems

A study recently published by the World Inequality Lab at the Paris School of Economics says that China's manufacturing and productivity leap is rooted in more than 40% of its youth pursuing vocational education in the 1980s, as compared to India's 10%. B Sekhar's recent analysis for the Public Report on Secondary Education (PROSE) study, based on household data from the National Sample Survey and the National Family Health Survey, also highlights the large gaps in access and quality in secondary/vocational education. The PROSE study is a serious effort to understand how India's education and skilling system can contribute to higher productivity and higher wages of dignity.

The most damning statistic on the neglect of primary education in India in the first four decades of freedom comes from the 42nd round of the National Sample Survey (1986-87), which found 69.23% of aged six-plus females in rural India never enrolled in a primary school. Surely, a few high-quality higher education institutions can't make up for India's neglect of primary education.

Amarjeet Sinha

Why has India's schooling system not done better? Lucy Crehan, a British school teacher who wrote about five high-scoring countries in the learning-outcome benchmark Programme for International Student Assessment (PISA) test, provides some answers. Crehan says that in Finland, Singapore, Japan, Canada, and Shanghai (China), five principles explain high-performing, equitable schooling.

Principle 1 – Get children ready for formal learning: Despite India's education policy recognising the need to prepare the country's children for formal learning, investments have not kept pace. The Integrated Child Development Services (ICDS) that engages the *anganwadi sevika* and helper for children aged zero-six years for four to six hours a day (*anganwadi sevikas* are paid a monthly honorarium that is less than minimum wage, and therefore longer working hours are virtually ruled out) is seen as the point for readying children for formal learning. Unfortunately, its coverage is not universal, and curricula are often not fully aligned with those of schools. Finland does not teach anything till age seven as children till that age group only play and learn.

The teacher-pupil ratio in Finnish schools is much lower and the teachers are trained to keep academics out as they promote the communication skills of children and learning by doing. ICDS, in India, has ended up as more of a hot-cooked-meal centre. The new National Education Policy (NEP) tries to bring preschool closer to formal school, both physically and pedagogically. We will need to raise a cadre of well-trained nursery teachers who make learning happen without burden.

Principle 2 – Design curricula concepts for mastery (and context for motivation): Crehan, being a teacher herself, identifies the following as a good national/provincial curriculum — minimal (focusing on fewer topics, but in greater depth), high-level (clear on what concepts and skills are required without prescribing context or pedagogy), and ordered (organising concepts in a logical order, based on research into how children learn). An over-defined curriculum framework often takes away the autonomy of the school or the teacher. While there is a case for a common curriculum, it must have opportunities for development of teaching and learning methods that respect local contexts. In India, while there are many assessment boards, there is still a need to have a standardised curriculum that allows large-scale local experimentation.

Principle 3 – Support children in taking on challenges, rather than making concessions: All school systems that perform well in PISA never give up on any student. The system is geared to ensuring a basic level of proficiency. No dilution of standards is ever attempted to improve school results. Singapore is an exception, starting "streaming very early". In the other high-performing jurisdictions, the vocational and academic pursuits are organically linked, and the progression is smooth. There is enough evidence to suggest that streaming for vocational very early may lead to compromises on skilling and productivity.

Reducing pass marks is clearly not the way to build a successful school system. Children from underprivileged homes need even greater learning and financial support. Lowering standards is only a way of playing with the students' careers. There must also be a robust system of teacher performance assessment and accountability.

Principle 4 – Treat teachers as professionals: This is where each of the five well-performing regions invests a lot. The professional development of the teacher is central to the schooling process.

India has serious challenges in the governance environment of the teacher development process. Despite efforts of the National Council of Teacher Education, the teachers being readied for the school system are not adequately equipped in most cases. For India to match China, we need to overhaul the teacher development system, improve the service condition of teachers, and make teachers socially respected far more than present.

Principle 5 – Combine school accountability with school support: School inspector *raj* is no way to improve schools; teachers need support to remove deficits that compromise learning in schools. Decentralised community action with adequate untied resources will empower local initiatives of teachers at the school level. India has a long way to go to develop good quality schooling from below. The PROSE study hopes to provide answers to many of the schooling and skilling challenges from the perspective of households, students, teachers and instructors.

WHILE THERE IS A CASE FOR A COMMON CURRICULUM, IT MUST HAVE OPPORTUNITIES FOR LOCAL DEVELOPMENT OF TEACHING AND LEARNING METHODS THAT RESPECT LOCAL CONTEXTS.

Amarjeet Sinha is senior fellow at Centre for Social and Economic Progress, coordinating the work of the PROSE study. The views expressed are personal.

PIONEER (P-7), 21 DECEMBER 2024

Patent risks: Key strategies for businesses amid rising litigation costs

Businesses today must adopt proactive strategies like Freedom-to-Operate searches and patent liability insurance to mitigate risks and protect their inovations

AMIT SINGH

In November 2024, a US jury ruled in favour of Netlist, a company specialising in computer memory and storage solutions, ordering Samsung to pay $118 million in damages for wilfully infringing Netlist's patented technology. This follows an earlier verdict in April 2024, where another jury found Samsung guilty of similar patent infringements, awarding $303 million to Netlist. Together, these penalties amount to $421 million-an extraordinary sum that could destabilise even the most established organisations.

In India, the Delhi High Court recently delivered a landmark judgment favoring the plaintiff, Amneal Inc., in a patent infringement case against Mobi Antenna Technologies. The court issued a permanent injunction against the defendant and ordered them to pay damages of USD 26.84 million (INR 216 crores) to compensate for the plaintiff's loss of profits due to the infringement.

Protecting Intellectual Property: A recent American survey highlights the substantial financial commitment of research-based organisations in the pharmaceutical sector. The annual R&D budget in this industry often runs into hundreds of millions or even billions of dollars. The cost of developing a new drug ranges from $314 million to $4.46 billion, depending on the therapeutic area and assumptions used in data modeling. These figures emphasize the immense investments required in R&D, making intellectual property (IP) protection and preemptive strategies essential. In contrast, R&D expenditures in non-pharmaceutical sectors are generally lower. However, extensive patenting is increasingly common, posing risks for companies introducing new processes or products without adequate precautions. A company might unknowingly infringe on a competitor's patent, leading to unforeseen and costly litigation. Patent disputes can result in significant delays, financial losses, and reputational damage, even when unintentional.

Escalating Costs of Patent Litigation: The median cost of litigating a patent lawsuit through trial ranges from $600,000 for cases with less than $1 million at stake to $3.625 million for cases involving over $25 million. Similar trends are observed in India, where litigation and settlement costs are substantial.

Sometimes, defendants find themselves embroiled in patent litigation due to unintentional or inadvertent infringement. In such cases, the defendants are essentially victims, underscoring the need for safeguards to prevent unnecessary legal disputes.

Tools to Mitigate Patent Infringement Risks:

Patent Liability Insurance

One effective safeguard against the financial risks of unintended patent infringement is patent liability insurance. This insurance, provided by specialised firms, helps cover legal expenses and damages arising from unintentional infringements. While popular in several countries, its adoption is steadily growing in India.

Freedom-to-Operate (FTO)

Another cost-effective tool to minimise patent infringement risks is a Freedom-to-Operate (FTO) search. This process evaluates whether a new product or process infringes on existing patents, enabling informed business decisions and reducing the likelihood of legal disputes. Many companies conduct FTO searches before initiating new R&D projects to mitigate financial and reputational risks.

An FTO search involves analysing granted and pending patents to form a techno-legal opinion on whether a product, process, or service infringes existing IP rights. These searches can be conducted using free databases provided by intellectual property offices, with directories available on the World Intellectual Property Organization (WIPO) website.

When Patents Block Freedom to Operate

If an FTO search reveals conflicting patents, companies have several options:

1.Licensing Agreements: Companies can negotiate in-licensing or purchase patent rights to gain access to the necessary technology.

2.Patent Pools: Collaborative agreements among companies in the same technological field allow shared access to patents, resolving disputes and controlling costs, especially for essential products like medicines.

3.Designing Around: Companies can modify existing processes or products to avoid infringement.

Steps to Minimize Litigation Risks: Regardless of the strategy chosen, it is crucial for companies to address patent infringement risks early in the research and commercialisation process. Proactive measures such as in-licensing, cross-licensing, patent pooling, and designing around can help avoid future disputes.

A systematic FTO search before launching a new product is indispensable for minimising infringement risks. While an FTO search cannot completely eliminate the possibility of litigation due to limitations in patent databases and search expertise, it significantly reduces potential threats.

(The writer is deputy controller of patents and designs, Kolkata. : views are personal)

DAINIK JAGRAN (P-10), 21 DECEMBER 2024

दूर होता समान शिक्षा का लक्ष्य

प्रेमपाल शर्मा

दो तरह के पाठ्यक्रम नई शिक्षा नीति के उस विचार की उपेक्षा ही करेंगे, जिसमें समान शिक्षा पर जोर दिया गया है

शिक्षा सुधार की प्रक्रिया में केंद्रीय माध्यमिक शिक्षा बोर्ड के 10वीं के छात्रों के लिए विज्ञान और सामाजिक विज्ञान में भी वैसे ही दो तरह के पाठ्यक्रम बनाने पर विचार हो रहा है, जैसा गणित विषय में पहले से ही है। अभी सीबीएसई 10वीं कक्षा में गणित बेसिक और गणित स्टैंडर्ड दो स्तर पर आफर किया जाता है। इसके आधार पर कुछ विद्यार्थी बेसिक गणित पढ़ते हैं और कुछ स्टैंडर्ड गणित। बेसिक गणित की तुलना में स्टैंडर्ड गणित कठिन होता है। स्टैंडर्ड गणित पढ़ने वाले विद्यार्थी ही आगे चलकर इंजीनियरिंग आदि की परीक्षा देने में समर्थ होते हैं। यहां तक कि 11वीं और 12वीं में भी गणित पढ़ने की आजादी इन्हीं छात्रों को दी जाती है। गणित विषय के संबंध में इस बात पर कुछ हद तक सहमत हुआ जा सकता है, क्योंकि इसकी कुछ कठिन परिकल्पनाएं एक स्तर के बाद काम नहीं आतीं। याद करें तो किसी वक्त नौवीं और दसवीं में लड़कियों के लिए गणित की जगह होम साइंस का विकल्प रहता था। हालांकि अब वक्त बदल गया है। समाज की समझ में भी यह बात आ गई है कि लड़कियां भी गणित और विज्ञान में उतनी ही प्रतिभा रखती हैं, जितना लड़के। यही कारण है कि इंजीनियरिंग कालेजों में 30 प्रतिशत लड़कियां इंजीनियरिंग पढ़ रही हैं। मौजूदा सरकार ने तो एक ऐतिहासिक कदम बढ़ाते हुए आइआइटी में 20 प्रतिशत सीट लड़कियों के लिए आरक्षित कर दी है, लेकिन दो अलग तरह के पाठ्यक्रम की यही बात विज्ञान और सामाजिक विषयों के लिए सही नहीं होगी।

विज्ञान और सामाजिक विज्ञान की शिक्षा ही बच्चों की समझ को मुकम्मल बनाती है। इसलिए इन विषयों को दुनिया भर में दसवीं तक अनिवार्य रूप से सर्वश्रेष्ठ ढंग से पढ़ाया जाता है। शिक्षा की बुनियाद यही विषय बनाते हैं। विज्ञान जहां बच्चों को तर्कशील प्रयोगधर्मी बनाता है, वहीं सामाजिक विज्ञान उनमें समाज, देश-दुनिया की राजनीति, अर्थशास्त्र और इतिहास की समझ पैदा करता है। लिहाजा इन विषयों की पढ़ाई हर बच्चे के लिए समान रूप से अनिवार्य होनी चाहिए। ऐसी शिक्षा ही उन्हें स्वावलंबी बनाएगी और यही लोकतंत्र के हित में भी है। दो तरह के पाठ्यक्रम बनाने के

सभी बच्चों को मिले एक जैसी शिक्षा • फाइल

पीछे बच्चों पर पढ़ाई के बोझ को कम करने का विचार हावी लगता है, लेकिन यह सच्चाई से बहुत दूर है। इसे कोटा या दूसरी जगहों पर छात्रों द्वारा की जा रही आत्महत्याओं से जोड़ना गलत होगा, क्योंकि उन बच्चों में मानसिक तनाव समाज एवं मां-बाप के दबाव और नंबरों की अंधी दौड़ की देन है। उन पर इन विषयों का दबाव नहीं है। देखा जाए तो शिक्षा का अर्थ केवल कक्षाएं पास करना या परीक्षाओं में कुछ नंबर ज्यादा लाना ही नहीं होता, बल्कि बच्चों को एक बेहतर नागरिक बनाना भी होता है। जैसे कि ब्रिटेन की शिक्षा प्रणाली करती है। वह कहती है कि "15 वर्ष की उम्र तक विद्यार्थी में पूरी दुनिया में घूमने और संवाद करने की क्षमता होनी चाहिए।" यह विज्ञान और दूसरे विषयों को और बेहतर ढंग से पढ़ने से ही संभव हो सकता है, पाठ्यक्रम की काट-छांट से नहीं।

नीति निर्धारकों को गणित के अनुभव से सबक लेना चाहिए। दिल्ली के महंगे निजी स्कूलों में सभी बच्चे जहां स्टैंडर्ड गणित पढ़ते हैं, वहीं सरकारी स्कूलों में ज्यादातर बच्चे बेसिक गणित। जहां स्टैंडर्ड गणित पढ़ने वाले बच्चों से इंजीनियर या डाक्टर बनने की उम्मीद की जाती है, वहीं सरकारी स्कूलों में छात्रों के करियर के प्रति एक उदासीन रवैया देखा जाता है। यदि विज्ञान और सामाजिक विज्ञान में भी यह वर्गीकरण कर दिया गया तो सरकारी स्कूलों की गुणवत्ता और गिर जाएगी। हमें सरकारी स्कूलों की शिक्षा को और बेहतर बनाने की जरूरत है, न कि और कमजोर करने की। हो सकता है कि ऐसे दोहरे पाठ्यक्रम की वजह से सरकारी स्कूलों में पढ़ने वाले छात्र और पीछे रह जाएं। यह कदम नई शिक्षा नीति के उस विचार को भी उपेक्षा करता है, जिसमें समान शिक्षा की बात कही गई है और जिसके तहत मेडिकल और आइआइटी जैसी संस्थाओं या पिछले दिनों केंद्रीय विश्वविद्यालयों में नामांकन के लिए समान प्रवेश परीक्षाएं शुरू की गई हैं। हमारे देश के निजी स्कूलों से निकले इंजीनियरों की क्षमता पर दुनिया भर में ऐसे प्रश्न उठ रहे हैं कि उनमें से 70 प्रतिशत डिग्री होने के बावजूद सक्षम नहीं हैं। ऐसी चुनौती के बीच तो हमें अपने पाठ्यक्रमों को और बेहतर करने की जरूरत है।

हालांकि नई शिक्षा नीति में पाठ्यक्रमों को मजबूत बनाने, प्राइमरी एवं उच्च स्तर की पढ़ाई अपनी भाषाओं में कराने पर जोर दिया गया है, लेकिन इस दिशा में अभी कोई विशेष प्रगति नहीं दिखी है। इसके अलावा 11वीं एवं 12वीं और दूसरे स्तरों पर अपनी मर्जी से विषय लेने की जो बात चार साल पहले हुई थी, उस दिशा में भी ठोस कदम नहीं बढ़ाए जा सके हैं। शिक्षा की पुरानी शैली यथावत जारी है, बल्कि उसमें और गिरावट आई लगती है, जिसका प्रमाण देश से बाहर जाकर पढ़ने वाले छात्रों की संख्या में अप्रत्याशित वृद्धि है। यह न भूलें कि शिक्षा प्रणाली में बदलाव भावी पीढ़ियों को भी प्रभावित करते हैं। पिछली सदी के छठे दशक में अंतरिक्ष विज्ञान में जब रूस आगे बढ़ता नजर आया तो अमेरिका ने अपनी विज्ञान नीति में आमूलचूल बदलाव किया, विज्ञान में आज अमेरिका दुनिया का अगुआ बना है। वक्त आ गया है कि दुनिया भर की शिक्षण पद्धतियों को सीखते हुए हम भी अपनी विज्ञान और सामाजिक शिक्षा को ऐसा बनाएं कि दुनिया भर के लोग भारत में पढ़ने के लिए लालायित हों।

(भारत सरकार में संयुक्त सचिव रहे लेखक शिक्षाविद् हैं)

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टैलंटेड स्टूडेंट्स को हायर करने के लिए हर तरीका अपनाती हैं कंपनियां

IIT प्लेसमेंट में भी पक्षपात?

प्रवीन मोहता

भारत के सबसे प्रतिष्ठित इंजिनियरिंग संस्थानों में शुमार IIT में हर साल दिसंबर में स्टूडेंट्स का प्लेसमेंट शुरू होता है। पिछले कुछ वर्षों से प्लेसमेंट सीजन हमेशा से सुर्खियां बटोरता रहा है। वजह होती है भारी-भरकम सैलरी पैकेज, लेकिन इस बार बात कुछ अलग है। IIT बॉम्बे ने प्लेसमेंट को साफ-सुथरा और पक्षपात रहित बनाने के लिए एक पैनल बनाया है। तो क्या IIT प्लेसमेंट में भी पक्षपात संभव है? IIT कानपुर के लोग खुले तौर पर मानते हैं कि चाहे-अनचाहे कुछ छात्रों को प्लेसमेंट में थोड़ा-बहुत फायदा मिल ही जाता है। इसकी वजह एक्स्ट्रा करिकुलर एक्टिविटीज भी हैं।

नेटवर्क इफेक्ट | IIT कानपुर में प्लेसमेंट से जुड़े रहे एक अधिकारी इस पूरे विषय को विस्तार से समझाते हैं। वह कहते हैं कि प्लेसमेंट में कुछ स्टूडेंट्स के लिए थोड़ा-बहुत पक्षपात तो होता है, लेकिन इसकी वजह पढ़ाई में बढ़िया प्रदर्शन के साथ अन्य गतिविधियों में उनकी सक्रियता है। जो स्टूडेंट्स पढ़ाई में आगे होते हैं, वे खेल, डिबेट और नेतृत्व में भी आगे रहते हैं। इससे उन्हें थोड़ी सहायता और पहचान मिलती है। जो क्लास में टॉपर है, उसके लिए साथी स्टूडेंट्स के मन में सॉफ्ट कॉर्नर होता है। टॉपर्स के अलग ग्रुप भी बने होते हैं। इसे नेटवर्क इफेक्ट कहते हैं। नेटवर्किंग का थोड़ा असर लाजिमी है।

सीनियर्स का रोल | आम तौर पर प्लेसमेंट के लिए किसी भी IIT में जाने वाली बड़ी कंपनियां पिछले 1-2 साल में उस कैंपस से ही रिक्रूट हुए स्टूडेंट्स को साथ लेकर जाती हैं। जो कैंपस से

AI image

1-2 साल पहले पेशेवर दुनिया में गए हैं, उनके अपने जूनियरों से अच्छे रिश्ते होते हैं। ऐसे में पहले से फीडबैक लेना कोई बड़ी बात नहीं। प्लेसमेंट से जुड़े अधिकारी एक उदाहरण देते हैं, 'कुछ साल पहले दो दिनों तक एक अच्छे लड़के को किसी इंटरव्यू में सफलता नहीं मिली। इसी बीच एक कंपनी ने मुझसे किसी अच्छे स्टूडेंट की मांग की। मुझे उस छात्र के बारे में पता था, तो उसका नाम आगे कर दिया। संयोग ही था कि कंपनी ने उसे जॉब ऑफर दे दिया।'

सोर्स से जानकारी | हमें कंपनियों के नजरिये से भी चीजों को समझना होगा। कंपनियां कम से कम लागत में बढ़िया से बढ़िया टैलंट को हायर करना चाहती हैं। कैंपस विजिट के पहले ही कंपनी के प्रफेशनल्स अपने परिचितों और दूसरे सोर्स के जरिये चीजों को समझ लेते हैं। यहां से

नौकरी की जद्दोजहद

- कुछ स्टूडेंट्स को ज्यादा फायदा
- सिलेक्शन पर नेटवर्किंग का असर
- कई सोर्स से पता करती हैं कंपनियां

मिले क्लू आगे काम करते हैं। भारतीय प्रौद्योगिकी संस्थानों में पहुंचने वाली कंपनियां पूरी तरह HR पॉलिसी पर निर्भर होती हैं। ऐसे में उनके पास किसी कमजोर छात्र-छात्रा को जॉब देने की कोई गुंजाइश नहीं होती। अच्छे स्टूडेंट्स के लिए कंपनियां हरसंभव तरीके इस्तेमाल करती हैं। उनके प्रतिनिधियों का स्टूडेंट्स के साथ खाना-पीना और घूमना भी एक सामान्य बात है।

कंपनियों में होड़ | कई बार कंपनियां भी किसी खास स्टूडेंट को किसी भी स्थिति में अपने यहां रखना चाहती हैं। इसकी वजह इंटर्नशिप में बढ़िया प्रदर्शन होता है। IIT कानपुर से एक छात्रा जापान में सोनी कॉरपोरेशन में इंटर्नशिप के लिए गई थी। जब प्लेसमेंट की बारी आई, तो सोनी के प्रतिनिधि उस इंटर्न को ही लेने पर अड़ गए। इंटर्न से बात की गई, लेकिन जॉब से इतर कुछ समस्याओं के चलते वह राजी नहीं हुई। टैलंटेड स्टूडेंट्स को लेने के लिए कंपनियां आपस में भी कड़ी प्रतिस्पर्धा करती हैं। कई कंपनियां टॉपर से ज्यादा ऐसे स्टूडेंट्स का चुनाव करती हैं, जो उनकी टीम में फिट हो जाएं।

सेट फॉर्मेट नहीं | फील्ड वर्क वाली कंपनियों की मांग बिल्कुल अलग होती है। उन्हें ऐसे स्टूडेंट्स रिक्रूट करने होते हैं, जो IIT संस्थानों की आपसी खेलकूद प्रतियोगिताओं में मेडल जीत चुके हों। तेज दिमाग के साथ मजबूत शारीरिक क्षमता वाले युवा ही फील्ड में कंपनी के लिए पूरा दम लगा सकते हैं। इस तरह, IIT कैंपस में कई एंगल से सोचकर जॉब ऑफर दिए जाते हैं। आप इसे मानव स्वभाव से भी जोड़ सकते हैं। यह UPSC या सरकारी नौकरी नहीं है, जहां कागजों पर नंबर देखकर एक सेट फॉर्मेट में ही सब कुछ तय कर दिया जाए।

क्रेडिट पॉइंट्स | तकनीक की दुनिया में करियर बनाने वाले स्टूडेंट्स भी विशेष किस्म के पक्षपात की बात स्वीकारते हैं। एक रिसर्च स्कॉलर ने कहा कि हां, कुछ पक्षपात हो ही जाता है। पढ़ाई के अलावा इतनी सारी गतिविधियां रखने का उद्देश्य ही यही होता है कि स्टूडेंट्स की दबी प्रतिभा को बाहर लाकर विकसित किया जाए। ऐसी गतिविधियां उनके क्रेडिट पॉइंट्स बढ़ाती हैं।

रेज्यूमे का असर | बीटेक के एक छात्र का कहना था कि रेज्यूमे में पढ़ाई के अलावा भी बाकी चीजों का जिक्र करना होता है। रेज्यूमे देखकर ही कंपनियां काफी कुछ तय कर लेती है। प्लेसमेंट के दौरान इंटरव्यू और प्रबंधन की कमान भी आईआईटियंस के हाथों में ही होती है। IIT कैंपस प्लेसमेंट में जॉब हासिल करने वाले स्टूडेंट्स सिर्फ पढ़ाई नहीं, बल्कि खेल, रचनात्मक गतिविधियों और सांस्कृतिक आयोजनों में भी आगे होते हैं। उनके बाकी स्टूडेंट्स से रिश्ते भी बेहतर होते हैं। कैंपस प्लेसमेंट में ये सारी चीजें काउंट होती हैं। NBT/21/14

SENTINEL (P-5), 22 DECEMBER 2024

Quest for One Nation One Subscription (ONOS) Scheme

Nothing is pleasanter than exploring a library – Walter Landor

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The Government of India has set the goal of Viksitbharat@2047, the National Education Policy (NEP) 2020, and the Anusandhan National Research Foundation (ANRF) for the transformation of the nation into a developed entity by the centenary of its independence in 2047. This will encompass diverse facets of development such as economic prosperity, social advancement, environmental sustainability, and effective governance of India.

The Viksitbharat@2047 projects Indian youth to be positioned as the vanguard in leading India towards a recessive Bharat by 2047. The NEP 2020 has identified research as a corequisite for outstanding education and development in our country. The goal of the establishment of the Anusandhan National Research Foundation (ANRF) by the Government of India was a step to motivate in this direction. With all these strategies, the government of India has given importance to research and development in our country in the Amrit Kaal. At the announcement of "One Nation One Subscription" (ONOS) after the approval of the Union Cabinet, a clarion call of "Jai Anusandhan" was given to the people of India for creating the importance of research and development. The One Nation One Subscription scheme is to provide country-wide access to international high-impact scholarly research articles and journal publications to students, faculty, and researchers of all higher education institutions managed by the central government and state governments and research & development institutions of the central government. The aim of the ONOS scheme is to position India as a global hub for research, learning, and knowledge while fostering interdisciplinary studies and bridging the gap in the access of academic resources. The initiative will open a goldmine of knowledge available in top-quality scholarly journals to nearly 1.8 crore students, faculty, researchers, and scientists of all disciplines, including those in tier 2 and tier 3 cities, thereby encouraging core as well as interdisciplinary research in the country. A total of 30 major international journal publishers have been included in One Nation One Subscription. All of the nearly 13,000 e-journals published by these publishers will now be accessible to more than 6,300 government higher education institutions and central government R&D institutions. Access to journals will be provided through a national subscription coordinated by the Information and Library Network (INFLIBNET), an autonomous interuniversity centre of the University Grants Commission (UGC), through an entirely digital process. There are 30 global publishers—including Elsevier Science Direct, Taylor and Francis, and Oxford University Press—who have already been included in the list under ONOS, and more were on their way. This will enable the research fraternity to access high-quality publications, which are expensive for college/school-level students. Moreover, it is very often difficult to access even one good publication."

The Department of Higher Education will maintain the unified portal "One Nation One Subscription," through which the institutions will be able to access the journals. The ANRF will periodically review the usage of One Nation One Subscription and publications of Indian authors of these institutions. At the announcement of the Government of India, the public university academics and academic institutions nationwide now have paywalled journals, publications, and research materials at their fingertips. One Nation One Subscription (ONOS)' will facilitate a one-stop digital library with institutional access to global research in various academic disciplines.

The ONOS will replace individual institutional journal subscriptions. The central payments will be coordinated by INFLIBNET. Regarding the uninterrupted services and timely completion of the scheme, a total of about Rs. 6,000 crore has been allocated for One Nation One Subscription for three (3) calendar years, 2025, 2026, and 2027, as a new Central Sector Scheme.

One Nation One Subscription will build on and further enhance the scope and reach of the range of initiatives undertaken by the Government of India over the past decade in the domains of education, for maximizing access to quality higher education for the youth of India. Although the Indian government's plan to start such a national publication reservoir is not new in the world, yet this is a very bold step considering inclusive education policy. Previously, the German and Uruguayan governments had introduced similar national access to research material.

This will supplement the ANRF initiative to promote research and development and foster a culture of research and innovation throughout government universities, colleges, research institutions, and R&D laboratories.

The scheme, which will be launched on January 1, will help students and researchers from diverse institutions, including under-resourced colleges, have access to the latest findings, enabling quality research and innovation. It will also encourage interdisciplinary studies by providing a shared platform for collaborative research across disciplines, breaking silos in academia. It will support youth empowerment by democratising access to global knowledge. We expect that the state governments will carry out campaigns in association with the HEIs in the state for maximising usage of the unique facility by students, faculty, and researchers of all government institutions. The best practice from the stakeholders of HEIs will definitely pave the way for quality research and innovation to promote the global research ecosystem.

INDIAN EXPRESS, (P-12), 23 DECEMBER 2024

TEST, NOT STRESS

Radhakrishnan panel's recommendations on exam reforms are welcome. Its implementation should be friendly to all students

THE RECOMMENDATIONS OF a seven-member panel, headed by former ISRO chairman K Radhakrishnan, to improve the transparency and efficiency of national entrance examinations come as a much-needed acknowledgement of the problems that plague the country's higher education system. Disruptions in national entrance examinations have become routine in India — a report in this newspaper earlier this year revealed that in the last five years, across 15 states, there have been 41 documented instances of paper leaks affecting 1.4 crore potential employees. In 2024 alone, both NEET and the UGC-NET saw postponements and cancellations due to the compromised integrity of these exams, a euphemism for paper leaks, while the conduct of CUET and the delayed declaration of its results for a third consecutive year created challenges of its own. For young aspirants, this is the perfect recipe for a crisis, given that the demand-supply anomaly is a Sisyphean paradox in itself. The panel's recommendations, which include a call for better infrastructure, improved exam security, devolution of the role of National Testing Agency (NTA) and more stringent protocols, therefore is a welcome move.

In its suggestions, the committee has said that the "high dependence" on the NTA be reduced, so that it conducts only entrance examinations and not recruitment ones. Since it was set up in 2018, the NTA has conducted 244 tests. The number of candidates registered for these tests has nearly doubled from an average of 67 lakh per year in 2019-2021 to 122 lakh per year in 2022-23. This makes it particularly vulnerable to malpractices and corruption because the NTA relies on third-party service providers. The committee has also recommended an election-like tiered collaboration between the Centre and states in managing the security of these examinations and a "digi-exam" system that replicates the DigiYatra model for biometric verification of candidates. A migration to "computer adaptive testing" where questions based on individual ability are queued has also been recommended.

The panel has advocated for a comprehensive review of the examination process, including the creation of a more robust security system and accessible digital infrastructure. This is a step in the right direction. Experience shows that the gap between infrastructure and execution, aspiration and opportunity creates fertile grounds for exploitation. From poor user interfaces to inadequate support systems for candidates, the CUET's many glitches, for instance, have proved that a tech-driven overhaul demands meticulous preparation to ensure that a new form of inequality is not created inadvertently. It is not enough to simply digitise or make the process more elaborate. It must be ensured that no student is left behind and that the systems put in place are intuitive enough for all candidates to navigate without confusion or undue stress. IE/23/12

TRIBUNE, (P-7), 23 DECEMBER 2024

Academic institutions must raise the bar to be future-ready

GUNBIR SINGH
PRESIDENT, DILBER FOUNDATION

THE National Education Policy has offered opportunities for progressive institutions to step into the new dynamics of millennial academics. Subsequent statutes have envisaged an era where collaborative uplift, shared synergies, global partnerships and Vision-2050 shall define the academics of tomorrow.

As foreign universities set up campuses in India, partnering with local organisations or embarking on singular forays, the existing domestic beacons of literacy face many challenges.

Some institutions of faith had long back acquired significance and developed into arenas of higher learning. They include Banaras Hindu University, Aligarh Muslim University and Khalsa College, Amritsar. Khalsa College did not get the status of a university by default because of its non-cooperative attitude towards the British. Its pre-Independence stance led to its stagnation. That discrimination, however, did not stop in independent India either. Its aspiration of graduating into a university has been stalled at many junctures in its history since 1892.

Meanwhile, the Anglo-Vedic college network of DAV institutions grew at an aggressive pace, delivering nationalism-accented education across the northern region. In 2016, both Khalsa College and the DAV, along with nine other private bodies, were granted university status by the Akali-BJP government in Punjab.

However, within months of this development, the subsequent Congress government singled out the Khalsa institution and repealed the Act under which it was set up. By then, it had 100 masters and PhD scholars on its rolls. They had to run before-scholar-to-confirm their courses. The fact that Khalsa University, independent of the Khalsa College, eventually came into being and was rescinded, was a body blow to the Khalsa College Charitable Society. It had aspired for this honour and nurtured many other universities from within its campuses.

However, in October this year, after a six-year delay, the Supreme Court gave a landmark judgment, setting aside an Act of legislature and adjudicated status quo to the 2017 formation. This victory for academic institutions has laid bare the illogical stance of politics.

HUGE CONTRIBUTION: The role of faith institutions in the field of education has been colossal. AM

Meanwhile, despite these adversities, the Khalsa society had made significant progress in the last two decades. It had set up professional colleges of pharmacy, nursing, law, veterinary sciences, education, engineering and others, while consolidating and increasing the number of students in the legacy institutions. A hospital and medical college is also in the offing.

The role of faith institutions in the field of school education, too, has been colossal. Over 55,000 Christian missionary schools are catering to 35 million children of all faiths in India. It is said that the majority of Indian Prime Ministers have received convent education at some point in their lives. In contrast, there are only around 24,000 madrassas and some 4,500 Vedic gurukuls in the country. In the Sikh community, the Guru Harkrishan Public School movement and SGPC schools number just a few hundred.

> As foreign universities set up campuses in India, the existing domestic beacons of literacy face many challenges.

Various faiths follow an inclusive and secular approach to primary education, while Islamic institutions run on the strict madrassa system with a religious and ideological approach to learning. Though the higher echelons of learning are more transparent, the appetite for openness is limited.

The Economic Survey 2024 has highlighted serious gaps in the education system, wherein 52.8 per cent of the graduates were found to be 'unemployable'. This is a telling comment on systemic failure and necessitates introspection.

For academic institutions, especially those with extensive networks, the time has come to either make it in the business of literacy or be left behind. Vice-President Jagdeep Dhankhar recently termed the quest for overseas education a 'new disease' which has caused a $4-billion hole in our foreign exchange kitty. Now, the global village itself is planting seeds of competition in our midst.

To stem academic prostitution within India, the Central Government has opened its doors not just to the Cambridges and Harwards of the world, but also any institution that has substantive prowess and history of excellence in the field of knowledge. It has, perhaps, set a purposeful cat among the pigeons.

The question, then, shall be of leadership and educational acumen of institutions. It shall be a test of the managements — whether they can ride the change or will go under. Some faith organisations have built-in systems of governance to improve their competence and service delivery. Anglo-Vedic institutions have a policy of bringing on board stalwarts like retired Army Generals, judges and government servants.

Christian missionary institutions have incorporated structures to ensure that new blood is nurtured. A case in point is the succession strategy of Christian Medical College. It selects its leadership five years in advance. The person is nurtured for the task at hand and even sent for an executive training programme to the IIM-Ahmedabad to hone his/her skills.

The future of successful enterprises in higher learning, thus, hinges on whether they can forsake nepotistic tendencies, political encumbrances and leadership fatigue. They must adopt a professional approach. The managements will be tested for their wisdom as well as the acumen and dynamism of their executive teams and educators. The latter will need to be open to unlearning and relearning the art of teaching. Their goalpost should be the placement and successful careers of their wards. The alumni base is an unmatchable asset of any school. It will also be required to be primed for participation in this onward march.

Gen Next cannot be given short shrift if we are to convert the nation's demography into a dividend. While India@75 has fallen way short of its target of having a fully productive generation, India@100 will require a larger number to be serviced along with more options and opportunities as well. It is the learners who will, henceforth, have the option to choose from a wider bouquet of academic institutions, of faith or otherwise. The deliverance of knowledge will need to compete and be future-ready. Otherwise, it is likely to be in for a future shock.

DAINIK JAGRAN (P-8), 23 DECEMBER 2024

छात्रों के विदेश जाने का बढ़ता चलन

प्रणय कुमार

पढ़ाई के लिए विदेश जाने वाले छात्रों की संख्या में भारी वृद्धि से देश को प्रतिभा और पैसा दोनों का नुकसान हो रहा है

उच्च शिक्षा के लिए भारतीय छात्रों के विदेश जाने का चलन दिन-प्रतिदिन बढ़ता ही जा रहा है। विदेश मंत्रालय के अनुसार, वर्ष 2019 में लगभग सात लाख, 2022 में नौ लाख छात्र उच्च शिक्षा के लिए विदेश गए थे, वहीं 2024 में अब तक लगभग 13.50 लाख छात्रों ने पढ़ाई के लिए विदेश का रुख किया है। इनमें से करीब 4.50 लाख छात्र कनाडा, 3.50 लाख छात्र अमेरिका और 1.85 लाख छात्र ब्रिटेन गए हैं। पढ़ाई के लिए आस्ट्रेलिया, जर्मनी, चीन, सिंगापुर, न्यूजीलैंड, जार्जिया, यूक्रेन, फिलीपींस आदि देशों में जाने वाले छात्रों की संख्या भी अच्छी-खासी है। लगभग 108 देशों में भारतीय छात्र अभी अध्ययनरत हैं। पिछली सदी के आठवें-नौवें दशक तक माना जाता था कि प्रतिभा-पलायन सामाजिक सरोकारों एवं राष्ट्रीय हितों को बाधित करता है। फिर उदारीकरण के दौर में यह माना जाने लगा कि विदेश में पढ़ने, नौकरी करने आदि से देश के विदेशी मुद्रा भंडार में वृद्धि होती है, परंतु अब विदेश में पढ़ाई पर व्यय किए जाने वाले धन और वहां नौकरी करने वाले भारतीय छात्रों की ओर से भेजी जाने वाली राशि का अंतर कम होता जा रहा है। पढ़ाई के लिए विदेश जाने वाले छात्रों की संख्या में वृद्धि से देश को प्रतिभा और पैसा दोनों का नुकसान हो रहा है। यह स्थिति इसलिए भी चिंताजनक है कि इससे उद्योग-धंधों एवं संस्थानों के समक्ष सक्षम एवं कुशल श्रम शक्ति के अभाव की समस्या भी सामने आ सकती है।

आमतौर पर भारतीय छात्र आकर्षक नौकरियों, सुविधापूर्ण जीवनशैली, अनुकूल कार्यसंस्कृति और अंततः वहीं बस जाने की चाहत में विदेश का रुख करते हैं, परंतु बहुत से छात्र ऐसे भी हैं, जो गुणवत्तापूर्ण शिक्षा, शोध एवं अनुसंधान के बेहतर अवसर, मनचाहे एवं रोजगारपरक विषयों की उपलब्धता, उत्पादक एवं अनुशासित शैक्षिक परिवेश, विद्यार्थी-शिक्षक के संतुलित अनुपात, समय पर कोर्स पूरा होने की सुनिश्चितता आदि के कारण अध्ययन के लिए विदेश जाते हैं। यह स्वीकार करना पड़ेगा कि अधिकांश विद्यार्थियों को देश के उत्कृष्ट शिक्षण संस्थानों में वांछित विषयों की पढ़ाई का अवसर नहीं मिल पाता। आज के युवा प्रयोगधर्मी हैं। वे ऐसे कोर्स चुन रहे हैं, जो उद्योगों के अनुरूप हों और जो बदलती तकनीक

समय के साथ बदलें भारतीय शिक्षण संस्थान • फाइल

के लिहाज से भी अद्यतन हों। आजकल छात्रों की रुचि एवं रुझान-खाद्य सुरक्षा, डिजिटल प्रौद्योगिकी, कंप्यूटर साइंस, साफ्टवेयर इंजीनियरिंग, व्यवसाय एवं प्रबंधन, अर्बन प्लानिंग, चिकित्सा एवं स्वास्थ्य विज्ञान, होटल प्रबंधन एवं पर्यटन, कला एवं ग्राफिक डिजाइन, जलवायु परिवर्तन, हरित ऊर्जा, डाटा साइंस, फिनटेक, आर्टिफिशियल इंटेलिजेंस, मशीन लर्निंग और पृथ्वी एवं पर्यावरण विज्ञान जैसे विषयों में अधिक है।

हालांकि भारतीय विश्वविद्यालयों में भी नए-नए कोर्स प्रारंभ किए जा रहे हैं, पर इसकी प्रक्रिया धीमी होने के साथ वे जड़ता के भी शिकार हैं। हमारे विश्वविद्यालयों में नीतिगत स्तर पर हुए बदलावों को धरातल तक लाने और उसके लिए अनुकूल तंत्र एवं संसाधन उपलब्ध कराने में बहुत समय लग जाता है। भारतीय शिक्षण संस्थानों में अत्यधिक प्रतिस्पर्धा, सीटों की कम संख्या, मांग एवं आपूर्ति का भयावह असंतुलन, शोध एवं अनुसंधान के सीमित अवसर, सक्षम एवं अनुभवी संकायों का अभाव, कोर्स एवं विषयों के चयन में लचीलेपन की कमी, जीवनोपयोगी एवं व्यावहारिक ज्ञान की तुलना में सैद्धांतिक एवं पुस्तकीय ज्ञान पर अत्यधिक बल, मौलिक, स्वतंत्र एवं आलोचनात्मक चिंतन-विश्लेषण के प्रति उपेक्षापूर्ण रवैया, उद्योग एवं शिक्षण-संस्थानों के बीच साझेदारी की कमी तथा आरक्षण की जटिल प्रक्रिया आदि कारक भी भारतीय छात्रों को विदेशी विश्वविद्यालयों की ओर पलायन करने को मजबूर करते हैं।

उच्च शिक्षा की जिन विशेषताओं के कारण प्रतिवर्ष बड़ी संख्या में भारतीय छात्र दुनिया के दूसरे देशों की ओर पलायन कर रहे हैं, अच्छी बात यह है कि वही विशेषताएं यहीं उपलब्ध कराने के लिए सरकार के स्तर पर अनेक अहम कदम उठाए जा रहे हैं। उनके पसंद के कोर्स की पहचान कर देश में ही अब वैसी पढ़ाई की तैयारी है। हाल में विश्वविद्यालय अनुदान आयोग (यूजीसी) ने सुधारात्मक कदम उठाते हुए स्नातक की पढ़ाई के साथ इंटर्नशिप को अनिवार्य किया है। इससे छात्रों को व्यावसायिक जगत का व्यावहारिक अनुभव प्राप्त होगा। इससे वे उद्योग-जगत की मांग के अनुरूप अपने ज्ञान एवं कौशल को विकसित कर सकेंगे। राष्ट्रीय क्रेडिट फ्रेमवर्क को भी छात्रों की योग्यता को मापने की दिशा में एक महत्वपूर्ण पहल माना जा रहा है। इसके अंतर्गत 30 घंटे की पढ़ाई के लिए छात्रों को एक अंक दिया जाएगा। यह फ्रेमवर्क उन्हें विभिन्न क्षेत्रों में अपने ज्ञान एवं कौशल को विकसित करने के लिए प्रोत्साहित करेगा। यूजीसी विनियमन-2024 भी भारतीय शिक्षा-प्रणाली में बड़े बदलावों को प्रस्तावित करता है, जिसका उद्देश्य इसे अधिक लचीला, समावेशी और वैश्विक मानकों के अनुरूप बनाना है। प्रस्तावित सुधारों में स्नातक और स्नातकोत्तर कार्यक्रमों में द्विवार्षिक प्रवेश प्रक्रिया, पिछली शैक्षणिक स्ट्रीम की परवाह किए बिना किसी भी पाठ्यक्रम को चुनने की स्वतंत्रता, बहुविषयक शिक्षण, एक साथ दो डिग्री हासिल करने, जमा किए गए क्रेडिट के आधार पर प्रमाणपत्र, डिप्लोमा या डिग्री प्राप्त करने तथा पूर्व शिक्षा एवं कौशल पर आधारित ज्ञान अर्जित करने आदि के अवसर एवं विकल्प सम्मिलित हैं। ये सभी बदलाव स्वागतयोग्य हैं, जो रटने एवं परीक्षा केंद्रित शिक्षण प्रणाली की तुलना में रचनात्मक, व्यावहारिक एवं कौशल आधारित ज्ञान को प्रोत्साहित करते हैं।

(लेखक शिक्षाविद् एवं सामाजिक संस्था 'शिक्षा सोपान' के संस्थापक हैं)
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PIONEER (P-7), 24 DECEMBER 2024

India's math geniuses shine bright in international math competition 2024

India, a nation with a rich legacy of mathematical brilliance, added another feather to its cap by triumphing at the UCMAS International Competition 2024

India has long been a land of great mathematicians, from Aryabhata to Ramanujan to Bhaskara, each leaving an indelible mark on the world with their mathematical ingenuity. Today, India continues to excel in the field, as evidenced by its stellar performance at the Universal Concept of Mental Arithmetic System (UCMAS) International Competition 2024 in New Delhi, where the country bagged both the highest individual and team trophies.

The competition, the world's largest event for Abacus and Mental Arithmetic, brought together over 6,000 students from nearly 30 countries. Participants faced the challenge of solving 200 arithmetic questions in just eight min-

SARIKA **JHA**

utes, relying solely on the Abacus or mental math techniques—a feat that truly felt like magic. For the second time, the World's Largest Abacus & Mental Arithmetic Event- UCMAS International Competition 2024 was held in India at the Delhi University Multipurpose Hall.

Students from across the world competed with each other showcasing their mental prowess in solving a very large number of mathematics problems in the quickest possible time to win the awards. This landmark event reaffirms its global significance in nurturing young minds in mathematics.

The competition aimed at promoting brain development, enhancing cognitive skills, and demonstrating the incredible abilities students can achieve through Abacus and Mental Arithmetic. Presenting the trophies to top performers, former Union Minister Meenakshi Lekhi rightly said, "Smart brain produces smart solutions for every problem and prosperity is moving forward only when we have smart brains." Commending the efforts of the young participants, Lekhi emphasised the importance of such initiatives and said, "UCMAS is enhancing cognitive skills and academic excellence." The blend of the ancient tool of the Abacus with modern teaching methodologies creates a unique educational experience.

Over 3 million children across the world have benefited from the Abacus and Mental Arithmetic curriculum, which encourages creativity, visualisation, and focus while developing strong arithmetic abilities.

In today's competitive academic environment, maintaining mental wellbeing has become an uphill battle for many children. The relentless pressure to excel often leads to stress, anxiety, and even depression. In some heartbreaking cases,

it drives students to take extreme steps, as seen in recent reports from Rajasthan's Kota district—a hub for competitive exam preparations. However, innovative educational programmes like the Abacus and Mental Arithmetic course are emerging as a ray of hope, helping children manage stress while fostering mental stability and self-confidence.

According to Dr Snehal Karia, CEO of UCMAS India, the course is designed to enhance children's mental stability by boosting their concentration, focus, and memory. It equips them with the confidence to understand and embrace their individuality effectively reducing anxiety and depression. The Abacus & Mental Arithmetic program's key lies in its structured approach to building self-assurance through innovative teaching methods.

The encouragement and skills imparted during the training play a pivotal role in shaping a child's bright future. The program comprises eight levels, each lasting three to four months. Children attend weekly classes guided by trained instructors, working through specially designed books and activities. Unlike conventional education, this course serves as a supplementary learning system to enhance cognitive abilities. There is an urgent need to complement the school's curriculum by focusing on brain development. The course improves memory, sharpness, and alertness.

As a result, students perform better academically and approach challenges with greater confidence. In a world where competition often overshadows creativity and self-worth, programs like Abacus & Mental Arithmetic provide children with the tools they need to thrive—mentally, emotionally, and academically. Akram Wong, CEO of UCMAS International Corporation, said, "The competition not only tests their skills but also serves as a platform to demonstrate their creativity, visual memory, and focus—all of which will shape their future success." The competition itself is a testament to the transformative power of such programs, where students not only test their math skills but also demonstrate the broader cognitive benefits that shape their academic and personal growth.

Ultimately, the world needs such initiatives to nurture well-rounded individuals who are prepared to face the challenges of the future with confidence and creativity.

(The author is a senior journalist. The views expressed are personal)

DECCAN HEARLD (P-8), 25 DECEMBER 2024

Out-of-school children a looming crisis

In spite of sustained promotion and encouragement of education, especially school education, in the country, large numbers of children are still out of school and denied their right to education. The government told the Lok Sabha this month that 11.7 lakh children were counted as out-of-school in the first eight months of this year. This is marginally less than last year's figure of over 12 lakh children. The Right to Education Act has ensured free and compulsory education for all children aged between 6 and 14 but it is a dead letter for many. Uttar Pradesh has the most out-of-school children (784,228), and Jharkhand and Assam come next, with over 60,000 children each. UP topped the list last year also. According to reports, 18,461 children dropped out of school during the 2022-2023 school year in Karnataka.

Children who have not attended school or have been absent from school without notice for 45 days are considered out-of-school. The actual numbers of these children may be much higher. Two years ago, it was reported that over 10% of the children in the 6-14 age group were out-of-school. There are many social and economic reasons for children not attending or dropping out of school. Most of them are from the lower and marginalised sections of society. Children of migrant workers, SC & ST communities, slum dwellers, construction workers, child workers, and children with special needs are more likely to miss school than others. Among them, there are more girls than boys and more from the villages than from the cities. Early marriage and the need to help the family on the farm or in the kitchen are among the reasons for children leaving school. As the numbers show, backward states in the North and East account for most of the out-of-school children.

Govt says 11.7 lakh children are out of school in India. Real numbers may be significantly higher

It is the responsibility of the government and society to ensure that all children eligible for education are given the opportunity to go to school and complete their schooling. The fact that there are high numbers of children who are unable to access education shows a failure of the system. Every reason for children not getting the opportunity to complete their foundational education, including lack of or inadequacy of facilities and infrastructure, should be addressed. Social groups and organisations can also help in these efforts. It is also necessary to improve awareness of the importance of education among some segments of the population. If the issue is not addressed effectively, the claimed demographic dividend will only become a liability. DH|25|8

INDIAN EXPRESS, (P-14), 25 DECEMBER 2024

LEAVE THE KIDS ALONE

Asking schools to apply the citizenship test to students is a blot on the national capital — and its AAP government

A QUESTION OFTEN ASKED of the Aam Aadmi Party (AAP) is this: What does it stand for? For any party engaged in the complexity of electoral politics, the answer is rarely straightforward. However, in its nearly decade-long stint in power in Delhi, certain essential aspects of its ideological positions have become clear. Salient among these is the fact that it has chosen not to — or, as is evident, lacks the courage to — take a stand on minority rights at a time when they are widely seen as extremely embattled. So lest it be painted with the pro-minority brush the BJP likes to wield across the Opposition canvas, the AAP government whips itself into a frenzy on the issue of Rohingya and Bangladeshi Muslims. So what if it undermines its own much-advertised "Delhi model" of governance whose chief feature is a focus on its impressive success in improving school education. The circular issued by the Delhi government Monday demands that "schools must ensure strict admission procedures, verification of students' documentation to prevent illegal Bangladeshi migrants' enrollment, implementation of greater scrutiny to detect and prevent unauthorised admissions of illegal Bangladeshi migrants in particular". Nothing could be farther from good governance than this circular which, in effect, weaponises teachers and students, in fact the entire school against the most vulnerable among them.

The classroom must be a safe space. The school is where children learn to overcome the divisions that mark broader society — not deepen them for electoral gains. Of course, illegal migration is a fraught issue and any government that runs the national capital has to address it. It needs a policy response at several levels including working in concert with the Central government whose mandate is to secure borders. School children cannot be the first port of call to address it. A border can be policed — a classroom must not be. In fact, the circular flies in the face of the Right to Education, which flows from the fundamental rights enshrined in Articles 21 (life and dignity) and 14 (equality). Delhi's Directorate of Education seemed aware of this basic principle as recently as April 2024. Its admission circular stated: "Admission will not be denied to any divyang child, destitute child, refugee/asylum seeker, homeless, migrant, orphan or child in Need of Care and Protection in any Govt. school due to the non-availability of essential documents at the time of submission of documents in the school."

Monday's circular is not the first time the AAP has used parochialism as a political plank. In April 2022, its leaders all but blamed Rohingya refugees for communal violence in Delhi, without citing any evidence. Even by those diminished standards, looking for illegal immigrants in the classroom is a new low. Chief Minister Atishi, one of the progressive faces of the AAP's successes in school education, waving the notification that seeks to all but criminalise children, paints the picture of a party and government that lacks both political imagination and the moral compass that points true north. It also undermines her party's "governance model". Delhi, as the national capital and one of India's most important economic and cultural centres, should be an example to follow, not avoid. The AAP government must withdraw the circular and ensure that the school remains a place for learning, not fear, targeting and intimidation. 25/12/24

MILLENNIUM POST (P-9), 25 DECEMBER 2024

EDITORIAL

A flawed fix?

If there is one thing that defines the Indian population, it is stratification. While egalitarianism and uniform society might be in the imagination of many, in reality, it is the differentials and inequalities that shape societies. Education, a major pillar of human growth, is afflicted by the same. The Union government's recent decision to scrap the 'no detention policy' for Classes 5 and 8 in schools under its jurisdiction cannot be seen in isolation from this harsh reality.

On paper, this change affects schools like Kendriya Vidyalayas, Jawahar Navodaya Vidyalayas, Sainik Schools, and Eklavya Model Residential Schools. However, the notification will also open up the floodgates for other states—beyond those that have already scrapped 'no detention policy'—to follow suit. These schools serve a wide variety of students—hailing from starkly different socio-economic statuses and possessing very different mental acumen. The fear of failure in exams or recurring detentions could disincentivise many students, particularly girls, from sticking to the course of their education. This is not meant to denounce the merit of the government's decision to scrap the 'no detention policy'. Time and again ASER reports have exposed the dismal state of foundational literacy and numeracy in school-going children. There is a clear lapse in learning levels, particularly in public schools. In large parts of rural India, and to a significant extent in urban areas as well, the learning process of students is driven by an exam-centric approach. Exempt from the fear of being detained, they have a natural tendency to take their studies lightly unless they reach class 10th. By the time they reach there, a lot many students are left beyond repair.

Perhaps the government appears to be wanting to bridge this gap. However, in doing so, it should not skip two considerations. In the first place, it should remember that tightening the grip on pre-board examinations might not be the best bet to plug the gap in student's learning because, in a way, it signals a retreat to the same pressure building approach that the Right to Education Act intended to do away with. It is like spinning the wheel backwards. The second consideration is closely related to the first one and has a problem-solution relation. The best alternative to bridge the learning gap is to make education more engaging, interactive and interesting, rather than instilling the fear of examination. It may be recalled that the no-detention policy, introduced under the Right to Education (RTE) Act of 2009, aimed to reduce dropout rates by ensuring no child was held back or expelled until they completed elementary education. By removing the fear of failure, it sought to make learning enjoyable. This idea should not be forgotten. The new rules now require regular examinations for Classes 5 and 8, with an option for a re-exam if a student fails. If they fail again, they may be held back, but not without additional instruction and support to help them catch up. Despite its goals, this change raises concerns. The fear of being held back could lead to more students dropping out, especially those from underprivileged backgrounds. For families already struggling, the stigma and frustration of repeating a grade might push them to pull their children out of school altogether. Tamil Nadu, which has chosen to retain the no-detention policy, argues that this approach helps protect children from such challenges and ensures uninterrupted education up to Class 8. Another challenge lies in how effectively the new rules are implemented. Schools need adequate resources, trained teachers, and proper systems to provide remedial instruction for students who fail. Without these, the policy risks being more punitive than supportive. There are also questions about whether schools are prepared to conduct meaningful, competency-based assessments that focus on a child's overall development rather than rote learning.

Ensuring that children learn effectively, reducing dropout rates, and addressing inequalities are all critical goals that need a balanced approach. Policymakers must work to improve teacher training, provide better resources, and involve parents and communities in supporting education. They also need to monitor the policy's impact to ensure it benefits all children, especially those from disadvantaged backgrounds.

HINDU (P-7), 26 DECEMBER 2024

Republicans and Trump's team diverge on immigration

30% Republicans favour a decrease in legal immigration compared to only 14% of Democrats

DATA POINT

The Hindu Data Team

A series of events has shone a spotlight on the U.S.' H1B visa programme, which mostly benefits Indian workers. The programme allows U.S. employers to hire skilled foreign professionals for specialised roles.

Recently, a month-old post on X by Chennai-born techie, Sriram Krishnan, who was appointed as AI advisor to the U.S. government by President-elect Donald Trump, went viral. Mr. Krishnan urged Elon Musk, who will also be advising the Trump administration on cutting unnecessary regulations, to eliminate country caps for green cards and "unlock skilled immigration." This sparked debates, with pro- and anti-immigration voices weighing in on the H1B visa programme. Far-right activist Laura Loomer was among the critics of Mr. Krishnan's appointment and the H1B programme.

Earlier this month, Bloomberg published a detailed report featuring former U.S.-born employees of India-based IT firm Cognizant Technology Solutions, who alleged that "H1B workers were favoured over U.S. employees." In October, a U.S. jury found the IT major guilty of discriminatory practices against non-Indian workers. Earlier this year, several Tata Consultancy Services employees in the U.S. filed a complaint with the U.S. Equal Employment Opportunity Commission, accusing it of racial discrimination and favouring individuals on H1B visas for jobs.

Amid the ongoing criticism of the H1B programme, the Joe Biden administration introduced new rules last week to simplify the hiring of foreign workers by U.S. companies. The changes also made it easier for individuals to transition from F-1 student visas to H1B visas.

In this context, a recent survey by the Pew Research Center is important. It reveals that 30% of U.S. adults support an increase in legal immigration, 46% prefer maintaining the current levels, and 22% advocate for a decrease.

Chart 1 illustrates the share of U.S. adults who want legal immigration to increase, decrease, or stay at the current level. Americans aged 18 to 29 showed stronger support for increased legal immigration, with 50% favouring it and 10% advocating a decrease. But among those aged 50 and older, only 20% supported an increase; nearly 30% favoured a decrease.

The responses were also divided along political lines, with 30% of Republicans favouring a decrease in legal immigration, compared to only 14% of Democratic-leaning respondents. White Americans showed the lowest support for increasing legal immigration.

The survey also shows that about four in 10 Americans believe that high-skilled workers should be prioritised when determining who should be allowed to stay in the U.S. legally (**Chart 2**). Significantly, Mr. Musk recently responded with "I agree" on X to a post by a U.S.-based firm's CEO advocating for an increase in the H1B visa cap to attract more "top talent".

Amid calls to increase temporary worker visa limits, the number of immigrants granted lawful permanent residency through green cards returned to pre-pandemic levels in 2023 (**Chart 3**).

In 2023, approximately 1.2 million immigrants received green cards, an increase of about 1,55,000 compared to 2022. Since 2007, over 1 million immigrants have been granted green cards annually, except during the COVID-19 pandemic. In 2023, 1,97,000 were given employment-based green cards, typically issued to highly skilled foreign workers or those filling labour shortages.

While a significant share of Republican voters supports reducing legal immigration, Mr. Trump's team and the tech industry advocate for increasing it to address the demand for skilled workers.

Which way will the H1B needle swing?

The data for the charts were sourced from a recent article published by the Pew Research Center based on their The American Trends Panel survey

Chart 1: The chart illustrates the share of U.S. adults who believe that legal immigration should increase, decrease, or maintained at the current level

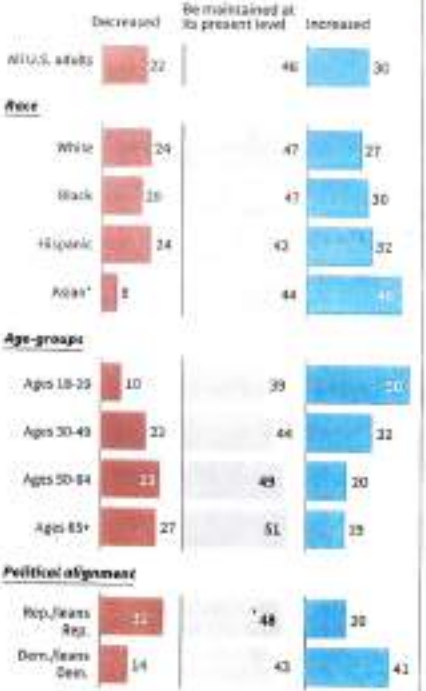
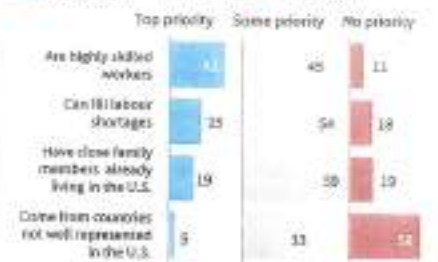
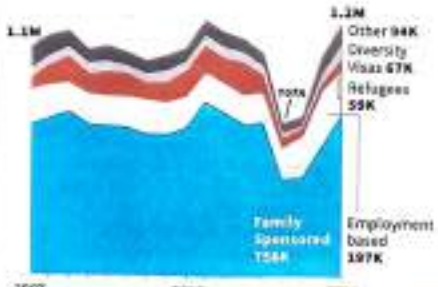


Chart 2: Share of U.S. adults who say that when deciding whether people from other countries should be allowed to stay in the U.S. legally, people who _____ should be given top priority, some priority, or no priority



The pew survey of U.S. adults was conducted in the August month this year and results were published in December

Chart 3: The chart shows the admission categories for U.S. lawful permanent residents between 2007 and 2023. M= million, K= 1,000



HINDU (P-8), 26 DECEMBER 2024

U.S. and China renew S&T Agreement

What new measures were added to the Agreement in 2024? What does this indicate about the evolving relationship between the U.S. and China? How has the U.S. benefited from its collaboration with China under this Agreement?

EXPLAINER

Krishna Ravi Srinivas

The story so far:

On December 13, China and the U.S. agreed to extend their Agreement on Co-operation in Science and Technology for an additional five years, effective from August 27, 2024, and also signed a protocol to amend it. Observers have welcomed the development as an affirmation of science and technology cooperation between the two major powers. The Agreement was first signed on January 31, 1979, by Chinese leader Deng Xiaoping and U.S. president Jimmy Carter at a time when both countries had established diplomatic relations and agreed to cooperate on agricultural research and technology. Since then, the Agreement has been renewed every five years while expanding in scope. The Agreement is governed by the U.S.-PRC Joint Commission on Scientific and Technological Cooperation. The U.S. and China each appoint co-chairs and an agency from each country is nominated as the 'executive agent'. There are also additional protocols between agencies and 40 sub-agreements in different areas, from agriculture to nuclear fusion.

Why do bilateral S&T agreements matter?

Bilateral science and technology agreements have been key to promote cooperation in these fields. Often there are specific agreements or cooperation pacts as part of a larger engagement framework. While these agreements don't mention specific investments in science and technology, they often pave the way for forms of cooperation that aren't confined to state institutions. They also facilitate joint research, mobility between the countries for students and scientists, encourage institutional cooperation, and set up bilateral research centers. India has such agreements with 83 countries.

GETTY IMAGES

But while countries sign such agreements as part of routine engagements, both countries need to have the capacity and intentions to pursue the cooperation earnestly for the instruments to succeed. Token initiatives have never cut it. In this regard, the Agreement between China and the U.S is probably the most successful of its kind.

What does the renewed agreement stipulate?

Conflicts between the U.S. and China, particularly over technology exports to China and concerns about China overtaking the U.S. in science and technology indicators, have become sticking points of late. To address them, the newly amended Agreement has measures to enhance provisions for researcher safety and data reciprocity.

The collaboration will henceforth be confined to the intergovernmental level, to basic research, and to previously identified themes of mutual benefit. The instrument will also exclude cooperation in critical and emerging technologies to assuage stakeholders that China won't extract disproportionate benefits, allegedly at the U.S.'s expense.

Indeed, experts who reviewed the Agreement have flagged China's ability to make better use of the research ecosystem and concerns about intellectual property rights. One report by the Congressional Research Service stated: "In 2017, U.S. patent and trademark officials identified over 400 [Chinese] patents tied to [Agreement] projects that [China] commercialized without U.S. commercial benefit."

So, before the Agreement was renewed this year, the U.S. was faced with three options: to renew it as usual for five years, to rescind it or to renew it with new measures to restrict the scope and add additional conditions. The U.S. opted for the third, implying that while there are deep concerns about the Agreement's continued usefulness to the U.S., the outgoing administration would rather not allow it to altogether expire or rescind it.

What has the U.S. gained?

China expanded its cooperation in science and technology in the 1970s by signing agreements with the U.S.I and the European Union. Until then these deals had been restricted to some east European countries and the erstwhile Soviet Union. Between then and now, the country has emerged as a strong contender for the leadership of global science.

According to one February 2024 paper, China's research and development (R&D) spending increased from $375 million in 1979 to $442 billion in 2021, second only to the U.S. In 1985, there were 2,770 Chinese undergraduate students in the U.S. and 109,526 in 2000. Both the number of papers coauthored by Chinese and U.S. authors and the variety of fields in which this has happened have increased. On the back of these data, Deborah Seligsohn of the Center for Strategic and International Studies, Washington, DC, has argued that the U.S. wasn't poorly served by the Agreement and has received significant value as well.

For the same reasons, the incoming Trump administration isn't likely to rescind the new agreement, although it might attach more conditions and further limit its scope. It will still be valuable to China for keeping the door to western cooperation in science and technology, including to promote the mobility of its researchers, open. Likewise, the U.S. could maintain a handle on China's rise vis-à-vis science and technology rather than lose all leverage.

In all, the Agreement teaches us that while bilateral science and technology agreements are important, making the best use of them demands capacity-building and sustained investment in R&D. Otherwise the participating countries won't be able to absorb the principal advantages such agreements generate. The Agreement catalysed China's transformation from a 'junior partner' in 1979 to a formidable competitor in 2024. Even if the U.S. deems its success to be 'extreme', the Agreement forces the two countries to respond to each other's concerns using the language of science and technology and cooperation.

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THE GIST

- The U.S. and China renewed their Agreement on Co-operation in Science and Technology for five years with new amendments addressing researcher safety and data reciprocity.
- The Agreement catalysed China's rise from a junior partner in 1979 to a formidable global competitor in science and technology, marked by massive growth in R&D spending, student exchanges, and research output.
- While Trump's administration might scrutinise the Agreement more closely, it recognises the importance of maintaining cooperation with China, particularly to monitor and manage China's technological advancements.

INDIAN EXPRESS (P-10), 26 DECEMBER 2024

ELIMINATE, DEMOTIVATE

Scrapping of no-detention policy undermines Right To Education, goes against vision of NEP 2020

THE WORDS, ELIMINATION and examination, are almost always intertwined, especially in India, where examinations are primarily elimination tests. The Right to Education Act, 2009, underlined a different approach. It scraped out the humiliation of elimination from the body politic of examination. It came out with the No Detention Policy (NDP) for students up to Class VIII. That was innovative in a country where success is often measured in terms of examination scores.

After 15 years, much of the radical approach has been diluted. From the next academic year, Class V and Class VIII students in government schools will be held back or eliminated according to their performance. The move is an extension of the amendment introduced by the Centre to the RTE in 2019, when it left the issue of detention to the discretion of state governments. NDP was premised on the theory that detention led to school dropouts. The RTE was passed when the dropout rate for students between Classes I to VIII was 42.5 per cent. Notably, for the SCs and STs, the percentage was much higher — 51.2 and 56.8, respectively. In 2024, as the central government annuls the NDP, the dropout rate has already come down to 12.6 per cent, according to the latest data from UDISE. If the decreasing dropout rate stands in favour of NDP, a 2023 report by ASER, which showed that only a fourth of the enrolled students in the age group of 14 to 18 can fluently read a Class II-level text, vouches for the contrary.

However, the RTE was not all about NDP. It was envisioned that the students who failed to pass the exams would be given "special care" by teachers to achieve the required level of learning. But do the teachers have enough infrastructure to take "special care"? The overburdened teachers in primary and secondary schools rarely have time to even look into the students' basic needs. According to the reports of the Ministry of Education, the government schools, both at the primary and elementary levels, are grappling with a shortage of 8.4 lakh teachers. Responding to a question in the Rajya Sabha in the just-concluded Winter Session, Minister of State in the Ministry of Education, Jayant Chowdhury, cited a few reasons for dropout, including students' lack of interest and their inability to "cope up with studies". Will detention not aggravate the problem? It is bound to affect the interest of the students, mostly of those who belong to marginalised communities. The imagination of innovative education and universal access, as proposed by the National Education Policy (NEP), doesn't go with the narrative of elimination/detention. 30/12/6

INDIAN EXPRESS (P-11), 26 DECEMBER 2024

The Valley of innovation

School students from J&K have taken the lead in framing solutions to a range of problems that affect the daily lives of people

CHINTAN VAISHNAV AND SUMAN PANDIT

C R Sasikumar

WHAT WOULD YOUR reaction be if you found out that this year, young innovators from the Union Territory of Jammu & Kashmir are leading one of India's largest and most representative innovation contests for schools, the Atal Tinkering Marathon, by a significant margin. By several indicators, J&K schools are exhibiting creativity that is off the charts.

Last year, 1,627 student teams from the UT participated in the Marathon, which attracted 20,000 innovative projects, accounting for around 10 per cent of the total participation across the country.

These numbers cannot be discarded as a statistical anomaly. Participation in the Atal Tinkering Marathon is open to all schools of India. What fraction of schools from a state/UT participated in this competition last year? The national average across states and UTs was 3.18 per cent. In J&K this number was an astounding 36 per cent — 10 times the national average. The runner-up, Karnataka — the number one state on NITI Aayog's India Innovation Index — was at 16 per cent.

J&K hasn't just participated in large numbers, it also produced quality. With 20 teams featuring in the Top 500 Innovations of the competition (and receiving prestigious internships at various organisations), J&K's winning rate is higher than the national average. If India's 35 states/UTs were to equally contribute to the top 500 innovations, each would have contributed 14 winners.

Arguably, the most exciting dimension of this rise is in the problems students are choosing to address. Often, these are local, critical to the lives or livelihoods in the region and yet unknown to or inconsequential for the rest of the nation.

For instance, a team from Government Higher Secondary School (GHSS) Fatehgarh, Baramulla has picked the problem of silent deaths during winter months, resulting from inhaling the carbon monoxide (CO) emissions from wood or coal-fired hearths. They have built a mechanism to sense dangerously high levels of CO and opening a motorised window for the gas to escape, thus saving lives.

We must appreciate such innovations in at least two ways. First, such problems are not known to the rest of our nation because in most other regions people don't have to endure low temperatures like in Kashmir. Second, while such problems are hyperlocal, their solutions can have global applications, as demonstrated by the recent fire in an apartment complex in Kuwait that claimed close to 200 lives due to inhalation of smoke.

Another example: A team of two girls from GHSS Aminakadal, Srinagar, looked at the problem of flash floods caused by the melting of snow on the mountains when spring arrives. They decided to simulate the situation by taking a square piece of cardboard, a few feet in length and height, mounting a stick on it to represent an electrical pole, placing a pile of cotton around the pole to simulate the snow, and affixing infrared sensors on top of the pole to measure the height of the cotton pile (accumulation). They then took the parameters representing this setting such as the snow condition (from the cotton pile), and gradient of the mountain (from the cardboard that can be used as an inclined plane), and combined them with assumptions about a few more parameters such as the ambient temperature and the distance to the village downstream and fed it all to a mobile application that calculated the probability of a flash flood.

Notice how beautiful this problem is! One can explore geometry by playing around with the inclined plane. One can explore physics and chemistry by understanding the formation of snow, its structure, its behaviour around the melting point, and so on. One can explore meteorology by simulating the amount, rate and length of a snowfall. One can explore how water basins work by understanding the water flows. And, all of this is in addition to learning about electronic sensors, circuits, and software programming.

In a similar example, but one that demonstrates the different needs of Jammu versus Kashmir, students from Air Force School Jammu have developed Bhu Jal Nirdharak, an innovative groundwater detection system that helps farmers and communities accurately locate and assess groundwater sources. Using the Wenner and Schlumberger Array methods with electrodes to measure soil resistivity, along with sensors for soil moisture and pH, the system provides vital data on soil and water conditions. It is complemented by an app that provides the results in local languages like Dogri.

One final example: In the Baramulla district, three students from GHSS Kreeri picked the problem of improving markets for apple farmers. They have developed a cost-effective Apple Grader that cleans and sorts apples, enabling local farmers to market their harvest more profitably. What is most exciting here is that their work did not end with a prototype design! Upon building a desktop prototype, they went in search of a local "garage" that would help them build a real-life product. In pockets of the world like Silicon Valley, where startup ecosystems have thrived over decades, isn't it this interconnection of schools, labs, garages, and factories that has made it possible for nascent ideas to become global startups like Cisco, Google, or Facebook? Delightfully, this is beginning to happen in India's Valley too.

What is transforming this land renowned for its picturesque landscapes and vibrant culture into a hub of innovation and creativity? It is the efforts of the governments, schools and community organisations.

In recent years, J&K has undertaken ambitious initiatives to revolutionise the education sector, providing quality schooling closer to students' homes, and focusing on skill-based education and hands-on learning. At the forefront of this endeavour is the Atal Tinkering Labs (ATL) initiative of the Atal Innovation Mission (AIM) under NITI Aayog.

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ATLs are maker spaces in schools where young minds can bring their ideas to life through hands-on, do-it-yourself projects, design thinking, rapid prototyping, and entrepreneurship skills. In J&K, 127 ATLs have been established. The UT has also become the first among states and UTs to establish 500 ATLs in partnership with NITI Aayog.

The Atal Innovation Mission, in collaboration with the State Education Department, has implemented several special measures to elevate the performance of ATLs in J&K. AIM has organised training sessions for school teachers and district officials across the UT, with support from various partners. Given the difficult terrain, J&K is the first state where labs of smaller size have been allowed. Moreover, this is the first region where up to three schools within geographical proximity are allowed to jointly apply and establish one ATL open to all. These measures have created a more customised template appropriate to the needs of this region.

At the community level, too, effective measures have been taken. J&K is one of the first regions where labs are organised in clusters of 10-30, called ATL Sarthi. These are designed to enable peer-to-peer learning and monitoring of these labs. The ATL Sarthi initiative has been launched in collaboration with the State Council of Educational Research & Training-J&K and JKBOSE.

Additionally, organisations engaged in ecosystem building such as Pi Jam, and the National Institute of Technology Srinagar have organised events to connect stakeholders further. For example, in November 2023, Pragaash, an ATL Innovation Showcase and Ecosystem Strengthening Conclave, united participants from all 10 districts of the Valley.

What J&K has shown us is that if we were prepared to build innovation ecosystems conducive to their context, then they have both the hunger and capability to lead the nation. This, then, is our approach for building similar ecosystems across the remote, hilly, tribal regions of our nation for their future innovators to harness the opportunity available to them.

The writers work at Atal Innovation Mission, NITI Aayog. Views are personal

MILLENNIUM POST (P-9), 26 DECEMBER 2024

Beacon of excellence

Nexus of Good

Language Learning Foundation, a recipient of the 2024 Nexus of Good Award, has been championing multilingual education to enhance foundational literacy and numeracy, impacting millions across linguistically diverse Indian states

ANIL SWARUP

What LLF has managed to accomplish under the inspired leadership of Dhir Jhingran is truly inspiring

In the glittering ceremony held on December 15, 2024 at PHD House, New Delhi, Language Learning Foundation (LLF) was one of the proud recipients of Nexus of Good Annual Awards, 2024.

Language and Learning Foundation (LLF) is an organisation focused on improving the foundational literacy and numeracy (FLN) of children in India since 2015. Collaborating with state and national governments, LLF aims to reduce India's Learning Poverty from 56.1 per cent to 25 per cent by 2027. Partnering with the National Council of Educational Research and Training (NCERT), Ministry of Education and State Governments, LLF shapes policy, develops professional courses, and supports state-level Multilingual Education (MLE) initiatives. Since 2015, LLF programmes have impacted 16.2 million children and improved the classroom practices of 1.08 million teachers in government schools across 10 Indian states.

One of LLF's core founding principles is that integrating children's primary languages into early education is essential for enhancing learning outcomes. Language is central to early cognitive and social development, encompassing communication, reasoning, collaboration, reading, and writing. Using a familiar language fosters engagement, comprehension, confidence, and verbal reasoning, while also facilitating the acquisition of additional languages. LLF also emphasises the importance of a multilingual learning environment that balances familiar and less familiar languages to support bilingual or multilingual literacy and subject learning.

In India, despite the political will and supportive policy frameworks like NEP 2020 and NIPUN Bharat, implementing MLE faces significant barriers due to the persistence of autonomous monolingual ideologies. These ideologies often exclude minority languages, particularly tribal languages, from the education system, contributing to high dropout rates and low academic and socio-economic achievement among children from tribal communities. The core issue lies in the absence of scalable, practical models to integrate multilingual education within FLN programmes. This challenge is especially acute in linguistically diverse states like Chhattisgarh and Jharkhand, where systemic gaps in teacher training, learning resources, and community engagement further hinder effective implementation, perpetuating educational inequities and socio-economic disadvantages.

The approach that LLF takes towards MLE, thus, to enhance foundational learning in language, literacy, and early-grade mathematics constitutes two broad paradigms. The first is collaborating with the state governments to integrate MLE into state-level FLN programmes from Balvatika 1 to Grade 3, under NIPUN Bharat, and the second, is showcasing a scalable model that can be implemented by state governments. This strategy ensures that MLE is embedded within the FLN curriculum, rather than treated as a separate initiative, emphasising the inclusion of children's familiar languages alongside the state or regional medium of instruction. As such, this approach spans curriculum design, learning materials, assessments, teacher training, and classroom practices, particularly in regions where non-dominant languages (NDLs) prevail.

> Expanding to 1,524 schools across all seven blocks of Bastor, the project has impacted 38,874 students, 1,894 teachers, and 320 officials

This model emphasises systemic reform, demonstration projects, capacity building, community engagement, and long-term sustainability through government ownership. The salient features of this model include:

› **Systemic reform:** LLF collaborates with state institutions like SCERT and Samagra Shiksha to embed MLE strategies into FLN curricula and teacher training. By developing guidelines that address the needs of non-dominant languages, it ensures MLE becomes part of the broader educational framework.

› **Demonstration projects:** High-touch projects in select schools serve as proof of concept, showcasing the impact of MLE strategies through classroom interventions, teacher training, and community engagement. As states gain familiarity with MLE, LLF transitions to low-touch models, offering broader support with minimal resources to ensure sustainability through the state systems.

› **Capacity building:** Continuous professional development for teachers, cluster, block and district education officials is central to scaling MLE. Through collaboration with District Institutes of Education and Training (DIETs) and other state institutions, LLF uses blended learning—combining online and face-to-face training—to maximise reach.

› **Community engagement:** Initiatives like storytelling festivals and school museums encourage local participation, fostering stronger school-community ties and ownership of MLE programmes.

› **Monitoring and evaluation:** Regular assessments and feedback loops enable data-driven adjustments, ensuring effective scaling.

› **Sustainability:** By embedding MLE into state policies and working closely with governments, it ensures long-term integration and success.

In collaboration with the Rajasthan State Government, LLF's first research and demonstration multilingual education project was implemented in Dungarpur, Rajasthan. Building on the insights from this project, the Bastar Multilingual Education programme was launched in 2022 aimed at enhancing foundational learning outcomes (FLN) for children in Chhattisgarh in partnership with the state government. This project was conceived as a combined demonstration and research framework, encompassing two interconnected yet distinct components. First, it aims to demonstrate an evidence-based strategy for implementing L1-based MLE in primary grades, highlighting its practical application and effectiveness. Second, the insights gained from this initiative are intended to expand the scope of MLE implementation at scale, serving as a proof of concept for similar socio-linguistic contexts within Chhattisgarh and other regions.

To assess the underlying challenges for the project, LLF conducted a comprehensive Language Mapping study in collaboration with the Chhattisgarh State Government. The survey revealed that over 90 per cent of Grade 1 students in Bastar District speak tribal languages distinct from Hindi, the official medium of instruction in schools. This finding underscored the need for an MLE approach to bridge the linguistic gap and enhance learning outcomes.

The Bastar MLE Project encompasses several interrelated components designed to create a comprehensive and sustainable multilingual education framework. Capacity building is a central pillar, involving the training of State Resource Groups (SRGs), District Resource Groups (DRGs), teachers, head teachers, and Cluster Academic Coordinators (CACs) to ensure effective implementation at all levels. Curriculum development focuses on designing contextually relevant guidelines, protocols, and teaching-learning materials (TLMs) that integrate students' primary languages into the learning process. Community engagement plays a critical role in fostering local ownership and support through initiatives such as storytelling sessions and Shala Sangrahalyas (MLE School Museums), with 900 storytelling sessions and 25 Shala Sangrahalyas conducted to date. Monitoring and evaluation ensure continuous improvement through regular school visits, academic support, block-level review and reflection meetings, and ongoing assessment research. These components collectively strengthen the project's impact, ensuring its alignment with the linguistic and cultural needs of the region while enhancing student learning outcomes.

Expanding to 1,524 schools across all seven blocks of Bastar, the project has impacted 38,874 students, 1,894 teachers, and 320 officials. Baseline data (December 2022) and midline data (September 2024) show significant gains: 31 per cent in literacy, 25 per cent in numeracy, and improvements in word reading (27 per cent), listening comprehension (23 per cent), and writing (18 per cent), affirming the MLE approach's effectiveness.

In addition to the Bastar MLE Project, LLF is currently implementing the Jharkhand MLE Programme in partnership with the Jharkhand State Government bodies, which has been implemented across 1,000 schools since early 2024. Concurrently, an MLE Pilot Project in Rajasthan is executed and technical support for the development and implementation of MLE initiatives is being provided in Assam and Odisha. The strategic partnerships with organisations such as UNICEF-India, HCL Foundation, Deloitte Foundation, Central Square Foundation, Maitri Trust, and the Great Eastern Shipping has been instrumental in the execution of LLF's endeavours. Leveraging insights and best practices from the Bastar project, these initiatives aim to enhance foundational literacy and numeracy (FLN) outcomes in these states through a contextually responsive multilingual education framework, thereby contributing to the broader goal of strengthening equitable and inclusive education in linguistically diverse regions.

What LLF has managed to accomplish under the inspired leadership of Dhir Jhingran is truly inspiring and presents a wonderful example of Nexus of Good. Here is a model that is already scaling and has the potential to scale even further.

Views expressed are personal

MILLENNIUM POST (P-11), 26 DECEMBER 2024

CEO SPEAKS

2024: A TRANSFORMATIVE YEAR FOR INDIAN EDUCATION

DR SANKU BOSE

The year 2024 was a landmark in the evolution of India's education system, witnessing transformative changes driven by the National Education Policy (NEP) 2020, groundbreaking technological advancements and a deep commitment to inclusivity. This confluence of policy, innovation, and vision marked a decisive leap toward an education system that is truly future-ready and globally competitive. Even though much more remains to be done, I strongly believe that this positive momentum will help steer our priorities in the right direction.

The NEP 2020 set the pace for comprehensive reform, reshaping education across all levels. Multidisciplinary approaches, flexible curricula, and the Academic Bank of Credits gained traction, with over 70% of universities adopting credit transfer mechanisms, as reported by the University Grants Commission (UGC). The policy's focus on regional language instruction saw a surge, with states like Karnataka and Tamil Nadu rolling out multilingual textbooks for foundational learners, supported by AI-enabled translation tools such as Bhashini.

The NEP also emphasised vocational training, aligning it with industry standards. Initiatives like the Skill India programme reported that 1.5 million students received certifications in fields ranging from AI and renewable energy to agri-tech, a significant increase from the previous year. These developments underscored India's determination to blend academic excellence with employable skills.

As India moves forward, let the achievements in 2024 serve as inspiration—a reminder that investing in education is investing in hope, resilience, and the boundless potential of a brighter tomorrow for our students and country as a whole

Technology played an instrumental role in bridging educational disparities. Government platforms like SWAYAM, with its repository of multilingual e-resources, catered to over 35 million active users, primarily in underserved areas. The adoption of hybrid learning models expanded access to quality education, even in the remotest corners of the country. AI-driven personalised learning tools gained popularity. The Ministry of Education promoted virtual labs, powered by AR and VR technologies, emerged as transformative tools, offering immersive science experiments and technical training to students without physical lab access. The Ministry of Education also launched the AI for All Programme in collaboration with Intel. Karnataka launched the Shiksha Co-pilot, an AI-powered digital assistant for teacher training in collaboration with Microsoft Research India. The project aims to improve learning outcomes and empower teachers to create comprehensive, personalised teaching resources and learning experiences grounded in local curriculum, language and context. More such initiatives shall be welcome addition to the effort of igniting passion among young minds.

Vocational training received much overdue focus in 2024, with programmes like Pradhan Mantri Kaushal Vikas Yojana (PMKVY) scaling up to meet the demands of emerging industries. Collaborations with corporates ensured that students received hands-on experience in areas such as AI-based diagnostics and sustainable manufacturing. Partnerships between educational institutions and corporate giants such as Tata, Infosys, Wipro, Reliance etc. ensured that students received training aligned with real-world requirements. According to NITI Aayog, over 1.2 million students enrolled in vocational courses in 2024, demonstrating the growing appeal of skill-based education. This aligns well with successful interventional trends worldwide, most noticeably in countries like Germany where vocational education is a stream of choice.

Indian education made significant strides globally through partnerships with leading universities and international organisations. University of Melbourne inaugurated their first-ever Global Centre at Delhi, further deepening their presence in India. IIT Bombay has just announced their partnership with Tohoku University, Japan which shall offer students MTech and PhD dual degree programmes. Sister Nivedita University (SNU) has also accelerated their collaboration with reputed global institutions, such as Federation University, Australia. The "Study in India" initiative attracted over 50,000 international students, enhancing India's reputation as a hub for affordable and high-quality education. These efforts fostered cross-cultural exchanges, providing Indian students access to world-class resources while promoting India's academic strengths.

Mission NIPUN Bharat recorded significant milestones, achieving foundational literacy and numeracy among 85% of its targeted students. Coding and robotics were introduced into the curricula of 3,500 schools under the Atal Innovation Mission, enabling young minds to solve real-world problems creatively. Sustainability education, too, gained prominence with schools turning their focus on environmental sustainability efforts.

Regulatory reforms streamlined governance and access to higher education. The Common University Entrance Test (CUET) saw participation from over 1.5 million students, ensuring equitable access to prestigious institutions. These changes reduced bureaucratic hurdles and promoted transparency, paving the way for a meritocratic education system.

Inclusivity remained a central focus in 2024, with scholarships for underprivileged students witnessing an increase under government schemes like Pragati and Saksham. Gender parity initiatives also made significant strides, with the enrolment of girls in higher education showing a 32% increase over a decade as reported by the All India Survey on Higher Education (AISHE). Regional and indigenous knowledge systems received renewed attention, ensuring that tribal and rural students felt represented in the curricula. The North East of our country is the leader in inclusivity in education, as per the AISHE report.

The strides in education in 2024 underscore India's unwavering commitment to building an education system that transcends barriers and empowers every learner. They are a powerful testament to India's resolve to invest in its most powerful resource: its people. As we look to the future, let this year be a reminder that education is not merely a tool for individual success but the foundation for a just, equitable, and progressive society. As India moves forward, let the achievements in 2024 serve as inspiration—a reminder that investing in education is investing in hope, resilience, and the boundless potential of a brighter tomorrow for our students and country as a whole!

The author is the Group CEO of Techno India Group, a visionary and an educator. Beyond his corporate role, he is also a mentor who guides students towards resilience and self-discovery

mil/26/12

HINDUSTAN TIMES (P-16), 27 DECEMBER 2024

Educating India's young population

The Vidyalaxmi scheme seeks to democratise higher education by allowing young Indians to choose a quality college of their choice

The Vidyalaxmi scheme offers a push and pull factor for students and institutions respectively. HT PHOTO

Pramath Raj Sinha

On November 6, 2024, the Union Cabinet approved the path-breaking PM Vidyalaxmi scheme to financially support meritorious students who secure admission to India's top higher education institutions. In one stroke, it offers possibilities for a generation of young Indians to choose a high-quality college of their choice.

By providing collateral-free, guarantor-free education loans, and interest subventions by income level, the scheme aims to cover over 22 lakh students (roughly 22% of all students enrolling in colleges each year) enrolling in the top 860 higher education institutions — across private, state-run and centrally governed institutions — based on the National Institutional Ranking Framework (NIRF). Students who apply for a loan amount up to ₹7.5 lakh will be eligible for a credit guarantee of 75%. Students with a family income of up to ₹8 lakh who are not eligible for benefits under any other government scholarships and interest subventions, will receive a 3% interest subvention for a loan amount up to ₹10 lakh during the moratorium period.

The interest subvention is set to support one lakh students every year, with a preference for students from government institutions who opt for technical or professional courses.

This intervention is in addition to the PM Uchchatar Shiksha Protsahan Central Sector Interest Subsidy (USP CSIS) Scheme where students with an annual family income of up to ₹4.5 lakh, pursuing technical or professional courses from approved institutions, get full interest subvention for education loans up to ₹10 lakh during the moratorium period.

The scheme stands out for three reasons. First, it democratises access. Getting student loans has long been a big challenge due to high rates of interest, limited coverage and heavy requirements for collateral, earning co-applicants and credit scores, along with inconsistent practices prevalent across banks and financial institutions. By reducing financial constraints to prioritise merit and excellence, the Vidyalaxmi scheme enables a student's basic, rightful access to the best institutions in the country. Financial burden not only restricts a student's monetary independence but also limits their social and psychological freedoms and constrains an individual's sense of the world. That is a costlier burden for a nation to carry if it wants to maximise productivity and ensure that people lead meaningful lives.

Second, the Vidyalaxmi scheme empowers young students to set aspirational goals. Beyond providing financial ease and predictability, the scheme is an effort on the part of the government to nudge students, families and communities to pursue higher education with greater confidence and dedication. Students must lead their lives with choices that are informed by their interests. Good quality education opens that door for them. The scheme ensures that financial support is targeted at credible and high-quality institutions and not misdirected or misused.

High-performing institutions promise exposure to a wider set of opportunities, offer choices to students to realise their full potential, and enable them to receive support from an otherwise difficult-to-reach network of peers, mentors and professionals to ultimately make more conscious career decisions. In this sense, the Vidyalaxmi scheme is a loud recognition for higher-ranking institutions and a clear call-out for other institutions to compete for quality and grow beyond a degree-granting machine.

Third, on a national level, the scheme is an effort to channel the productivity of the growing young population and invest in the country's natural social capital. India is home to the largest young population in the world, with over 40% of the country's 1.45 billion people being under 25. The median age in India is 28, while it is 38 and 39 in the US and China respectively. We have the world's second-largest higher education system, after China. However, the demand from our growing population is increasing the burden on existing institutions. The NIRF rankings this year revealed that 52% of the top-ranked institutions are concentrated in just five states — Tamil Nadu, Karnataka, Maharashtra, Uttar Pradesh, and Delhi. Given that the gross enrolment ratio (GER) in higher education currently stands at 28.3%, the urgency to increase the supply of high-quality education institutions and enhance their pull factor haunts us now more than ever.

Interestingly, the Vidyalaxmi scheme offers a push and pull factor for students and institutions respectively. Its potential criticism could be that Indians are not big fans of taking loans and that even when we do take loans, we are unable to repay on time. Even at differentiated interest rates, loans remain a burden. However, recent reports on India tell us that the loan portfolio for domestic higher education has increased at an average of 2% year-on-year since 2019, reaching ₹678 billion in the 2023 financial year.

What we (must) realise is that enrolling in higher education is still predominantly seen and experienced as a personal affair for families, with personal savings and personal loans being considered the first avenue to finance a child's higher education. The government's intervention, then, becomes critical to alleviate such personal pressures.

Higher quality institutions also ensure better outcomes for students in terms of jobs and careers which enables them to repay on time. Indian School of Business (ISB), which is India's premier business school, is a case in point. Since its founding year in 2001, the institution has offered students the option to avail collateral-free loans through its bank partners and has experienced not a single case of default from any student availing such a loan provision. While ISB may be an outlier, it goes to show that institutional excellence can unlock a virtuous cycle of students taking loans and being able to repay on time.

So, is the current scope of the Vidyalaxmi scheme enough? Perhaps not. But this is just the beginning. And a great starting point. Done right, it could be a game changer.

Pramath Raj Sinha is founder and chair of the Board of Trustees of Ashoka University and founding dean of ISB. The views expressed are personal.

INDIAN EXPRESS, (P-14), 27 DECEMBER 2024

LETTING THE READER DOWN

Decision of India Post to scrap Book Post service goes against the reading culture that it wanted to cultivate in the first place

INFORMATION AT FINGERTIPS is the order of the smartphone era. Scroll, pause, scroll, and pause. Repeat until complex issues are simplified into small bites. There is no need for extensive reading. Information is the protagonist; knowledge the casualty. At a time when people's attention spans have come down to around eight seconds, books seem to be a thing of the past. Still, some people search for new arrivals. They look for fresh thoughts, crave the smell of fresh pages, and send books to their loved ones. They celebrate access to knowledge, not merely information.

The Indian Post office, however, does not seem to be willing to uphold and cultivate the reading culture. It has discontinued its longstanding "Book post service" which let people send 5 kg of books for only Rs 80. The motivation behind the Book Post was to promote reading and develop a literary tradition. The shift from Book Post to the "Registered Parcel", through which books are supposed to be sent from now onwards, will result in people being charged at least three times the earlier cost. Knowledge should at least fly faster than rumours. The domination of the WhatsApp university in shaping the knowledge system needs serious intervention. And for this purpose, the books should fly at nominal costs.

Studies suggest that even in the age of new media, Indians, on average, read one hour more than their international counterparts. It should be seen as their strength and tapped into for developing a knowledge base that can contain the overwhelming spread of (mis)information. In the words of Stephen King, "Books are a uniquely portable magic". It's better not to charge its portability — the magic might be lost.

The key to shaping inclusive future

DINESH SOOD

As automation, artificial intelligence and globalisation reshape industries, lifelong learning and adaptability are essential to staying competitive

In an era of rapid technological advancements and shifting economic landscapes, the conversation around skill development has never been more relevant. Skills are no longer just tools for employment; they are the chisels and hammers that sculpt our collective future, shaping individuals and nations. Historically, skills were tied to tradition and geography. A farmer learned the trade from generations before, and an artisan honed their craft through years of apprenticeship. But the 21st century has shattered these boundaries. Today, the Advent of automation, artificial intelligence, and globalisation demands a workforce that can continuously adapt, innovate, and learn. Skills are not static; they evolve, and the pace of this evolution is accelerating. At the heart of this transformation lies the understanding that skill development is no longer a one-time event but a lifelong journey. The future belongs to those who embrace this mindset. A software engineer may need to transition to being a data analyst tomorrow. A marketer should delve into behavioural psychology or artificial intelligence. The world is moving toward a gig economy, where flexibility, creativity, and adaptability are not just assets but necessities. Those who rest on their laurels risk being left behind in a world where change is the only constant. India has the brain power needed to rise in the skilled world. Governments, educational institutions, and private enterprises all play a role in fostering a skill development culture.

Traditional education systems, built to serve industrial-era needs, must undergo a radical shift. The focus should be more than rote learning or degree acquisition, fostering critical thinking, problem-solving, and technical competencies. Initiatives like coding boot camps, vocational training, and online learning platforms have already begun to disrupt the status quo, democratising access to quality education. But more must be done to ensure inclusivity and widespread reach.

When we talk of skills, we mean making one employable to earn a livelihood quickly and decently. As per the National Policy of Skill Development and Entrepreneurship 2015, We had the target to impart various skills to 40 crore people by the end of 2022. However, around 4 crore people have been trained. Still, there is a massive opportunity for varied stakeholders to come forward and arm our men and women with employable skills. It is nothing but aligning the entire skilling ecosystem with the demands of employers. Today, a considerable gap exists between the demand for a skilled workforce and their availability in the market.

Among 150 million young people in developing countries, around 33 per cent are skilled but unemployed, as their employability quotient could be better. Government policy interventions can bridge the gap between demand and supply in the workforce market. Incentivising employable skill development through subsidies, tax benefits, or public private partnerships can empower citizens to upskill or reskill. Furthermore, governments must create frameworks encouraging lifelong learning, such as subsidised courses or learning credits for professionals looking to update their skills. Meanwhile, industries must recognise their role in creating agile workforces.

> AMONG 150 MILLION YOUNG PEOPLE IN DEVELOPING COUNTRIES, AROUND 33 PER CENT ARE SKILLED BUT UNEMPLOYED, AS THEIR EMPLOYABILITY QUOTIENT COULD BE BETTER. GOVERNMENT POLICY INTERVENTIONS CAN BRIDGE THE GAP BETWEEN DEMAND AND SUPPLY IN THE WORKFORCE MARKET

Corporate training programs, mentorship initiatives, and collaborations with educational institutions are not just investments in employees but investments in the future of the business itself. Companies that foster a culture of continuous learning often enjoy higher productivity, better employee retention, and a competitive edge in their industries. Moreover, the private sector can lead the way in identifying future skills by analysing market trends and technological advancements, ensuring training programmes remain relevant and forward-looking. However, skill development is not just about economic progress but also a tool for social empowerment. In many developing nations, lack of access to education and skills has perpetuated cycles of poverty. Equipping marginalised communities with in-demand skills can uplift entire populations, ensuring more inclusive growth. A young woman in a rural village learning coding or a displaced worker mastering digital marketing are potent examples of how skills can change lives. These stories highlight the transformative potential of skill development, turning adversity into opportunity and fostering hope where it is needed most. This empowerment extends beyond individuals to communities and entire societies. Skilled populations are better equipped to address local challenges, from improving infrastructure to boosting small businesses.

In this way, skill development catalyses innovation and self-reliance, reducing dependency on external aid and fostering sustainable growth. Communities investing in their human capital often see a ripple effect, where increased productivity and prosperity lead to better healthcare, education, and quality of life. As we champion skill development, addressing the challenges it presents is also critical. The digital divide, for instance, threatens to exclude those who lack access to technology or internet connectivity.

Rural areas and underserved regions often bear the brunt of this inequity, leaving millions without the tools to participate in the modern economy. Bridging this gap requires a concerted effort from the public and private sectors, including infrastructure investments, affordable technology, and localised training programs catering to specific regional needs. Similarly, a one-size-fits-all approach to skills training is likely to fail. Each individual's journey is unique, shaped by their aspirations, context, and potential.

Personalised, learner-centric approaches must become the norm. Adaptive learning technologies powered by artificial intelligence can significantly tailor educational content to suit individual needs and learning styles. This ensures that skill development is not only effective but also engaging and relevant. Moreover, we must shift the narrative around failure in skill acquisition. Learning a new skill often involves trial and error, and creating an environment where individuals feel encouraged to experiment and grow without fear of judgment is essential. Employers and educators must foster a culture that values resilience and continuous improvement over perfection. The metaphor of skill as a sculptor is apt. Like marble, raw talent has limitless potential. But becoming something remarkable requires the right tools, guidance, and effort.

Skill development chisels away ignorance carves out opportunities and polishes the rough edges of human potential. It bridges the gap between dreams and reality, between where we are and where we aspire to be. As we look to the future, let us remember the power of skills to redefine what is possible. Whether combating climate change, revolutionising healthcare and wellness, or exploring the frontiers of space, skilled individuals will be at the helm of every breakthrough. By investing in skill development today, we are not just preparing for tomorrow but shaping it.

The urgency of this investment cannot be overstated. The COVID-19 pandemic served as a wake-up call, highlighting the vulnerabilities of unskilled or under-skilled workers in a volatile economy. Millions faced job losses, and industries struggled to adapt to new remote work and digital operations norms. Yet, it also demonstrated the resilience of those equipped with the right skills to pivot and thrive in uncertain times. The lessons learned must guide our approach, emphasising the importance of resilience, adaptability, and future-proof skills. Furthermore, as technology evolves, ethical considerations must be integrated into skill development.

Understanding the implications of artificial intelligence, data privacy, and sustainability is as crucial as mastering technical competencies. This holistic approach ensures rapid and responsible progress, fostering a future where innovation aligns with human values and societal well-being. In conclusion, skill development is more than a response to economic demands; it is a transformative force that shapes our world. It empowers individuals, drives innovation, and fosters inclusive growth. By investing in skills, we invest in people, and by investing in people, we invest in the future.

(The writer is co-founder and MD of Orane International, a training partner of the National Skill Development Corporation and a network Member of India International Skills Centres. The views expressed are personal)

TRIBUNE (P-6), 27 DECEMBER 2024

Student visa fraud

Canada needs to get its act together

AN ongoing investigation by the Enforcement Directorate (ED) has found that over 260 Canadian colleges and universities allegedly entered into agreements with two Indian firms involved in a human trafficking racket. This revelation is a major embarrassment to the Canadian government, which asserted earlier this week that it was committed to strengthening the integrity of its immigration system. It's apparent that Canada's efforts to curb visa fraud have left a lot to be desired.

Canadian immigration authorities have detected thousands of potentially fraudulent student acceptance letters this year, but this is a belated step to cover up regulatory lapses. The ED, which is probing a money laundering case linked to the trafficking of Indians, has unearthed a conspiracy under which applicants were charged Rs 55-60 lakh each to facilitate their illegal entry into the US. The modus operandi was simple: take admission in a Canadian college or university; obtain a student visa; go to Canada but don't join the institution; sneak into America through the US-Canada border. The massive fraud might have gone undetected had a horrifying tragedy not happened. A family of four from Gujarat was found frozen to death near the border in January 2022. The desperate pursuit of the American Dream had claimed the lives of Jagdish Patel, his wife and two kids.

Canada continues to be a popular destination for Indian students, genuine or otherwise, even though Delhi-Ottawa relations have soured over the past year or so. In the current year, over four lakh Indians are studying in the Maple Country. The ED findings should prompt Canada to clean up its immigration system on priority. Considering that foreign students and immigrants have played a key role in the country's economic success, Canada should crack down on shady institutions and unscrupulous agents. Closer coordination with India is a must to weed out fraudsters.

Marginalised by caste, marginalised in education

Atul Kumar, the son of a daily wage worker and from the Scheduled Caste community, lost his seat at IIT Dhanbad after he was unable to pay the seat booking fee of ₹17,500 that was required to secure his admission. His case gained widespread attention on social media, prompting the Supreme Court of India to intervene by exercising its extraordinary powers under Article 142 to grant him admission. There are many and similar cases like Atul's, but which never draw media attention or receive justice, leaving many deserving students without opportunities due to financial constraints and systemic inequalities.

Sumant Kumar

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The rise in tuition fees

The struggles that Dalit students face echo the challenges of pre-Independence India when they were barred from enrolling in educational institutions because of their caste. While these historical restrictions were overt, the situation now is more insidious. Under the "Atmanirbhar Bharat Abhiyan", the Government of India has been pushing for self-reliance in institutions, leading to a significant increase in fees in many government colleges and universities such as the Indian Institutes of Technology (IIT), the Indian Institutes of Management, the central universities, and the National Law University. For instance, in 2016, the IIT council's standing committee agreed to increase the undergraduate tuition fees by 200%. This meant a fee increase from ₹90,000 to ₹3 lakh a year.

In response to the criticism regarding the fee increase, the committee set up by the government asserted that students from marginalised communities would benefit from the Vidyalakshmi scheme, which offers interest-free scholarships. However, while this initiative aims to provide support, it remains insufficient to fully address the financial challenges faced by these students, especially as fees continue to rise. The hike in fees that was implemented in seven IIMs including increased tuition fees; IIM-Lucknow hiked it by nearly 30%, IIM-Ahmedabad and IIM-Shillong by 5%, IIM Lucknow by 29.6%, IIM-Calcutta by 17.3%, IIM-Kozhikode by 23.1%, IIM-Ranchi by 19% and IIM-Tiruchirappalli by 20%. IIT-Delhi increased tuition fees for full-time M.Tech students in the semester in 2022-23. The total academic fee is now ₹53,100, which does not include hostel fees. This is a 100% increase from last year's fee of ₹26,450.

The frequent hikes in fees have made it increasingly difficult for students from the marginalised communities to afford higher education or even pursue studies through loans.

Rising costs in higher education are one of the many issues affecting Dalit students

With rising costs in the Indian education system, many students from the marginalised communities are unable to even consider enrolling in prestigious institutions such as the IITs and the IIMs despite securing competitive ranks. As a result, while some students manage to cope with the financial burden, there are others who are overwhelmed by the stress and the inequality in academic institutions. This pressure, exacerbated by the high cost of education, has a human angle too. In 2021, data showed that over the past seven years, 122 students from the IITs and the IIMs had ended their lives, many due to the financial strain of rising fees and the anxiety of securing employment.

The issue of dropouts

Another harsh reality is that many students who manage to enrol themselves in prestigious institutions eventually drop out due to their inability to afford rising education fees. The Human Resources Development Ministry reported that 2,461 students dropped out of IITs in just two years (2017 and 2018). Last year, this issue was raised in the Lok Sabha, revealing that over the past five years, more than 13,500 students from the Scheduled Castes (SC), the Scheduled Tribes (ST), and Other Backward Classes (OBC) had dropped out of courses in the central universities, the IITs and the IIMs. Government data showed that in the central universities, 4,596 students from the Other Backward Classes, 2,424 SC students, and 2,622 ST students dropped out during this period. In the IITs, 2,066 OBC students, 1,068 SC students, and 408 ST students left. Similarly, the IIMs saw 163 OBC, 188 SC, and 91 ST students drop out over the past five years. These numbers highlight the significant challenges faced by marginalised communities in accessing and sustaining higher education in India.

One of the key reasons behind the poor economic conditions of the Dalit community is that their identity in India is still largely defined by caste. Dalits continue to be denied the opportunity to perform work that is on a par with others in society. This has not only left them economically marginalised but also socially vulnerable. Dalits in India are considered an oppressed and discriminated class, often labelled as "untouchable". Historically, this stigmatisation has meant that Dalits have been denied access to education. The term "untouchables" also refers to those who have been forced into the most undesirable and degrading jobs. A recent survey in 29 States on urban sewer and septic tank workers revealed that 92% of these workers belong to Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC). A 2019 report by former Education Minister Ramesh Pokhriyal revealed that 95% of faculty positions in IITs were held by individuals from upper caste backgrounds, with only 5% allocated to SC, ST, and OBC categories, despite these groups representing 70%-80% of India's population. An RTI filed by IIT-Bombay students further exposed the disparities, showing that 24 departments had no SC faculty, 15 lacked ST representation, and nine had no OBC faculty. These statistics highlight the deep-rooted caste-based inequalities that persist in both employment and education.

The barriers still exist

After Independence, with provisions in the Constitution and welfare mechanisms, Dalit school enrolment rates have improved over time However, Dalit children continue to face significant barriers in education, including poverty, social discrimination, and caste-based prejudice. Dalit students are often judged based on their clothes, language, and other markers, making it difficult for them to integrate with their upper caste peers.

In many cases, caste-based remarks and discrimination wound these students, leading to social isolation. Some students succumb to the emotional toll of this prejudice – there are cases such as a woman postgraduate medical student in a medical college in Maharashtra and two students from IIT Bombay and IIT Delhi that are painful reminders of this reality. These incidents underscore the persistent shadow of casteism and harassment over the aspirations of many Dalit students. This troubling situation raises a critical question: how can these prestigious institutions effectively address this issue and foster a safe, inclusive environment for all students?

The unfortunate incidents of student suicides point to the immense pressure students face in the education system. Many students are burdened by their families' expectations that completing a degree will solve their economic problems. But unemployment in India is also high. An RTI filed in 2024 about IIT placements showed that approximately 8,000 students (38%) across 23 IIT campuses remained unplaced this year. For students from the marginalised communities, this struggle is even more pronounced, as their caste identity often doubles the challenges they face in securing jobs. These issues underscore the pressing need for systemic reforms in education and employment to alleviate the pressures on students and address caste-based disparities.

PIONEER (P-6), 28 DECEMBER 2024

Homeschooling: Affordable and holistic education option

RACHNA **LAKHPATI**

Homeschooling is transforming its image from an unconventional option to a widely accepted educational route as many parents opt for this affordable choice

With the rising costs of living, an increasing number of parents are reevaluating the conventional approach to education. An increasing number of families nationwide are viewing homeschooling as a legitimate and empowering option compared to traditional education systems.

The choice is influenced not only by financial considerations but also by a commitment to nurture the child in a manner that aligns with their unique needs and the family's values. For many years, traditional educational institutions have been the cornerstone of childhood learning. However, nowadays, an ever-growing number of parents are questioning whether the significant expenses associated with private education, or even the costs of public schooling, truly justify the investment. The homeschooling movement presents a compelling argument: education can occur beyond the confines of traditional classrooms. The main factor driving this change is the expense involved. Education, particularly in private schools, often

presents a challenging list of costs: tuition, uniforms, transportation, extracurriculars, and supplies. Homeschooling greatly alleviates these financial burdens. Parents now have the opportunity to invest in essential resources such as top-notch educational materials, online courses, or tailored coaching—all designed to cater to their child's unique needs.

Moreover, homeschooling encourages families to tap into their creativity and resourcefulness. Libraries, free online resources, and community programmes provide abundant learning opportunities with minimal or no expense. In a time filled with numerous digital resources, parents have the ability to craft a curriculum that is both cost-effective and thorough. In addition to reducing expenses, there are numerous other factors contributing to the rising popularity of homeschooling.

Parents hold the view that homeschooling can significantly enhance a child's personal and academic development. In contrast to conventional educational institutions, homeschooling offers remarkable flexibility, allowing lessons to align with a child's interests, learning pace, and preferred methods of engagement.

A student passionate about science, for instance, can dedicate additional time to experiments and practical activities, while those with a flair for the arts can unleash their creativity free from the limitations of a rigid schedule. Another key factor is the importance of comprehensive development. Homeschooling transcends traditional textbooks and offers genuine, real-world learning experiences. Cooking transforms into a blend of maths and chemistry; gardening embodies principles of biology and sustainability; a visit to the museum or park imparts lessons in history and ecology.

These activities, along with practical knowledge, foster family connections—something that seems rare in today's world. Certainly, homeschooling comes with its drawbacks. Concerns have been voiced by critics regarding socialisation and the stress it imposes on parents. Nevertheless, families who choose to homeschool have found innovative ways to address these issues, including forming co-op groups, engaging in community sports, and coordinating group field trips.

This signifies a movement towards appreciating cost-effectiveness, adaptability, and personal expression in education—a tendency expected to expand as households adjust to financial circumstances. Ultimately, homeschooling transcends being merely an educational option; it embodies a declaration of empowerment. For parents aiming to reshape education in a way that resonates with their values, this journey offers not just information but a profoundly rewarding experience for both themselves and their children.

(The writer is a motivator and a freelance writer; views are personal)

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TELEGRAPH (P -10), 28 DECEMBER 2024

Education for the economy

India's aspirations to become a $5 trillion economy by 2024-25 and 'Viksit Bharat' by 2047 have been under discussion for a while. Many economists and policymakers believe that these targets are highly ambitious. Achieving them requires significant improvements in education. In a service-driven economy, a well-educated workforce is the key to boosting productivity, driving innovation, and supporting long-term growth. Aligning education with the evolving needs of the labour market is crucial to realising India's economic aspirations.

In his famous book, *The Economic Value of Education*, the Nobel laureate economist, T.W. Schultz, suggests two important channels through which education contributes to economic growth: through the advancement of knowledge and technology that originates from research and by increasing the supply of skilled labour through the expansion of schooling levels, which improves the quality of both human and machine factors. Today's economic development is largely shaped by technological advances where education serves significantly in terms of generating and diffusing new technologies. Additionally, the rate at which economies can absorb technology developed elsewhere depends on the knowledge and the skills of their populations.

Research shows that investing in education directly boosts economic growth. In their 1992 research paper, "A Contribution to the Empirics of Economic Growth", published in *The Quarterly Journal of Economics*, the economists, N. Gregory Mankiw, David Romer, and David N. Weil, extend the Solow growth model by incorporating human capital alongside physical capital. They show that differences in education, measured in years, help explain variations in living standards across countries. This suggests that countries like India can accelerate their development by enhancing the quality of education. *Education Counts: Towards the Millenium Development Goals*, an independent, annual publication by UNESCO, stated in its 2010 publication that each additional year of schooling raises average annual gross domestic product growth by 0.37%. Additionally, one extra year of schooling increases an individual's earnings by up to 10%.

The importance of education in a country's growth and development is well-recognised. This has led to a significant expansion of educational institutions and enrolment. According to the ministry of education, in 2021-2022, primary enrolment stood at 104.8%, upper primary at 94.7%, secondary at 79.6%, higher secondary at 57.6%, and higher education at 28.4%. The National Education Policy 2020 has set an ambitious goal to achieve universal enrolment from preschool to the secondary level by 2030 and a 50% gross enrolment ratio in higher education by 2035. To realise the targets of NEP, enrolment capacity at the secondary, higher secondary, and higher education levels needs substantial expansion.

Despite consistent improvements in enrolment rates, there is rising concern relating to the quality of learning outcomes. Many students struggle with basic literacy and numeracy skills, leading to high dropout rates and low levels of academic achievement. Since enrolment is nearly universalised at the elementary level, the focus should now shift to ensuring the universalisation of learning. Students should acquire the minimum learning required for every stage of schooling. Otherwise, universal enrolment will serve no purpose. The *Annual Status of Educational Report (Rural) 2023* reveals that 28.8%(25) of students aged 14-18, who are enrolled in Class X, are unable to read the text at the level of a second-grade student. Additionally, 56% of these students are unable to solve simple arithmetic problems. Similar failures afflict 50% of students enrolled at the higher secondary level. This implies that half of the students enrolled at the higher secondary level fail to meet the expectations of the primary level itself.

Despite considerable progress in

education, India's workforce remains dominated by individuals with low levels of education. According to the Periodic Labour Force Survey 2022-23, 24.2% of workers are illiterate, and only 12% have educational qualifications at the graduation level or higher. Paradoxically, higher education is associated with higher unemployment rates: 13.4% among graduates and 12.1% among postgraduates, compared to the overall unemployment rate of 3.2%. For those with secondary education and above, the unemployment rate is 7.3%, more than double the national average. Perhaps the clearest evidence of the widening skill gap between the education provided in Indian institutions and industry demands is that about 38% of IIT graduates were unable to secure campus placements this year.

This high unemployment among the educated can be attributed to a mismatch between the skills acquired through education and those demanded by the job market. Many highly-educated individuals are often seen as overqualified or lacking in relevant work experience. Additionally, poor learning outcomes in some educational systems contribute to graduates lacking necessary skills and competencies, exacerbating the challenge of finding suitable employment.

Addressing these issues requires more than improving learning outcomes within the formal education system. There is a need to align education with market demands by providing targeted training and development opportunities. While initiatives like vocational training programmes have been introduced by the Indian government, only 27.4% of workers have received vocational training and just 3.8% have received formal training, according to PLFS 2022-23.

To address skill mismatches and improve employment outcomes, initiatives like the National Apprenticeship Promotion Scheme are a step in the right direction. It provides financial incentives to establishments hiring apprentices, thereby supporting skill development through on-the-job training, supports apprenticeships in MSMEs and underserved areas, and provides up-skilling for those trained by government programmes. The data show that there has been rising participation in this scheme, with total enrolments tripling over the past three years to reach 0.9 million in FY24. This year's Union budget aimed to tackle the problem by emphasising the skilling, re-skilling, and upskilling of job seekers and by enabling the creation of quality jobs through the introduction of the employment-linked incentive scheme that complements the existing production-linked incentive scheme.

While Artificial Intelligence may disrupt certain jobs, research suggests it can also create new opportunities across industries like transportation, logistics, retail, data analytics, and manufacturing. Economists have advocated for educational programmes, innovative employment models, and support for displaced workers to ease the transition.

To realise India's ambitious economic goals, a strategic and multi-faceted approach is essential. Expanding educational access and improving quality are foundational, but aligning educational outcomes with the labour market's needs is equally important. This includes addressing skill mismatches through targeted vocational training and reskilling initiatives, such as those supported by NAPS. As AI continues to reshape the employment landscape, it is vital to not only expand educational access but also make the education-industry connect to frequent alignments of curricula with the needs of employers and industries. By integrating education reforms, skill development, and technological advancements, India can build a resilient economy capable of achieving its growth aspirations while ensuring equitable opportunities for all.

Vachaspati Shukla and Santosh Kumar Dash

28/12/24

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ASSAM TRIBUNE (P-6), 29 DECEMBER 2024

'Indigenous knowledge rooted in folk life'

Face to Face

PRASANTA J BARUAH
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***Prof Dinesh Baishya** believes that for sustained development, it is necessary to investigate scientific components of India's old knowledge system.*

Prof Dinesh Baishya teaches Indian and Indigenous Knowledge System at Assam Don Bosco University. A senior educationist of the State, he is a former VC of Krishnaguru University and Principal of B Borooah College.

What is the significance of the Indian Knowledge System (IKS)?

The significance of Indian knowledge system is to address contemporary societal issues by promoting and facilitating further research in a variety of fields, towards sustainable development in the country. The objectives of study in Indian knowledge system is to foster interdisciplinary and multidisciplinary research on all subjects. Indian Knowledge system captures the wisdom of ancient India and offers a vision for its future goals, especially in the areas of health, education, the environment, and all facets of life.

Why was Indian Knowledge System (IKS) made a part of the National Educational Policy (NEP) 2020?

NEP 2020 includes the Indian Knowledge System as one of its essential element. The goal of implementing IKS is to teach at all educational levels about India's extensive and rich knowledge legacy, which includes science, technology, literature, philosophy, culture, medicine, and more. Exploring the greatest amount of old knowledge and traditions across several fields in order to promote the nation's overall sustainable development is the aim of this curriculum.

Are myths also a part of the Indian Knowledge System?

This is a commonly asked question regarding implementation of Indian Knowledge system in the curriculum. There are differing views on this matter. Myths are considered to be part of old Indian wisdom, which prevails in popular belief. While knowledge is usually grounded in history and science. Political and ideological motivations have led to the creation of a number of myths that are disconnected from reality throughout India's educational history. Nevertheless, for future sustainable development, it is necessary to investigate the many scientific and technological components of India's old knowledge system.

What is the difference between the Indian Knowledge System and Indigenous Knowledge System? Will IKS take precedence over Indigenous Knowledge System?

Indian knowledge system is a body of knowledge developed by the people of ancient India at different times. Indigenous knowledge is the factual knowledge of particular groups of people that reflect their tradition-based experiences. They are specific to their cultures, societies and ecosystems. Development of indigenous knowledge evolves not in the laboratory or any formal educational institution, but in the lap of nature where folk people reside with their perception of man, nature and culture. Indigenous knowledge is the results of informal experiments through trial and error, intimate understanding of the environment in a given culture and associated with folk life for higher longevity.

I do not think that the Indian knowledge system will prevail over the indigenous knowledge system. The indigenous knowledge system is vast and concerns the lives and cultures of thousands of ethnic communities across the vast country of India.

Why is learning of Indigenous Knowledge System important?

Indigenous wisdom is the scientific and technological legacy that has been gathered by each indigenous people throughout the world. Indigenous people have created countless works of art and technology over the years. Huge repositories of Indigenous knowledge and expertise are disappearing without warning, putting mankind at risk of losing its history and possibly its future as well. In the thousands of cultures that still exist on Earth, there is a vast amount of wisdom preserved in the memories of elders, healers, midwives, farmers, fishermen, and hunters. This important body of indigenous knowledge must be studied scientifically and be used for sustainable development for the future society.

How can students benefit from studying IKS in the era of Artificial Intelligence?

Concerns regarding the ethical implications of biotechnology, robotics, and artificial intelligence are developing as these fields develop. With its focus on the moral and ethical aspects of knowledge, IKS can provide direction for creating technologies that put social justice, environmental sustainability, and human well-being first.

The requirement for thorough scientific validation of indigenous knowledge is one of the difficulties in combining IKS with contemporary technologies. The role of Universities and research organizations will be extremely important in this aspect.

You did your PhD on Northeast's Indigenous Knowledge in the 1990s. As a science student what motivated you to do so?

My life's ambition was to teach Assamese literature, but I got admitted into the science department, as my mother wanted me to become a doctor. I was admitted to Zoology because of my poor math skills. I received the highest grade in my M.Sc. because of my understanding of fish and fishing in the village. Immediately I began studying zoology for PhD, but I gave it up as I didn't find it fascinating. After a long break, I began doing research in cultural studies at Tezpur University under the supervision of Professor Birendranath Datta. My research topic was the exploratory research of science and technology in the indigenous knowledge of the people of Northeast India.

What are the key components of Assam and Northeast India's Indigenous Knowledge System?

Discovering science and technology from indigenous wisdom is a relatively new field of study at a higher level of research. The study of indigenous knowledge rooted in the culture of North-Eastern India constitutes a vast area of research. In addition to the social and cultural aspects of various scientific topics have their roots in the indigenous knowledge of the people of this region of the country. I have researched and studied many interesting facts in the fields of science such as Taxonomy, Agricultural Sciences, Human Medicine, Veterinary Medicine and Animal Husbandry, Environmental Sciences, Mathematics and Astronomy, Fisheries, Industry and Crafts, Metallurgy, Architecture etc.

How can Indigenous Knowledge System contribute to a region's sustainable development?

Indigenous knowledge significantly contributes to a region's sustainable development. Through native subsistence methods and sustainable agriculture through traditional water management, paste management, and the use of organic manure, the indigenous wisdom of the local population helps ensure food security. Indigenous populations have endured centuries of persecution and invasion, and frequently, western institutions have forced their knowledge upon them, displacing their own. However, indigenous populations have survived for ages by developing sustainable livelihood systems and adjusting to harsh climatic conditions in a variety of ways.

SENTINEL (P-5), 29 DECEMBER 2024

Industry-led Skill Education and Viksit Bharat @2047

Dr. Debajyoti Goswami

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The **Viksit Bharat @2047** initiative envi sions India as a devel oped nation by the centenary of its independence in 2047. This transformative roadmap emphasizes inclusive development, sustainable progress, and effective governance. Viksit Bharat seeks to catalyse widespread action on across five priority areas viz. education; employment & entrepreneurships; youth leaderships & development; heath, fitness & sports; and social justice. Each priority area is underpinned by principle of social inclusion of the people of India.

Education is the most critical enabler for youth to acquire knowledge as well as the capabilities necessary to make the most of all opportunities throughout life. Education also enables youth to contribute positively and participate fully in society. Beyond academic knowledge, young people need quality education that also imparts critical career and life skills and enables the holistic development of these individuals, socialised to societal norms.The National Education Policy 2020 (NEP) prescribes additional recommendations to strengthen the quality and relevance of education and provide for an equitable education system. The NEPprioritises ensuring universal access to education till class 12 prescribing reformin curriculum and pedagogy, infusing education with technology and reimagining vocational education. It also makes provisions for the reintegration of dropouts and out of-school children (15 to 18 years) and introducing schemes for adult literacy and lifelong learning.It is opined that future jobs in the 21st century will require new skill sets and the youth of the country will have to reskill and upskill regularly. The relevant Central Ministries/Departments and State Government agencies need to review and upgrade education and skilling curriculum and methodologies for teaching and learning periodically to prepare youth for future jobs. The development of 21st-century skills is essential for young people to navigate the world. These skills include inter-personal communication, collaboration, critical thinking, design thinking, problem-solving, dealing with change and more.

ICT, science, technology, engineering and math (STEM), and advanced technical skills, including deep digital literacy, data and analytics and financial literacy, that have become mainstays of the current time. These skills will be integrated as a core part of the curriculum for secondary and higher education. Therefore, the relevant ministries should come forward to encourage to students of educational institutions to review the scope and depth of the topics currently covered in syllabus to make room for these essential skills voluntarily and the institutions should be aggrieved to ask all the help from such relevant ministries.Aligned with the NEP (National Education Policy) 2020 , the NYP (National Youth Policy) 2021 envisages an education system that ensures holistic learning and development of all segments of youth by making education relevant for those in secondary and higher education, supporting the segment of youths "not in education, employment or training" (NEET), and by building an inclusive education system that leverages technology for enhanced 'teaching-learning' experiences for youths from disadvantaged and marginalised communities.

The Fourth Industrial Revolution, Industry 4.0, or 4IR is often called as the next phase in manufacturing. It is characterized by smart technologies and automation, which allow manufacturers to produce goods more efficiently, quickly, cheaply and/or sustainably. In this phase, the "cyber-physical" space is growing – computers and systems is increasingly stay connected and helping in making decisions without human involvement.Disruptive technologies (innovations that significantly change how consumers, industries or business operate)are radically change jobs and lead to upskilling and reskilling needs in the workforce. The industry's role in skill creation is important for India's Viksit Bharat @2047 vision, which aims to make India a developed nation by 2047.Enhancing digital literacy, improving teacher quality, and fostering industry-academia linkages can be the objective of the educational institutions. Technological innovations, including artificial intelligence (AI), virtual reality (VR), and blockchain, are explored as transformative tools for modernizing education and skill development.

The buzz in Indian engineering industry is semiconductors. Ambitious government initiatives and private investments have wrought promise of lakhs, if not millions, of jobs. With an objective of strategic policy interventions and public-private partnerships to bridge existing gaps and align India's education system with global demands, the Assam government is planning to set up 70 new ITIs in the"unserved" constituencies of Assam.With a vision to forge strong collaborations between the government and industry, the Skill Employment and Entrepreneurship Department hosted the Industry Meet, 2024. The event witnessed the participation of representatives from more than 150 leading industries. A series of discussions culminated in the signing of Memorandums of understanding (MoUs) with organisations, including Scientech, Festo, Honda CSR, ABB, and Janatics. These partnerships aim to enhance technical training, foster employ- ment opportunities, and strengthen Assam's skill development ecosystem.In the event it was aimed to explore innovative solutions to bolster Assam's skill education sector and equip the State's youth for contemporary workforce demands.The event aimed to explore innovative solutions to bolster Assam's skill education sector and equip the State's youth for contemporary workforcedemands. Assam has occupied an economic strategic position as the gateway to ASEAN and Southeast Asia. With industry support, Assam can become the growth engine of the nation. With the advantage of youthful demographic characteristics, HEIs in the state and the other stake holder associated ,may pursue some exercise for prioritising skill development to address the unemployment issue. Government should put some effort for collaborations with leading organisations such as TATA Technologies etc or making transformation of existing ITIs into centres of excellence.

Conducting industrial meet plays a significant role in Assam's journey for becoming a hub of skill development and economic growthby setting a new land mark for government and industry partnerships in the country.Thus, industry-led skill education can help pull out a talented pipeline by training students in accordance with industry needs and such practices an do help to driven away of the feeble period of medium-term growth to make India a developed nation by "Viksit Bharat @2047", the 100th year of independence.

DECCAN HEARLD (P-6), 30 DECEMBER 2024

Why penalise children for failure of system?

The Central government's decision to scrap the no-detention policy in schools shows an inconsistency in approach to education, especially elementary and foundational education. According to the new policy, students in government schools will have to face an examination at the end of Class 5 and Class 8 and if they are found below the pass norms, they will be examined after two months. If they still do not pass muster, they will be held back for the year. This policy amounts to a dilution of the approach in the Right to Education scheme (2009), which had adopted Continuous and Comprehensive Evaluation (CCE) of students and a no-detention policy till Class 8. The CCE was meant to ensure monitoring of the performance of students, and eliminate the need for elimination.

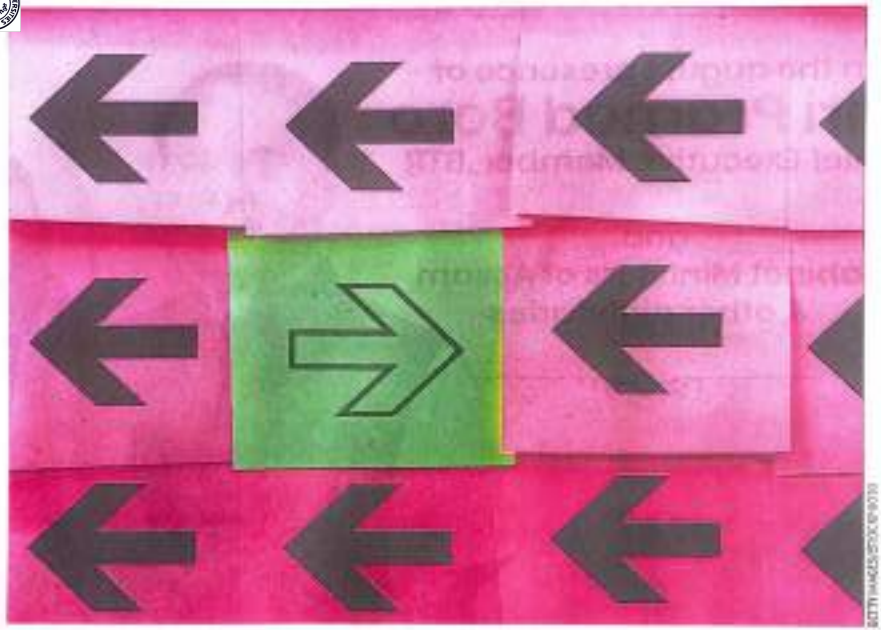
The rethinking about the no-detention policy started in 2019 when the Central government left it to the states to decide on the detention policy. While 18 states and union territories opted out of the no-detention policy, an equal number decided to continue with it. That showed the difference in approach among states and how views are evenly divided on the matter. Even after the Central government's decision to scrap the policy, the Tamil Nadu government has announced that it would continue with it, as the scrapping of the policy would hurt children from poor families. In Karnataka, school managements and organisations are sharply divided on the matter.

The govt is going back on its no-detention policy

The change in policy was necessitated by poor learning outcomes at elementary and secondary levels. Reports have pointed out that many children lacked the literacy and numeracy levels expected of their age and class. That would go against the aim of schooling, which is to equip the younger generation with knowledge and skills necessary for life. But the no-detention policy was based on the idea of universal education. Detentions were found to be a major reason for the high dropout rates in schools. At the time of the passing of the RTE legislation, the dropout rate was as high as 42.5% at the elementary level. It has now come down to 12.6%, which is still high.The humiliation caused by detention may push some students to drop out. There is truth in the argument that the failure of a student is not her personal failure alone. The lack of support from the family, school and society are also responsible, and in most cases a major contributing factor, for the non-performance of a student. The question posed by many is whether the child should be penalised for it.

30/12/24

Rahil Virkar
Priyanka Shendage



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Towards a green future

By equipping young people with green skills, India can chart a course toward a more sustainable and equitable future

India, known for its rich and diverse ecosystems, is facing severe environmental challenges due to rapid urbanisation and development. Pollution, deforestation, loss of biodiversity, and the looming impacts of climate change are taking a toll on the balance of fragile natural ecosystems. While this year has presented a multitude of climate challenges, each with far-reaching consequences, 2023 was the warmest year on record, and 2025 is projected to be even hotter. India has observed a significant mean temperature increase of 0.15°C per decade since 1950, according to a 2020 assessment by the Ministry of Earth Sciences. This has dire implications for ecosystems, agriculture, and human health.

Build resilience

The brunt of these environmental challenges is felt by the youth, who have to deal with not only the immediate effects but also the long-term consequences. Thus, for India's younger generation, building resilience against these crises is vital, as they will inherit and shape the planet's future. In this context, green skills have emerged as an essential tool in mitigating and adapting to the rapidly changing climate. These skills encompass technical knowledge, practical competencies, and mindsets required to implement sustainable practices, environmentally friendly technologies, and resource-efficient solutions across various sectors.

Green skills empower individuals to make sustainable choices, address pressing environmental concerns and are especially crucial for youngsters, who will drive the global shift towards sustainability. In India, approximately 20% of the workforce is already employed in green jobs, a number expected to double by 2030. This growing demand for green-skilled workers presents a unique opportunity to harness the country's demographic dividend. The range of green skills needed spans (but is not limited to) renewable energy, sustainable agriculture, water resource management, climate change adaptation, and waste management.

For example, skilling in solar panel installation, wind turbine maintenance, or hydroelectric power plant operations can significantly contribute to India's renewable energy transition. Expertise in sustainable farming practices, such as organic agriculture and water conservation, can strengthen food security while protecting the environment. Similarly, skills in urban planning, pollution control, and waste management are critical to create sustainable cities and reduce the ecological footprint of urban areas.

Green skills are not only about adopting new technologies but also include efficient management of existing infrastructure, services, and systems. India's continued growth relies on sustainable operations across sectors, from energy to agriculture, to ensure that economic expansion does not come at the cost of the environment.

Pivotal role

The role of the youth in the green transition is paramount. Youngsters are already at the forefront of the net zero transition with climate action and spearheading sustainability initiatives. But, to effectively lead this charge, they need access to training and upskilling opportunities. Whether through formal education, vocational training, or informal programmes, acquiring green skills is essential to tackle climate challenges and lead communities in climate adaptation efforts. Youth-led green businesses and start-ups are already emerging across India, introducing innovative solutions to environmental issues. By leveraging their creativity, digital expertise, and future-oriented thinking, youngsters are playing a pivotal role in reshaping the green economy. As leaders in green entrepreneurship, they are laying the groundwork for a sustainable future, driving economic and environmental progress.

The government has recognised the need to invest in green skills and the Green Skill Development Programme, for instance, aims to skill youth in fields related to the environment, renewable energy, forestry, wildlife conservation, and climate change. Such programmes are essential to ensure that India's future workforce is equipped to handle the demands of a green economy. There is also a growing shift in academic curricula, with an increasing emphasis on environmental education and sustainability.

However, there is still a need to align skilling courses and academic programmes with the specific needs of the green economy. This is a pivotal moment for India, as the youth have the potential not only to transform industries but also to drive a broader cultural shift towards sustainability in business, employment, and everyday life.

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PIONEER (P-7), 30 DECEMBER 2024

THE CHALLENGES OF A NOBLE PROFESSION

Despite their vital role, educators remain undervalued and overstressed, leading to burnout

SAKSHI **SETHI**

The teaching profession, often referred to as one of the noblest vocations, faces significant challenges in today's world. As society evolves, so do the expectations placed upon educators. Despite their pivotal role in shaping future generations, teachers grapple with numerous issues ranging from inadequate compensation to increased workloads and shifting societal dynamics. Addressing these challenges is crucial towards ensuring the sustainability and effectiveness of education systems worldwide.

Today, one of the most pressing issues for teachers is the sheer volume of work they manage. Beyond classroom teaching, educators are tasked with lesson planning, grading, administrative duties, and even participating in extracurricular activities. This workload which quite often extends beyond school hours, leaves little time for their family life or personal development. Even the pressure to meet standardized testing benchmarks and adaptiveness to diverse student needs adds to their stress levels, contributing to burnout and high attrition rates within the profession. Despite the critical importance of their role, many teachers feel undervalued and underpaid. In numerous countries, teacher salaries lag behind those of other professions requiring similar levels of education and expertise.

This financial disparity not only affects their quality of life but also discourages talented individuals from entering the profession. There is no denying that recognition for the hard work and dedication put up by a teacher is very limited which nowadays is diminishing their morale and job satisfaction. The integration of technology into education has transformed teaching methodologies, requiring teachers to continually update their skills. While digital tools have enhanced learning experiences, they also demand significant effort from educators to adapt and implement effectively. The shift to online and hybrid learning models during the COVID-19 pandemic underscored this challenge, highlighting gaps in training and access to resources. Not only adaptations towards new learning models but another complexity that a teacher faces is classroom management.

With the advent of Gen Alpha, the role of a teacher has become increasingly complex as they now have to deal with a wide range of student behaviours and needs. Issues such as bullying, mental health challenges, and lack of discipline have increased enormously, and the abolishment of corporal punishments requires educators to act as counsellors and mediators in addition to their teaching roles. At the same time, rising parental expectations and involvement have also created added pressure, with some parents demanding individualized attention for their children. Despite so many challenges, there are multiple opportunities to improve the teaching profession and support educators. Increased investment in education systems, including better salaries and benefits, can help attract and retain talented teachers. It is extremely important to know that teaching is the only profession that creates other professions.

Promoting a culture of respect and appreciation for teachers, by recognizing their contributions through awards, public acknowledgement, and meaningful feedback can boost morale and reaffirm their value to society. The challenges faced by teachers today are multifaceted and require comprehensive solutions. By addressing issues such as workload, compensation, and training, society can ensure that educators are equipped and motivated to excel in their roles. Supporting teachers is not just an investment in their well-being but in the future of the students they inspire and educate. It is imperative to honour their dedication and create conditions that allow them to thrive, for the benefit of all.

(The writer is an educator; views are personal)

PIONEER P-6, 31 DECEMBER 2024

The teachers who shaped my life: Lessons beyond the classroom

SANJAY **CHANDRA**

For me, the journey of learning began in classrooms with inspiring teachers and extended into workplaces with exceptional bosses

We meet several people in our lives. While we learn something from each person, many teach us invaluable lessons that help us navigate the rough and tumble of the daily grind. These are the teachers who shape our lives. The earliest I remember are two school-teachers from my classes 5 to 7. Miss Kumar taught us English; Miss Singh was the Arithmetic teacher.

It is no wonder that I developed a liking for the unlikeliest combination of English and Maths. Another was my mathematics teacher from classes 10 to 11.

I was a favourite student, probably because I could discuss with him complex problems on the move while cycling to and from school. My love for communication and thinking on my feet were firmly entrenched in my psyche by him. In later years, I could not have navigated my professional journey but for the few outstanding bosses, I worked with.

I joined my first job in a leading government manufacturing company. I stayed there for a year, only for the

training. It seemed like an extension of college except that we were now paid a salary and were expected to lead a structured office life. I opted to spend the last few months of the training in the computer department. I surprised myself. This was one of the two subjects in college in which I had secured a poor 'D' grade.

I developed a computer-based inventory management system for the plant, the first in the organization. I worked diligently, probably also committing a few mistakes, confident of the support of my Bengali boss.I joined the railway services. It was an entirely different ball game. I was the head of a maintenance shed with 1000+ staff working under me. My boss went to the shed with me for the first week. The next week, he threw me, not in the swimming pool, but in the ocean. It was training by fire.

Yet, he was always there to guide and support me whenever I needed his help. The innumerable management lessons I learned in my first year were to hold me in good stead during my remaining professional journey of almost three decades.After 20 years of service with the railways, I decided to opt for retirement and join a government company. My boss was a soft-spoken Sikh gentleman.

He also shared a common trait with my first railway boss. It was a complete freedom to operate.

He taught me everything that he knew about a new subject. His only demands were integrity and honesty. I had no problems with that. He would fight fiercely for me with his seniors if the situation demanded. I never regretted my decision to leave the railways.I quit the government to join the private sector. It was a new jungle for me.

The boardroom politics, criticism of a subordinate by those sitting at the head of the table in stage-managed whispers loud enough to be heard by the intended victim, and smirks by colleagues at the snub by a senior, were only a few of the goings-on I had not witnessed in the government sector.

I had no hesitation in mentioning to a packed audience when asked about the reasons for the success of the government sector, 'Good bosses, who value others and mentor each individual like a teacher."I hope that someone else remembers me as fondly.

These words by an unknown author resonate with me, "I wasn't born to just teach, I was born to inspire others, to change people, and to never give up; even when faced with challenges that seem impossible."

(The author is an electrical engineer with the Indian Railways and conducts classes in creative writing; views are personal)