Shalender Sharma

Skills-Based Education

F ive years since the rollout of the National Education Policy (NEP) 2020, vocational education in India has undergone a strategic shift and continues to do so. NEP 2020 brings vocational learning into the heart of school education by integrating it into the mainstream curriculum, ensuring that every student has the opportunity to develop practical skills and explore diverse career pathways. It advocates for early integration of vocational education from Grade 6 onwards, aiming to make it a foundational part of every child's learning journey. Specifically, students in Grades 6 to 8 engage in short-term, hands-on experiences such as a 10-day 'bagless' internship with local artisans – potters, carpenters, artists, and others – designed to build curiosity and exposure. This differs from the vocational education model in Grades 9 to 12, which focuses on more structured skill acquisition, often in collaboration with ITIs, polytechnics, and industry partners, and may lead to certification or pathways into technical/higher education or employment.

The policy's intent is practical and multi-layered: to bridge the gap between education and employability, to reduce the academic-vocational hierarchy, and to equip students with market-relevant, community-aligned, and adaptable skills. Key interventions include the development of a new National Curriculum Framework integrating vocational components, the creation of skill labs through a hub-and-spoke model, and the use of digital platforms like SWAYAM for virtual vocational learning. The policy aims to ensure that every child learns at least one vocation and is exposed to several others – blending traditional knowledge systems like Lok Vidya with emerging fields such as AI, robotics, and IoT. Taken together, NEP 2020 positions vocational education not just as a career track but as a core element of holistic, future-oriented learning.

NEP 2020's Vocational Trajectory

As we mark five years since the launch of NEP 2020, the vision for vocational education – rooted in early integration, inclusivity, and relevance – continues to guide reforms across the education system. This is an opportune moment to take stock of how this vision is unfolding on the ground.

The most visible marker of a shift is the expanding footprint of vocational education in secondary schools. The number of schools offering vocational subjects

The author is Senior Director for Education and Skills Development at IPE Global. Email: s.sharma@ipeglobal.com

under the National Skills Qualification Framework (NSQF) has grown from 12,292 in 2021–22 to 18,610 in 2023–24 – an increase of 51%. This expansion signals not just improved institutional coverage but also a growing readiness among state systems to embrace skill-based learning. Much like the global push for Education for All (EFA), India appears to be moving towards a vision of 'Skills for All'—one where vocational education becomes a foundational entitlement, not a peripheral offering. Increasing access to vocational learning is emerging as a key lever to democratise opportunity and make education more meaningful for every learner.

Considering the struggles of the skill-gap, the employability skills module has been made a mandatory part of the vocational courses. It consists of communication skills, self-management skills, information and communication technology skills, entrepreneurship skills, and green skills.

Across states, vocational education is steadily being implemented through diverse strategies tailored to local needs, infrastructure, and partnerships. For example, in Rajasthan, the Samagra Shiksha Abhiyan implemented vocational education to integrate practical skills with academic education at the secondary and senior secondary levels. Covering diverse sectors such as agriculture, healthcare, IT, automotive, beauty and wellness, and more, the scheme now operates in 1,867 schools across 33 districts – including 1,081 new schools approved in 2023-24. Students receive hands-on training through industry visits, guest lectures, and On-the-Job Training (OJT), supported by well-equipped vocational labs. In 2022-23, a total of 2,56,961 students were enrolled and trained across 15 trades, with steady participation continuing across grades 9-12 in 2023-24.

In Himachal Pradesh, through effective initiatives by Samagra Shiksha, vocational education has seen rapid expansion and innovation. In 2023–24, 416 new schools introduced vocational courses across 16 trades, increasing student enrolment to nearly 98,000. The state has also piloted early exposure to '10 Bagless Days' in over 2,500 schools, encouraging skill learning through joyful, activity-based methods. To maximise reach and resource efficiency, a hub-and-spoke model has been adopted, where 48 hub schools share infrastructure, trainers, and labs with surrounding spoke schools.
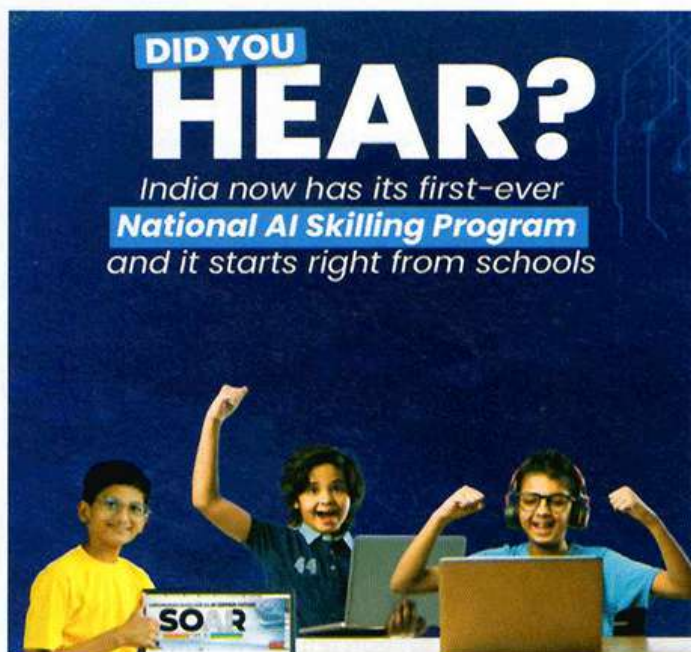
Digital innovation is accelerating these efforts further. Platforms powered by AI-driven tools offer personalised career guidance across 1,500 pathways. Simultaneously, digital education ecosystems like DIKSHA and SWAYAM have seen exponential growth – online enrollment on SWAYAM jumped from 25,905 in 2020–21 to over 1 lakh in 2024–25, enabling more students to access vocational content remotely.

Ground Report

At a PM SHRI girls school in Bagru, Rajasthan, vocational education is seamlessly integrated into the school routine from Grades 9 to 12. These girls are enrolled in an IT/ITES course where they are taught all about operating computers, digital skills, cyber safety, and also employability skills. Beyond these, the girls were exposed to polytechnic colleges, ITIs, and e-mitras (government-run digital service centres that offer access to public services and job-related resources).

Backed by the proactive leadership of the principal– who has personally championed the programme– the school has developed well-resourced skill labs, equipped with computer systems, colourful posters and students' projects. The principal has also ensured regular training and refresher workshops for vocational trainers in Jaipur, strengthening the quality of instruction.

Bhavna, from the IT course, shared her plans to start a 'low-investment, high-profit' business, which, according to her, is a fast-food stall in a busy area, using her digital and employability skills. Ayushi was already using her training at home – paying bills, booking tickets, and supporting her father's business using her computer skills to digitise some of the tasks he currently does manually. Their vocational trainer put it rightly, "they were trained e-mitra service providers in their homes and neighbourhoods". Through hands-on training, career exposure, and counselling and guidance, these girls are gaining not only skills but also confidence and meaningful opportunities to chart their own futures."

DID YOU HEAR?
India now has its first-ever
National AI Skilling Program
and it starts right from schools

The momentum extends to higher education and workforce integration as well. With over 32 crore Academic Bank of Credits (ABC) IDs issued and 2,469 institutions onboarded by 2025, institutions are offering flexible, work-integrated programmes such as B.Voc degrees. Premier institutions like IIT Delhi and IIT BHU have begun embedding vocational learning through interdisciplinary, industry-linked modules. Supported by initiatives like PM SHRI and Samagra Shiksha, Industrial Training Institutes (ITIs) have witnessed a notable increase in enrollment, further strengthening the vocational education ecosystem.

The state of Maharashtra offers a striking example of industry collaboration. A state-appointed committee has recommended making internships mandatory for all industries receiving government incentives, integrating this requirement into the upcoming New Industrial Policy. While the state's higher and technical education (HTE) department had already issued internship resolutions for universities and affiliated colleges, it became clear that the objective cannot be achieved without active industry participation. NEP 2020 mandates internships for students across all courses to provide hands-on experience and enhance employability. This policy marks a transformative step towards bridging academia and industry.

Taken together, these developments point to more than just incremental progress. They represent a systemic reimagining of education where skills are not an afterthought but a core part of every learner's journey. The early wins suggest that when policy intent meets institutional commitment and innovation, vocational education can be a powerful lever – not just for employability, but for equity, empowerment, and aspiration.

Challenges

However, despite progress and a robust policy framework, there are certain gaps. The dropout rates at the secondary level remain high, hovering around 14.1 per cent in 2023–24. With students dropping out of school, they not only lose access to education but also meaningful and diverse vocational pathways. This may be due to family constraints, student disengagement, particularly among those who don't see traditional academics as aligned with their futures, or other reasons.

Updating the vocational education curriculum remains a pressing challenge. Several stakeholders have noted that existing vocational curricula do not reflect the pace of change in fast-evolving sectors like digital services, electronics, or green energy. Keeping vocational education aligned with industry-relevant skills is essential to its long-term credibility, but this requires continuous inputs from industry bodies – something still missing in many states.

At the heart of the issue, however, lie deep-rooted societal perceptions. The hard separation between academic and vocational streams has created a lasting social hierarchy – where academic education is seen as prestigious, and vocational learning as a fallback. This not only affects uptake but also influences gender participation. Boys continue to dominate vocational courses, while girls – even when enrolled – are often steered into traditionally 'safe' stereotypical fields such as beauty services or tailoring. These choices are driven by social expectations around domestic responsibilities rather than by student interest or market demand.

Way Forward

The early momentum in vocational education — rising enrolment, improved infrastructure in some states, and greater student interest — is promising. However, to move from scattered successes to systemic transformation, we must address the structural gaps that continue to limit the promise of the NEP's vocational vision.

Mainstream Vocational Education within Schools

Vocational education must be formally integrated into timetables. This requires mandates at the state level, supported by dedicated funding, school-level coordination, and accountability from education officers. Models like the hub-and-spoke approach — where

resource-equipped institutions serve nearby schools — can also expand access without overburdening infrastructure.

Shift Societal Perceptions

Vocational tracks are still seen as second-best — suitable only for students perceived as 'weak' in academics. We must challenge the academic-vocational divide. Public campaigns, employer engagement, and alumni showcases should celebrate vocational success. Teacher sensitisation, parent workshops, and aspiration mapping for students can help shift mindsets and elevate the status of skill-based learning.

Strengthen Infrastructure

Governments may incentivise resource pooling through cluster models and better use of existing institutions like ITIs. Aligning with the 6 per cent of GDP education expenditure goal is essential to bridge any deficits. Public-private partnerships can support lab setup, equipment provision, and skill centre development.

Skilled Vocational Educators

Availability and quality of trainers remain a bottleneck. It is essential to establish state-level vocational educator cadres with clear recruitment, certification, and growth pathways. Trainers must undergo continuous professional development, industry immersion, and be trained in modern pedagogy — not just technical content. Partnerships with Sector Skill Councils and industry bodies can support this.

Update Curricula

Curriculum must be dynamic and co-designed with industry representatives, academic experts, and vocational educators. A standing curriculum advisory board at the national and state levels can ensure relevance and periodic reviews while embedding core skills like problem-solving, digital fluency, and adaptability.

Facilitating Informed Career Decisions

Without structured guidance, students—especially girls—are often pushed into stereotypical courses or career paths. Every school must offer year-on-year counselling, interest-based aspiration mapping, and exposure to diverse career options. Career Pathway Modules, digital exploration tools, and parent engagement must become standard practice. Girls in particular should be supported to explore non-traditional, aspirational fields — from IT to automotive repair.

Design for Inclusion

Divyangjan may often remain excluded from mainstream vocational programmes, due to infrastructure gaps and lack of tailored curricula. Inclusive vocational education must go beyond enrolment to ensure CwSN can learn and transition into employment. This requires accessible labs, a flexible curriculum, trained special educators, and employer sensitisation to enable workplace integration.

School-to-Work Transition

Internships may be institutionalised through clear policies, funding, and partnerships. States can mandate short-term placements in collaboration with local industries, self-employed professionals, or government schemes like e-Mitra. School coordinators should be appointed to map students to relevant opportunities.

Leveraging Technology

Platforms like DIKSHA and SWAYAM must be localised and integrated into school learning. Investments in rural connectivity and digital infrastructure are critical. Data systems must track vocational participation disaggregated by gender, disability, location, and employment outcomes—using integrations between UDISE+ and household surveys.

The NEP 2020 marks a pivotal moment in India's educational history, with the government demonstrating a strong and positive commitment to mainstreaming vocational education. By dismantling the rigid divide between academic and vocational streams, the policy has elevated the status of skills-based learning. Key government initiatives, such as the introduction of a 10-day 'bagless period' for practical learning; aligning courses with the National Skills Qualifications Framework (NSQF); and promoting the 'Hub and Spoke model' for resource sharing, signal a clear intent to equip the youth with job-ready skills from an early age. Moreover, the emphasis on industry collaboration for internships and apprenticeships, coupled with dedicated digital platforms for teacher training and career guidance, underscores a strategic, holistic approach. This concerted effort by the government not only aims to bridge the persistent skill gap but also to foster a culture of dignity of labour, ultimately making vocational education a powerful engine for economic growth and social mobility across the nation. ❑

(The co-author, Devlina Bhattacharjee, is Analyst, Partnerships and Strategic Initiatives, at IPE Global. Email: dbhattacharjee@ipeglobal.com)