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Cultivating Creativity and Enterprise

The National Education Policy (NEP) 2020 has laid immense emphasis on promoting critical thinking, creativity, and problem-solving abilities among students. It clearly recognises that to prepare our young generation for the future, education must move beyond rote learning and conventional teaching methods.

With *Bharat* aiming to become an innovation-based knowledge economy and to realise the vision of the Prime Minister's *Viksit Bharat* @2047, it is essential to redefine '*Shiksha*' not merely as a means of education but as a foundation for innovation and nation building.

The world is evolving swiftly with AI, robotics, and machine learning. To prepare our students for the evolving future, it becomes essential that we align our education system with emerging industry demands. The nature of institutions/universities in 2047 is expected to be progressive and dynamic, emphasising the need for innovation. We must equip our students not just with knowledge but with the skills and mindset needed to thrive in the coming age of Industry 5.0—the next evolutionary leap beyond Industry 4.0.

Preparing our youth for Industry 5.0 requires reimagining the educational approach—one that gives importance to interdisciplinary learning, emotional intelligence, creativity, and a human-centric approach. It is crucial to integrate innovation ecosystems into educational institutions. This is essential to empower students with real-world problem-solving skills and build a spirit of curiosity and innovation.

Building Innovation Ecosystems

Aligned with the vision, the All India Council for Technical Education (AICTE) is actively encouraging innovation and entrepreneurship at the grassroots level through its initiatives, including Smart India Hackathon, KAPILA—Kalam Program for IP Literacy and Awareness, Institution's Innovation Councils (IICs), School Innovation Ambassador Training Program (SIATP), School Innovation Councils (SICs), AICTE Productisation Fellowship, and the AICTE Industrial Fellowship Program. These initiatives are designed to encourage students to think out of the box, leave

Educators and professionals coming together at one of the Faculty Development Programme organised by the Ministry of Education & AICTE.

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behind conventional thinking, and become creators of tech-driven, innovative solutions.

I am delighted to share that India's innovation landscape has witnessed a remarkable transformation in recent years. The KAPILA (Kalam Program for IP Literacy and Awareness) initiative has played a crucial role in demystifying the patent process and empowering student innovators across universities and colleges to protect their intellectual property. This single step of creating awareness around Intellectual Property Rights has enabled our students, researchers, and faculty members to safeguard their original ideas and innovations. As a result, patent filings have increased by 247%, a figure that reflects not just numbers but the rising confidence of our academic community in pursuing innovation with a sense of ownership and protection.

In addition, the National Innovation and Start-up Policy (NISP) has been adopted by more than 3,000 institutions, creating a structured pathway for universities and colleges to nurture entrepreneurial talent. Complementing this, the Smart India Hackathon (SIH) has become the world's largest open innovation model, engaging more than 15 lakh students in solving real-world challenges provided by government departments, industries, and society. Each of these efforts signifies how we are not only encouraging students to think differently but also equipping them to transform those ideas into meaningful solutions.

I am pleased to share that today we have established a nationwide network of over 16,300-plus Institutions' Innovation Councils (IICs) in higher education institutions across states and union territories. These councils are actively promoting innovation through workshops, mentorship programmes, prototype development initiatives, and entrepreneurship activities. They are creating vibrant micro-ecosystems within campuses where students are encouraged to ideate, experiment, and innovate. In essence, IICs are ensuring that innovation is no longer an isolated activity—it has become an integral part of academic culture, seamlessly woven into the teaching-learning process.

To further strengthen this ecosystem, the AICTE Innovation Centres have been launched with the vision of catalysing innovation and entrepreneurial potential within academic institutions. These centres are designed to become hubs of creativity where students, researchers, and faculty can collaborate on cutting-edge technologies, develop prototypes, and explore the commercialisation of intellectual property for the benefit of society.

Empowering Mentors and Students

Our tremendous success in higher educational institutions prompted us to initiate similar steps even in schools. Our 'National Policy for Promoting Innovations in Schools' is a big step in this direction. This policy focuses on inculcating innovation, entrepreneurial abilities, and problem-solving skills among school students. The policy guides schools on creating an enabling environment to promote creative ideation and innovation in classrooms, wherein students are encouraged to work on real-world problems. With over 1.5 million schools and 250 million students in our schooling system, we expect to reach out to each and every student in the country.

With this aim, the School Innovation Ambassador Training Program (SIATP) was jointly launched by the Department of School Education & Literacy (DoSEL), the Ministry of Education's Innovation Cell (MIC), and CBSE. Through this 72-hour intensive training programme, teachers are trained across five crucial domains:

1. Design Thinking and Innovation

2. Idea Generation and Handholding

3. Entrepreneurship and Prototype/Product Development

4. Intellectual Property Rights

5. Finance, Sales, and Human Resource Management

Enthusiastic participation by students and teachers at an IDE bootcamp.

I am happy to share that more than 26,800 teachers from 14,120 schools have already been trained under this programme. These teachers are now emerging as the first mentors for students, guiding them in innovation, design thinking, entrepreneurship, intellectual property, and product development. Their role goes beyond the classroom—they are fostering curiosity, instilling confidence, and motivating students to convert ideas into tangible solutions. In many schools, we are already witnessing how these Innovation Ambassadors have ignited a culture of problem-solving, leading to small but meaningful innovations that have the potential to address local and national challenges. By becoming role models, these teachers are creating a sustainable cycle of innovation that will continue to grow with every new batch of learners. Similarly, in Higher Education Institutions, over 30,000 faculty members have completed the Innovation Ambassador Training Program, and more than 70,000 faculty members are currently pursuing the Innovation Ambassador Training Program.

The School Innovation Council (SIC) was launched to foster innovation, creativity, design thinking, and entrepreneurship in schools. Aligned with the National Innovation and Education Policy 2020, SIC promotes out-of-the-box thinking through activities for school students and teachers on an annual calendar.

The School Innovation contest aims to motivate, skill, train, handhold, and nurture the bright ideas and innovations from school students and fund the selected innovations to build technology and start-ups out of them. School Innovation Councils facilitate such contests by providing guidance, resources, mentorship, and patent filing, thereby encouraging participation, nurturing innovative ideas, and fostering a culture of innovation within the school community. School Innovation Councils are envisioned to be connected with the higher education system to provide a platform for schools, academia, industry, HEIs, experts, innovators, entrepreneurs, etc., to work together in unison to make disruptive progress in the country's I&E ecosystem. So far, SICs have been established in 20,000-plus schools, including PM SHRI Schools and State Affiliated Schools, across the country.

Practical Learning and Online Access

It is also a matter of great pride that India is the first country in the world to introduce a structured Design Thinking and Innovation (DTI) module at the school level. This forward-looking step ensures that students are not restricted to bookish knowledge but are empowered with practical tools and creative methods to analyse problems, generate ideas, and implement solutions. The DTI module emphasises 'learning by doing', which helps students build resilience, teamwork, and leadership qualities. Already, more than 2,400 schools and 1,30,000 students have enrolled in this module, marking a

significant step towards embedding innovation into the fabric of school education.

To further democratise access to innovation-related knowledge, specialised SWAYAM online courses have also been introduced. The SWAYAM course on Design Thinking and Innovation (DTI) provides structured, self-paced learning to both teachers and students, enabling them to master the fundamentals of design thinking regardless of their geographical location. Similarly, the SWAYAM course on Intellectual Property Rights (IPR) empowers participants with critical insights on patents, copyrights, and trademarks, thus strengthening their ability to protect and commercialise their innovations. These online resources ensure that the benefits of innovation education are not confined to physical classrooms but are accessible to learners across the nation, bridging gaps of scale and reach.

Innovation Design and Entrepreneurship (IDE)

This is another significant initiative worth highlighting. The IDE Bootcamp, launched by AICTE and MIC for Higher Education and by DoSEL in collaboration with MIC for schools, was carefully designed to provide hands-on exposure to both teachers and students in the field of innovation and entrepreneurship. Already, it has benefitted 9,692 participants across 48 locations in 21 States/UTs for schools and over 10,000 participants across 46 locations in 23 States/UTs for higher education, creating a ripple effect that is transforming classrooms into hubs of creativity. Eminent experts from industry, incubation centres, and startups have come forward as mentors, sharing their practical insights and guiding participants in adopting human-centric approaches to problem-solving. The bootcamp equips them with the ability to master design thinking tools, build customer-centric solutions, and understand the entrepreneurial journey from idea to market.

What makes this bootcamp even more impactful is its focus on connecting students and teachers to the larger Indian entrepreneurial ecosystem. Participants gain exposure to patent filing processes, incubation opportunities, and startup networks, which provide them with a clear pathway to take their innovations forward. Furthermore, the bootcamp is enriched through exposure visits to industries, incubation centres, and Centres of Excellence. When students and teachers witness cutting-edge technologies, innovative business models, and advanced research in action, it leaves a lasting impression on their minds. These experiences bridge the gap between classroom learning and real-world application, showing participants how innovation translates into impactful products and services.

Most importantly, the inspiration drawn from these visits encourages participants to dream bigger, take ownership of their ideas, and work with renewed determination. It transforms innovation from being an abstract concept into a tangible reality that the students and teachers alike can see, touch, and aspire to replicate in their own contexts. Over time, such initiatives are laying the foundation of a sustainable innovation pipeline—from classrooms to society—ensuring that every young learner has the tools, mentorship, and ecosystem support to become an innovator and entrepreneur of tomorrow.

New Education Era

Through these collective efforts, we are gradually building a robust innovation and entrepreneurship ecosystem across both school and higher education levels. This is nurturing a generation of students and teachers who will emerge as future innovators, problem-solvers, and entrepreneurs. They will not only create solutions for India's challenges but also contribute to the global innovation landscape, positioning India as a leader in science, technology, and entrepreneurship.

As we march towards the vision of *Atmanirbhar Bharat* and *Viksit Bharat @2047*, it is important to recognise that innovation is not the responsibility of a few—it is the collective mission of every student, teacher, and stakeholder in the education ecosystem. I urge every student to take risks, experiment, and embrace failures as stepping stones to success. I encourage teachers to continue evolving as mentors and guides, providing the support and encouragement that young minds need to innovate. I also call upon industries, incubators, policymakers, and civil society to extend their partnership and support in this journey.

Together, let us take forward the spirit of 'Shiksha for Innovation'—an education that not only imparts knowledge but also inspires creativity, fosters innovation, and drives entrepreneurship. With determination, collaboration, and vision, we can build a *New Bharat* that is self-reliant, innovative, and globally leading.

The seeds of innovation we are planting today will bloom into solutions, startups, and enterprises that will shape the destiny of our nation. Let us all work hand in hand to ensure that by 2047, when India celebrates 100 years of independence, we stand tall as a nation that has not only achieved self-reliance but has also become a global hub of innovation, knowledge, and progress. ❑