INSTITUTE OF ECONOMIC GROWTH
KEC POLICY BRIEF
Kautilya Economic Conclave 2025 4th EDITION

TECHNOLOGY AND SKILL DEVELOPMENT FOR YOUTH EMPLOYMENT*

Chair: Mohamed Iqbal Rawther

Speakers: B.N. Goldar, Amit Basole, Sean Dougherty

Interactive Session **4C**

Date: 04th October 2025 | Time: 16:15 – 17:45 hrs

India, with a population of over 1.4 billion, is undergoing one of the largest demographic transitions in the world. Nearly half of its people are below the age of 27, which creates the potential for a massive demographic dividend. This dividend, however, can only be harnessed if the economy is able to provide sufficient skilled labor.

The widespread penetration of technology - including digital tools, automation, and artificial intelligence (AI) - is reshaping employment patterns across sectors from agriculture to defense. On one hand, these technologies have the potential to enhance productivity and create

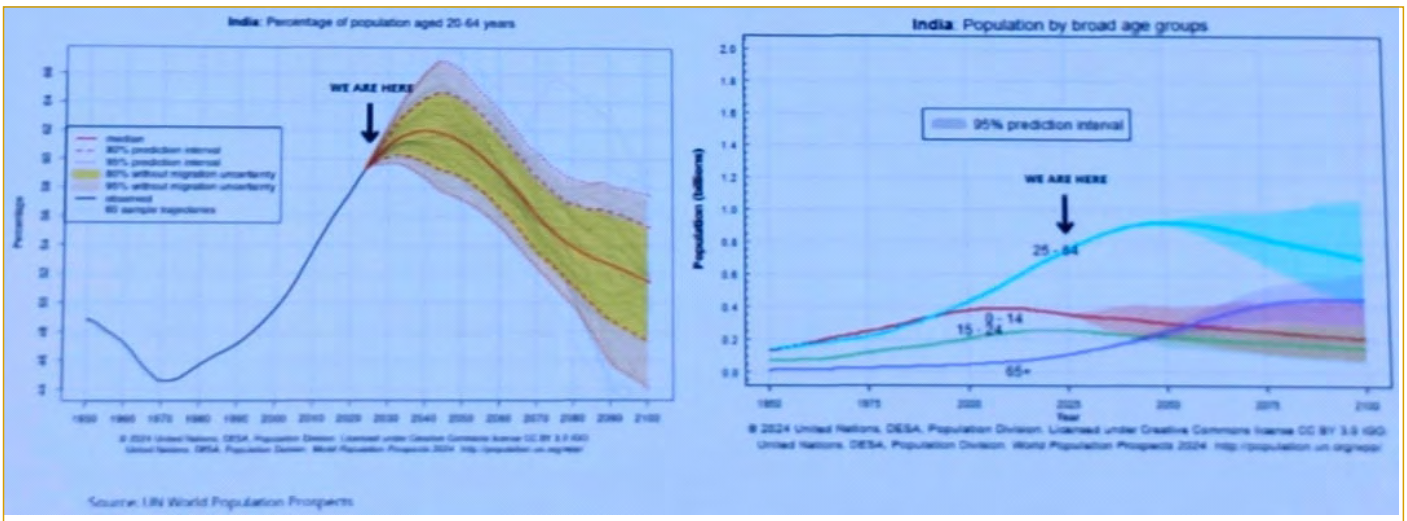

Figure: Demographic Dividend will end in a few decades

meaningful employment and adequate skills to its youth in the immediate future; otherwise, it risks becoming a demographic disaster. The paradox of India's labour market is evident: while there are high levels of educated unemployment, employers simultaneously face a shortage of new industries; on the other, they threaten traditional entry-level jobs, deepen inequality, and risk excluding large segments of young people if the education and skilling ecosystem does not evolve rapidly.

The issue is compounded by several critical

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factors. The unemployment rate among educated youth remains worryingly high, with 18.4% of those holding secondary education and nearly 29% of graduates unemployed. Technical degrees offer no guarantee of employment, as unemployment among technical graduates exceeds 40 percent in nine states. At the same time, only half of graduates are considered employable, and barely 8 percent find jobs that actually match their qualifications. Economic Survey 2024-25 highlights this skill mismatch.

India's labour market faces a growing paradox: even as educated youth struggle to find jobs, firms continue to report acute shortages of skilled workers. Nearly 80 percent of employers say they face difficulties in finding suitable talent, especially in fast-growing fields such as IT and data analytics, sales and marketing, and engineering.

A major reason for this mismatch lies in the quality and relevance of training. Only about 10 percent of organised manufacturing plants provide structured training programmes, with large firms far ahead of smaller ones. Flagship skilling initiatives such as Skill India have also struggled to bridge this gap. Their curricula often remain outdated, poorly aligned with industry needs, and unable to offer the kind of practical, shop-floor exposure that employers value.

The India Skills Report 2021–25 underscores this disconnect. It finds that internships have become essential for students seeking to gain hands-on experience, yet employers still show limited interest in hiring fresh graduates. Instead, most prefer candidates with one to five years of experience - reinforcing the cycle in which young jobseekers lack the very experience they need to get hired.

Another dimension of the problem lies in the dominance of the informal sector. Nearly two-thirds of industrial employment is informal, where wage premiums for technical skills are very low. Educated youth tend to avoid these jobs despite demand, resulting in a paradox where less formally qualified ITI and polytechnic graduates find employment more easily than engineering graduates who refuse to work in informal enterprises. Gender and social disparities further aggravate the situation. Educated women, particularly those holding technical degrees, face higher unemployment due to discrimination and structural barriers. Students from disadvantaged backgrounds such as SCs, STs, OBCs, and low-income groups often drop out of education due to financial constraints, which restricts their access to training and employment opportunities.

These inequalities intersect with the disruption caused by AI. While generative AI could raise productivity by up to 15% even for newer workers, it poses risks to entry-level roles in coding, content creation, and customer service - jobs that often represent the first step for young workers. However, AI can also serve as a powerful tool for learning and training, enabling personalized education, providing teacher support, and creating pathways for rapid upskilling if integrated thoughtfully into the skilling ecosystem.

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India's employment challenge lies at the intersection of education, training, employment creation, and technological transformation. Despite producing millions of graduates annually, the economy struggles to absorb them productively. The India Employment Report (2024) highlights the persistence of unemployment among degree holders alongside employer complaints of inadequate skills. The reasons for this paradox are structural. Curricula in technical and vocational education remain disconnected from industry requirements, training programs often lack practical content, and financial barriers prevent marginalized groups from pursuing advanced skills.

Deliberations on these issues reveal three broad approaches. The first focuses on addressing the skills and training gap. On-the-job learning remains the most significant source of skills, highlighting the importance of mechanisms such as recognition of prior learning (RPL) and certification to formalize and make skills portable across employers. The second approach emphasizes job creation as the real driver of skills. Evidence suggests that India's problem is less about the availability of training and more about the absence of sufficient jobs. Skills are neither necessary nor sufficient for jobs. Jobs are the key to skills not the other way round. India doesn't have a skills problem but a jobs and productivity problem. Most learning happens

on the job, but educated youth, especially in their early 20s, face delays in entering the labor market due to aspirational mismatches and employer reluctance to hire freshers.

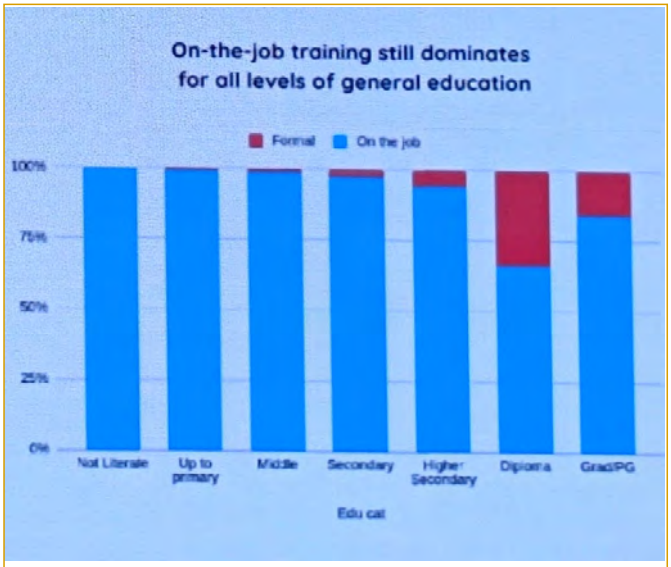

Figure: On the job training dominates for all levels of general education

Without job creation, skilling initiatives alone will not succeed. The third approach looks at technology and AI as a transformative factor. While AI threatens entry-level jobs, it also has the potential to be harnessed for new modes of training, personalized learning, and productivity enhancement. Policymakers must therefore redesign entry-level jobs, adopt task-based rather than occupation-based frameworks, and integrate AI into curricula, apprenticeships, and teacher training to prepare the youth for a rapidly changing labor market.

Several policy recommendations emerge from these insights. First, education–industry linkages must be strengthened by systematically involving employers in designing curricula, updating content regularly, and expanding apprenticeship programs with robust monitoring and placement mechanisms. Second, vocational training must be expanded

and modernized by equipping ITIs and polytechnics with digital infrastructure, introducing train-the-trainer schemes, and developing credit-based systems for online learning. Third, on-the-job learning should be formalized through certification and recognition programs, with incentives for firms to offer structured training and apprenticeships. Fourth, productivity in the informal sector must be enhanced by supporting technology adoption, providing wage subsidies and technology grants, and encouraging the clustering of small enterprises to share training and infrastructure. Fifth, gender and social barriers must be addressed by incorporating gender-sensitive designs into skilling programs, offering financial support for marginalized groups, and incentivizing firms to hire and train women in technical fields. Sixth, AI should be leveraged not only as a disruptor but also as a resource for education and training. AI modules should be integrated into technical curricula, deployed for personalized learning and feedback, and used to redesign entry-level jobs in a way that balances automation with hands-on experience. Public–private partnerships are crucial for ensuring safe and inclusive deployment of AI in education and employment. Finally, job creation must remain central to policy. Expanding formal sector employment, incentivizing SMEs to hire freshers, and linking fiscal transfers to states with youth employment and gender equity outcomes will help sustain momentum.

In conclusion, India's demographic dividend represents a historic opportunity but also a pressing risk. The coexistence of educated unemployment and unmet demand for skills highlights deep structural mismatches that must be addressed urgently. A balanced and forward-looking policy approach - anchored in education–industry collaboration, modernized training, recognition of informal learning, AI integration, and above all, job creation - will determine whether India's youth become the drivers of inclusive growth or a lost opportunity in the years ahead.

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