NSDC to implement AI, ML, Robotics skilling programmes in schools
Premium

NSDC partners with Get Set Learn to launch Skills for New Bharat initiative to equip students with AI, ML, and Robotics skills.

Skills for New Bharat is a step towards addressing the accelerating demand for future-ready skills in emerging technologies such as AI, ML, and Robotics. | iStock/Getty Images

The National Skill Development Corporation (NSDC) is set to implement skill development programmes focusing on AI, ML and Robotics in schools, from kindergarten to Class 12, as part of its Skills for New Bharat initiative — a collaborative effort between the NSDC and other partners. In schools, Skills for New Bharat seeks to bridge the gap between the academic and the practical, boost industry-relevant skills, and equip students with competencies needed for a wide range of career opportunities. "By embedding future skills into the K-12 ecosystem, we are laying the foundation for a skilled and employable India," said Ved Mani Tiwari, CEO, NSDC.

While such skilling initiatives, for instance by the Central Board of Secondary Education (CBSE), and vocationalisation programmes have been functioning in the school system, Skills for New Bharat is a step towards addressing the accelerating demand for future-ready skills in emerging technologies such as AI, ML, and Robotics. Mr. Tiwari said that the initiative would equip students with skills that are "adaptable, resilient, and make students ready for upcoming challenges".

Collaboration with private sector

The NSDC has partnered with a future-skills-focused start-up, Get Set Learn (GSL), backed by the Arvind Mafatlal Group to implement its skill development programmes. The partnership aims to

drive a mindset shift in schools, inculcating an entrepreneurial mindset in 1 million students over five years, so that they can thrive in a rapidly evolving world shaped by AI, automation, and digital transformation.

The initiative has been launched at a time of uncertainty and concerns over the future of India's budding youth. "Irrespective of the education or job one pursues, there are certain skills that one needs to learn to meet the demands of the workforce," says Ameet Zaverii, CEO and co-founder, Get Set Learn.

The NSDC in collaboration with Get Set Learn would offer skilling programmes in STEM and Robotics, AI, Entrepreneurship, and Life Skills for learners in schools. Infrastructure, curriculum and content, and a robust trainee ecosystem would also be created for these skilling programs. Currently, the initiative is planned in 35 cities and would be extended later.

Many experts lauded the involvement of the private sector in such skilling initiatives. "With the speed and scale with which knowledge and skills are expanding and exploring, a conscientious collaboration is required between industry, trade, entrepreneurs and MSMEs to bring about this transformation," says G. Balasubramanian, former academic director, CBSE,

AI, Robotics, and so on can deliver better learning outcomes if they are integrated into education systems, say experts. "Skills should be introduced at every stage," says Jayaprakash Gandhi, a career consultant and analyst.

The skills taught should sync with the aptitude of the individual student, says Mr. Gandhi. "A student who is creative can be taught AI tools related to design, while a student interested in automation can be taught robotics," he said.

In the NSDC initiative, skilling could begin as early as Class 6, with robotics starting even earlier. Even if they don't deal with robotics directly, students would learn coding, says Mr. Zaverii. "The goal is to nurture foundational skills such as computational thinking, logical reasoning, etc., at a very early age so that it can be integrated across subjects, creating a strong base for specialized subject learning.," he said.

The curriculum for the skilling programs has been designed as a progressive journey, where students gradually build their knowledge and skills. Designed with the goal of creating desired outcomes in areas like AI, Robotics, and Entrepreneurship as its key assessment, it seeks to ensure that students develop necessary skills to succeed in these fields.

The Get Set Learn has an evolved pedagogy for skilling that is a mix of two approaches. For instance, in some skills such as coding, the outcome is defined -- right or wrong. But in, say, entrepreneurship, the outcome is not about being right or wrong — ideas may succeed or fail, but the process is valuable and students will learn from successes as well as failures. "Our goal is to encourage risk-taking, creative problem-solving, and innovation," said Mr. Zaverii.

To ensure success of these skilling initiatives across the schools in the country, infrastructure, world-class curriculum and content, and a trainee eco-system are essential. Infrastructure ensures that there are adequate facilities for practical training, workshops, laboratories and equipment. Likewise, it is important to ensure that the curriculum is up-to-date and aligns with industry standards and global trends thus bridging the gap between theoretical knowledge and practical skills.

The collaboration between the NSDC and Get Set Learn would bring out a Future Skills Report, an annual publication, identifying in-demand competencies. Future Skills Tinkering labs would be also set up across schools in India, forming an interconnected hub-and-spoke model which will provide students with the opportunity to experiment, explore, and build hands-on projects. Get Set Learn's industry challenges platform SOLVEIT would be integrated with NSDC Digital to build a community of seekers and creators, where students across India can collaborate on platforms to support each other.

Two models of training are being conceived as of now by Get Set Learn with NSDC. The first is where the trainers would be supplied to schools for training students for these courses; the second model is the "train the trainer model" (in this case, teachers and others) to teach the subjects and achieve optimal outcomes.

Differences between CBSE and NSDC programmes

Meanwhile, the Central Board of Secondary Education (CBSE) has also integrated skill education per National Education Policy and National Curriculum Framework guidelines. It offers 33 Skill Modules for middle school, each with a duration of 12-15 hours. Out of this, 70% of the time is allocated for hands-on activities and 30% for theory learning. For secondary and senior secondary levels, there are 22 Skill Subjects in Classes IX-X and 43 in Classes XI-XII.

Schools and students can choose one or more modules, available in both offline and online self-learning modes. The assessment is school-based, preferably project-based, following Board guidelines.

There are differences between the CBSE approach and the NSDC approaches. Majella Philip, founding principal of Babaji Vidyashram, said that skilling in CBSE schools may focus on broad, academic subjects while incorporating skill-based learning in subjects. However, she feels that they may not be specialised or industry-focused like the courses offered by the NSDC or private initiatives. "The programs offered by NSDC in collaboration with its partners focus more on emerging sectors like AI, Robotics, and specific career-specific skills which may not be covered extensively in the CBSE curriculum. Therefore, these skilling programs can provide a deeper dive into specialised fields that are aligned with market demands," she said.

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