



NITI Aayog

REIMAGINING SKILLING

FOR VIKSIT BHARAT@2047



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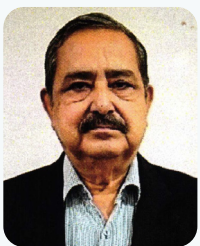
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Ashok Kumar Lahiri

Vice Chairman, NITI Aayog

India's ambition to become a developed nation by 2047 rests, above all else, on the capabilities of its people. With the largest youth population in the world and a workforce that will constitute nearly one-fifth of the global labour supply over the next two decades, the choices we make today about how we equip, credential, and empower our citizens will determine the trajectory of our economy and our standing as a knowledge-driven civilisation. Skilling, in this context, is not a sectoral programme, but a foundational national priority.

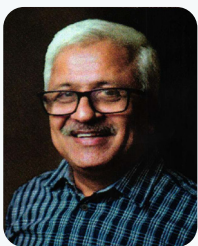
Globally, the nature of work is being reshaped at a pace without historical precedent. Artificial intelligence, automation, green transition, and the reorganisation of global supply chains are simultaneously creating new categories of employment and rendering others obsolete. If we skill our workforce for jobs of the future, India can become the world's talent hub, supplying human capital, both for our own growth as well as for ageing economies of the world.

This report, *Reimagining Skilling for Viksit Bharat@2047*, prepared by the Skill Development, Labour and Employment Division of NITI Aayog, offers a rigorous diagnosis of structural barriers and charts a coherent reform agenda centred on five core reforms and four key enablers. It calls not just for incremental tinkering, but for a fundamental reimagining of the skilling architecture, placing learners at the centre of a lifelong continuum from school to workforce.

Realising this vision demands the full force of cooperative federalism, genuine industry co-ownership of the skilling ecosystem, and the purposeful deployment of technology as an instrument of equity and inclusion. It also demands that we address, with deliberate intent, the structural barriers that continue to exclude women and marginalised communities from formal economic participation.

I commend the work undertaken by Skill Development & Employment Division, under the leadership of Dr. Sonia Pant, Programme Director and the team led by Dr. Sakshi Khurana, Senior Specialist.

Advancing India's skilling and workforce development agenda requires collective efforts of Central Ministries, State Governments, industry, academia, training providers, and other stakeholders. Through sustained and collaborative efforts, we can build a skilling and education system that is inclusive, futuristic and aligned with India's broader developmental goals. The path to Viksit Bharat runs through every learner who gains a skill and every worker who finds dignified employment. Let us build systems worthy of that aspiration.



Dr R. Balasubramaniam

Member, NITI Aayog

India stands at a defining moment in its development journey. As we move towards the vision of Viksit Bharat @2047, the country's demographic strength presents an unprecedented opportunity to accelerate economic growth, social mobility, and global competitiveness. Over the last decade, India has made significant strides in expanding access to skilling opportunities through large-scale investments, institutional reforms, and innovative programmes. Yet, the evolving nature of work, technological disruption, changing industry requirements, and persistent barriers to participation call for a fundamental reimagining of how skills are developed, recognised, and linked to livelihoods.

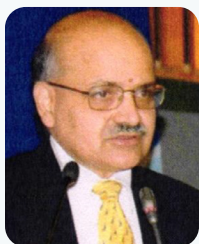
I commend the Skill Development, Labour & Employment Division of NITI Aayog for undertaking this important study under the leadership of Dr. Sonia Pant, Programme Director, and the team led by Dr. Sakshi Khurana, Senior Specialist. The report reflects a rigorous examination of India's skilling landscape and offers a thoughtful roadmap for strengthening learner pathways, improving employability outcomes, and enhancing the responsiveness of the skilling ecosystem to future economic and workforce needs.

A key contribution of this report is its emphasis on viewing skilling not as a standalone intervention, but as an integrated lifelong journey. The recommendations outlined herein seek to strengthen pathways between education, skilling, employment, and entrepreneurship through reforms that promote flexibility, industry engagement, apprenticeship opportunities, informed career guidance, and recognition of learning outcomes.

Importantly, the report recognises that the next phase of transformation will require coordinated action across governments, industry, academic institutions, civil society, and communities. States will play a particularly critical role in contextualising and implementing reforms in line with local economic priorities and workforce requirements.

I envision this report to serve as a valuable resource for policymakers, practitioners, industry leaders, researchers, and all stakeholders committed to strengthening India's human capital. The ideas presented here are intended to stimulate dialogue, inform action, and contribute to building a skilling ecosystem that empowers every learner and worker to realise their full potential.

As India advances towards Viksit Bharat @2047, investments in skills will remain among the most powerful investments in our future. By placing learners at the centre, fostering innovation, and strengthening pathways to meaningful livelihoods, we can create a workforce that is resilient, productive, and prepared for the opportunities of the decades ahead.



B. V. R. Subrahmanyam

Former CEO, NITI Aayog

As India advances towards the vision of Viksit Bharat @ 2047, the quality of skills across the workforce will be central to sustaining growth, productivity, and opportunity. Considerable progress has been made in expanding skilling initiatives across the country. Yet, evolving economic realities underscore the need for a more coordinated, integrated, and future-oriented approach.

Reimagining Skilling for Viksit Bharat @2047 sets out NITI Aayog's response to this moment. The report draws on a detailed assessment of five learner segments that shape how individuals learn, work, and move across education, skilling, and employment systems. Together, it provides a system-wide view of where the skilling ecosystem stands, and where stronger alignment and redesign are required.

The reimagined skilling architecture presented in this report is anchored in five strategic big bets designed to catalyse transformation at scale. These include early initiation into employability and trade related skills through integration in schools. As learners move into tertiary education, the architecture seeks to revitalise tertiary education through viable public private partnership and engagement models. Outcome-linked industry backed programmes are aligned with high-growth industry demand areas and clear outcome orientation. The expansion of apprenticeships as a mainstream work pathway is expected to support sustained learning and earning.

These shifts are supported by systemic enablers across technology, policy, and institutions. Digital Lifelong Learning Accounts (DLLAs) or Skill Passports are envisaged for each learner, anchored by interoperable skilling registries and data exchanges. The operationalisation of the National Credit Framework (NCrF), alongside skills-first hiring practices and outcome-based financing for learner support, is intended to strengthen coherence and outcomes across the skilling ecosystem. Even as these big bets and enablers are operationalised, positioning skilling as an aspirational and mainstream pathway for career readiness remains essential.

Together, these elements form the backbone of a new skilling architecture that places the learner at the centre of lifelong learning and supports each learner with continued learning, earning, and advancement opportunities, while reinforcing inclusion and access. For this vision to translate into action, States will be the anchors of transformation. Their leadership in aligning skilling strategies with local employment priorities, while ensuring scale and inclusion, will be central to implementation.

I extend sincere gratitude to Smt. Debashree Mukherjee, Secretary, Ministry of Skill Development and Entrepreneurship (MSDE) for her invaluable support to this study by facilitating access to data from MSDE's State of Skills Survey 2024 that substantially informed the analysis and strengthened the report. The preparation of this report has benefitted from close partnerships and constructive engagement with State Governments, particularly Skill and Technical Education Departments of Governments of Andhra Pradesh and Odisha whose contributions have been instrumental in informing the key enablers for a reimagined skilling architecture for the States.

Boston Consulting Group (BCG) provided valuable technical and analytical rigour, and partnership throughout the preparation of this report. I acknowledge the leadership of Ashish Garg, Garima Batra, Varad Pande, Sriramprasad Rangarajan, and their colleagues, Jyotishmaan Tripathi, Anusheela Ghosh, and Shruti Sadani, whose expertise, research support, and thoughtful inputs helped shape the report and strengthen its evidence base.

The development of this report was possible due to the dedicated efforts of Dr. Sonia Pant, Programme Director, whose commitment and sustained efforts were instrumental in bringing this work to fruition. Dr. Sakshi Khurana, Senior Specialist, oversaw the overall development of this report along with valuable contributions from Sh. Manish Kumar Vimal, Director and Consultants: Shailendra Yadav, Neha Singh, Ashutosh Nema; Young Professionals: Hitesh Sangwan, Radhika Talekar, Hannah Liza Varghese, and Arnavi Sagar.

The five big bets and key enablers outlined in the report assume particular significance in the context of the Integrated Scheme in Skilling Architecture (ISSA) proposed in the Union Budget 2026-27. Going ahead, Central Ministries, State Governments, industry, trainers, and other stakeholders across the skilling ecosystem can collectively ensure the on-ground implementation of this reimagined skilling architecture for Viksit Bharat@2047.



Dr Sonia Pant

Adviser & Programme Director,
NITI Aayog

This report synthesizes empirical data and the collective expertise of institutions and individuals dedicated to advancing education and skill development in India. I am grateful to Shri Ashok Kumar Lahiri, Hon'ble Vice Chairman, NITI Aayog, for his encouragement towards advancing the vision for a reimagined skilling ecosystem for Viksit Bharat@2047. I am also grateful to Dr. R. Balasubramaniam, Hon'ble Member, NITI Aayog, for his support and valuable guidance for this work. I am thankful to Smt. Nidhi Chhibber, Chief Executive Officer, NITI Aayog for her constant encouragement and leadership in taking this initiative forward.

I extend my heartfelt thanks to Shri B.V.R. Subrahmanyam, former Chief Executive Officer, NITI Aayog, whose vision laid the foundation for this initiative. His strategic guidance, frequent reviews, and brainstorming discussions were instrumental in conceptualising and directing this report from its inception to completion.

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Boston Consulting Group (BCG) has been the knowledge partner for this work. I acknowledge the leadership of Ashish Garg, Garima Batra, Varad Pande, and their colleagues, Sriramprasad Rangarajan, Jyotishmaan Tripathi, Anusheela Ghosh, and Shruti Sadani, whose expertise, research and writing, helped shape this work and strengthen its evidence base.

The efforts of the team at NITI Aayog's Skill Development & Employment Division have been instrumental in bringing this work to fruition. Dr. Sakshi Khurana, Senior Specialist managed the overall development of this report. Valuable contributions were also made by Sh. Manish Kumar Vimal, Director, Neha Singh, Consultant and former Consultants and Young Professionals: Shailendra Yadav, Ashutosh Nema; Hitesh Sangwan, Radhika Talekar, Arnavi Sagar, and Hannah Liza Varghese.

The report's five big bets and key enablers are highly significant in light of the Integrated Scheme in Skilling Architecture (ISSA). Proposed in the Union Budget 2026-27, the ISSA establishes a model framework for Central Ministries, State Governments, industry, and other stakeholders across the skilling ecosystem. At NITI Aayog, we look forward to working with all stakeholders to implement this initiative.





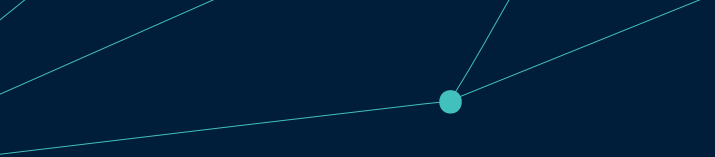


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Executive Summary

India's ambition of **Viksit Bharat 2047** depends on enabling citizens to learn, earn, and advance continuously. Skilling is central to this goal. Since 2014-15, over **7.67 crore individualsⁱ** have been trained. To sustain this momentum, the Union Budget for FY 2025-26 allocated ₹34,000 croreⁱⁱ in skilling-related expenditure across multiple Central Ministries. These efforts are complemented by several State-led initiatives (for e.g., Tamil Nadu's Naam Mudhalvan, Maharashtra's Mahaswayam, amongst others) along with capability building, strengthening skilling ecosystems, and investing in infrastructure. Civil society organisations and private sector players have further augmented the skilling ecosystem.

Yet, outcomes remain uneven. Beyond incremental efforts, the report suggests a transformative approach to drive needed

outcomes. To ensure the highest impact, it organises India's workforce landscape and learners into five segments spanning

- o Schooling,
- o Tertiary education,
- o Formal and informal work,
- o Not in education, employment and training (NEET) youth, and

o Women, together forming ~60 crore citizensⁱⁱⁱ and representing the complete range of transitions across education, work, and periods outside the labour market (refer Exhibit 1).

Using a mixed-methods approach combining national employment data, field-based qualitative insights, and global benchmarks, this report identifies structural barriers and key needs in the current system.



i. Government of India, Ministry of Skill Development and Entrepreneurship. (2025). *National policy for skill development and entrepreneurship*, accessed in Nov 2025.

ii. Government of India, 2025, *Demand for Grants of Central Government 2025-26*, accessed in Nov 2025. Budget estimates for skilling include allocations under the following Union Ministries: Ministry of Skill Development and Entrepreneurship; Ministry of Rural Development; Ministry of Labour and Employment; Ministry of Micro, Small and Medium Enterprises; Ministry of Electronics and Information Technology; Ministry of Education; Ministry of Social Justice and Empowerment; Ministry of Textiles; and Ministry of Minority Affairs. State government budget allocations have not been included.

iii. National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, 2022, *Periodic Labour Force Survey 2020-21*, India; Government of India, Ministry of Education, Department of Higher Education. (2021-2022). *All India survey on higher education 2021-22*; In addition to 4.3 Cr students in higher education programmes(AISHE 20-21) there are 44.8 Lakh students in ITIs as of 2026 (Skill India Digital Hub, Ministry of Skill Development and Entrepreneurship; 2026, *ITI Dashboard*)

EXHIBIT 1: SEGMENTED VIEW OF INDIA'S POPULATION

Estimated count of population by key segments (in Cr)

Total Population²
145Cr (2024)

Labour Force: 65.4 Cr (45.1%)¹

Outside Labour Force: 79.6 Cr (54.9%)¹

58.4% of the labour force categorised as self-employed³

21.7% of regular wage / salary

19.8% of casual labour

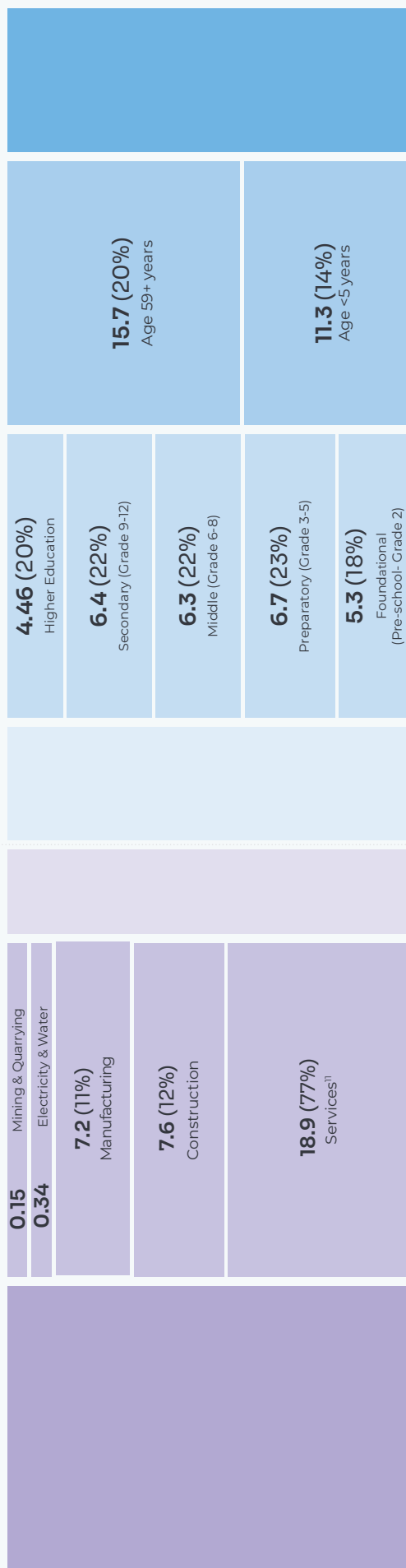
29.2³ (44.7%)³

34.2⁴ (52.2%)⁴

2 (3.1%)⁵ 8.7 (11%)⁶

29.1 (36.6%)⁸

27 (34%)⁸ 14.7 (1.8%)⁸



Note: Estimates may vary owing to different data sources (PLFS, UDISE, AISHE, NSS etc.) and reported years (2021-24)

1. 65.4 Cr (45.1%) individuals participating in labour force reported in PLFS 2023-24 (all ages), 79.6 Cr (54.9%) individuals outside labour force 2. UN World Population Prospects 2024, (UNDESA) 3. 29.2 Cr individuals (44.7%) of labour force in Agriculture as per NIC 2008, PLFS 2023-24 (all ages), 4. 34.2 Cr (52.2%) Non-agri working population PLFS 2023-24; 3.8 Cr 15-29 years of working age, PLFS 2023-24 5. 2 Cr (3.2%) of labour force, PLFS 2023-24 6. ~9 Cr (11%) NEET excluding seeking jobs, NSS 78th round 2021; ~88% engaged in domestic duties 7. 29 Cr (36.7%) individuals; UDISE 2023-24 (NEP format) AISHE 2021-22 8. 27 Cr (34%) individuals; World Population Prospects 2024, (UNDESA) 9. PLFS 2023-24 10. Economic Survey (2021-22) using National Commission for Enterprises in the Unorganized Sector (NCEUS) 2007 11. 15 Cr (18.3%) Includes non-workers above age of 29 that are dependents, people with disabilities/chronic illnesses, vagabonds, involved in household duties, and pensioners (categories as per table B13-SC non workers by main activity (MoSPI) 12. Comprising of Trade, Hotel & Restaurant (77.37), Transport, Storage & Communications (35.55), and Other Services (75.40) as defined in PLFS 2023-24; Strategy for New India @75, NITI Aayog, November 2018

Note: As a static snapshot, this analysis must be complemented by forward projections and periodic calibration to understand the implications for long-run aggregate supply.

To address the same, a set of **strategic core reforms and system enablers**, coupled with a **Reimagined Skilling Architecture** with a blueprint have been outlined to bring this transformation to life.

Key Barriers Blocking Skilling Momentum

Across all five segments, recurring barriers constrain skilling outcomes. Learners across segments **lack trusted guidance and clear information** on credible programmes, returns to skilling, government schemes, and apprenticeships. As a result, degrees are often pursued for prestige or government exam eligibility, while vocational and online pathways continue to face low trust and social stigma. **Access constraints** reinforce these gaps. Early exposure to National Skills Qualification Framework (NSQF)-aligned skills in schools remains limited, and industry-integrated programmes, internships, and apprenticeships in higher education are uneven. Workers, particularly from the informal segment, face rigid skilling formats, geographic constraints, gatekeeping, and high opportunity costs; while women encounter additional barriers related to caregiving responsibilities, safety, and mobility.

Funds further restrict participation. Across segments, the affordability challenge is not limited to fees alone. It reflects a combination of direct costs, foregone income, and constrained access to high-quality options that are frequently priced beyond reach. At the system level, **learning and delivery models** remain overly theoretical and weakly aligned with workplace needs, with

limited practical exposure, proof of work, and job-readiness support or entrepreneurship pathways. These challenges highlight the need for convergence across ministries and Centre-State arrangements, degree-based hiring norms that limit skills-first adoption, limited incentives for industry co-ownership, and uneven implementation of key reforms such as the National Credit Framework (NCrF).

From these barriers, common needs emerge across learners including trusted guidance, mainstreaming of skilling within education, flexible pathways that enable learning alongside earning, affordable outcome-linked programmes aligned to demand, and recognised, portable progression across education, skilling, and work through NCrF. These needs form the basis for reimagining India's skilling architecture through core reforms and system enablers (refer Exhibit 2).

Core Reforms and System Enablers, and a New Skilling Architecture

The reimagined skilling architecture outlined in this report responds to these needs through a set of strategic **core Reforms** that define high-impact interventions to transform how India learns and works. These are supported by a set of **key System Enablers** that reflect the policy, institutional and technological shifts required from both the Centre and the State (refer Exhibit 3). Each is grounded in clear, actionable concepts designed for on-the-ground implementation and adaptation across diverse State contexts.

iv. Ministry of Skill Development and Entrepreneurship. (2025). *Integration of Skills with Formal Education*. Press Information Bureau. India, accessed in Nov 2025.

EXHIBIT 2: NEED GAPS

	 Information & Value Perception	 Access	 Funds	 Learning & Delivery Models	 Structure & Governance
	Lack information, misjudge skill value	Keen to skill, unable to reach	High on motivation, low on means	Open to work, without workplace skills	Lack of alignment with learner needs
School		Access to foundational employability skills and vocational pathways in school		High quality labs and teachers for vocational and general employability subjects	
Technical and Higher Ed	Access to trusted information and guidance for students and parents	Access to industry-aligned, practice-based degrees with multi-entry, multi-exit pathways	Access to financing and loan mechanisms for high-quality courses	- Industry-aligned curriculum - Access to internships/apprenticeships - Structured job-readiness support	- Convergence of schemes and funds - Skills-first hiring policies - Employer incentives and mandates for industry-led training and certification
Workforce	Awareness of advanced skilling options and relevant government schemes	Access to flexible, hybrid, modular delivery formats	Wage support/incentives to offset skilling opportunity costs	Outcome based courses, mid-career reskilling and self-employment pathways aligned to local demand	Strong infrastructure footprint for scheme roll out like RPL
NEET	Trusted mentorship and job discovery channels	Access to proximate, flexible work opportunities with safety/transport facilities	Affordable, subsidised training and financing options	Structured pathways for re-entry and self-employment	
Women	Women-focused career guidance and peer networks		Dedicated financing support for women		



EXHIBIT 3: CORE REFORMS AND ENABLERS WITH SUPPORTING CONCEPTS TO IMPLEMENT THEM

Skill integration in Schools	GEES for All General Employability and Entrepreneurship Skills	Kaushal Tracks Vocational track in school
Viable PPP/PSE models in technical and higher education	Skilling Hub PPP-led campuses for outcomes	Work-Integrated Degree Programmes Flexible, modular, industry linked degrees
Outcome-linked, industry-backed programmes	Apprenticeship Embedded Degree Programmes	
Apprenticeship for all	Flagship Standalone Skilling Programmes Nano/micro/short-term credentials for upskilling in priority	
Guidance and perception building	State Apprenticeship Platform Unified portal for all apprenticeship/internship schemes with unified budgets	
	Pathway Clinics in school and higher education Counselling for parents & students	Skill Sure What to skill ? Curated skill/course discovery platform
	Hunar Utsav Below the Line(BTL) campaign for skilling pride	Skill Scout Where to skill ? Credible skill centre discovery platform
	Skill Saathi Kendras Decentralised Offline Counselling	My Guide AI-led lifelong career companion for workforce
	Community Women Circles Mentorship networks for early guidance	Women Centric App Safe, private access to info and microlearning
Digital Skills Passport	Sakhi Booths Trusted, local spaces for awareness	
	Skills Passport with Digitally Verified Credentials Stackable, verifiable credentials for work and skills	MyCV QR-based CVs for ease of showcasing work experience
	Skill DX Data exchange and tech layer to power lifelong learning solutions	National Career Outcome Repository Salaries, job roles, sectors, etc.
	Digital Job Discovery LocalWorks - Hyperlocal, flexible job discovery	Workfolio Digital portfolio & hiring network for blue-collar
	FlexEarn - Part-time opportunities for students	
Outcomes-based Financing	Skill Skore Skill and future readiness score	
NCrF adoption for pathway mobility	Skill Financing Scheme Digitising and operationalising frictionless access and placement linked repayment of loans	Targeted Skill Vouchers/scholarships For emerging, at-risk sectors and priority segments
Skills-first policies and infrastructure	NCrF Toolkit NCrF playbook for day-to-day adoption across institutions	
	Skill-First Hiring Mandate Skill-based JDs and selection	Upskilling Leave Unpaid learning leave with job security
	Surakshit Saathi PPP-led hostels & transport for women	
	Back to School Schools as safe space for women to (up/re)skill	

School and Higher Education
Workforce
Women

Physical-led Phygital Digital Led

Core Reforms

Core Reform 1

Skill Integration in Schools

Skilling must begin early and be embedded within the school system to shape employability, choice, and progression later in life. While National Education Policy (NEP) 2020 and the National Curriculum Framework (NCF) provide guidance on integrating vocational education and employability skills from Grade 6, implementation remains limited, with fewer than 1 in 12 secondary schools offering vocational subjects^{iv}. To address this gap, **General Employability and Entrepreneurship Skills (GEES)** for all can be introduced universally from Grade 6 through Grade 12, alongside **Kaushal Tracks (structured vocational pathways) from Grade 9** onwards that enable deeper vocational specialisation aligned to local and national skill demand. These can be enabled through multiple school archetypes based on capacity and resources; and supported by credit equivalence through NCeF.

Core Reform 2

Viable Public-Private Partnership (PPP)/Private Sector Engagement (PSE) Models in Technical and Higher Education

India's tertiary education system requires **structural reorientation to align learning with labour market demand**. With some curricula remaining outdated and generic degrees dominating enrolment, employability outcomes remain weak. Addressing these gaps requires **stronger industry participation through Public-Private Partnership (PPP) models and Apprenticeship Embedded Degree/Diploma Programmes (AEDP)** to modernise curricula, embed job-linked learning, and ensure relevance. Priority actions include shifting from generic degrees to applied, industry-aligned specialisations, scaling work-integrated and apprenticeship-embedded degree programmes, and expanding flexible, modular, and earn-while-you-learn formats. Operationalising NEP 2020, University Grants Commission (UGC) guidelines

on getting credits against apprenticeships, NCeF, and initiatives such as Pradhan Mantri Skilling and Employability Transformation through Upgraded ITIs (PM-SETU) is critical to enabling modular, stackable, multi-entry and multi-exit pathways and delivering sustained employability outcomes.

Core Reform 3

Outcome-Linked, Industry-Backed Programmes

Standalone skilling programmes must shift from enrolment-driven delivery to outcome-linked, industry-backed models. While short-term skilling schemes have expanded access, weak outcome orientation, limited employer integration, and inflexible formats continue to constrain pathways into in-demand jobs.

Going forward, the focus must move towards **demand-driven skilling aligned to high-growth sectors (e.g., green industries, Electric Vehicles (EVs)), General Employability and Entrepreneurship Skills, and reskilling for declining roles**. Stronger linkage to verified outcomes, delivery through existing public infrastructure, and use of outcome-linked financing models are critical to improving participation and employment outcomes.

Core Reform 4

Apprenticeship for All

Apprenticeships must be repositioned as a mainstream and trusted pathway to bridge learning and work. While schemes such as National Apprenticeship Promotion Scheme (NAPS) and National Apprenticeship Training Scheme (NATS), coupled with State-specific programmes have expanded access, participation remains uneven, awareness is limited, and opportunities are fragmented across multiple platforms. Making apprenticeships effective requires **expanding the number of opportunities** (e.g., via Micro, Small and Medium Enterprises (MSME) incentives), **providing integrated access through a unified State-led platform**, clearer visibility of credible opportunities, and **stronger alignment between training and learner/learning demand**. Further,

leveraging existing platforms (e.g., Skill India Digital Hub (SIDH)) can enable convergence and expedite action.

Core Reform 5

Guidance and Perception Building

Guidance and perception building must function as a continuous, trusted layer across the learning and working journey. Persistent gaps in awareness and access to informed guidance limit learners' ability to navigate education, skilling, and career transitions, particularly at key entry and re-entry points. To address this gap, **guidance delivery must move beyond isolated touchpoints to a multi-channel system.** Priority actions include institutionalising counselling in academic institutions, extending guidance through community-based hubs, strengthening digital guidance and engagement tools, and enabling safe, women-centric support systems. Complementary perception building initiatives are essential to build aspiration for skill pathways.

System Enablers

Each of these planned shifts needs deeper system backed enablers which could be a combination of long-term technology, policy or institutional changes.

System Enabler 1

Digital Skills Passport

Lifelong learning at scale requires a digital backbone that allows learning to be recognised and carried forward across education, skilling, and work. While platforms such as the Skill India Digital Hub (SIDH) and existing digital public goods including Automated Permanent Academic Account Registry (APAAR ID), National Career Service (NCS), etc., provide a strong foundation, their adoption remains fragmented. To enable continuity, a Skills Passport anchored on APAAR ID is needed to **bring together verified credentials, skills, and work experience.** This must be supported by State-level Skills Digital Registries and Exchanges (Skills DX) that consolidate learning, jobs, and scheme data. Together, this can support job

matching, informed choice, and alignment of training with labour-market demand across the skilling to employment lifecycle.

System Enabler 2

Outcome-based Financing

Access to finance remains a binding constraint on skilling participation, particularly where costs are high and outcomes are uncertain. While initiatives such as the Skill Financing Scheme and various State-specific programmes have expanded access, funding largely remains linked to enrolment rather than outcomes.

To address this gap, financing must **shift towards outcome-based approaches** that link support to verified placements, wage gains, or retention. Priority actions include piloting digital skill vouchers that place choice with learners, scaling placement-linked loan models, and using pay-for-results mechanisms such as Skill Impact Bonds. Collectively, these tools can reduce risk for learners while strengthening employer-aligned outcomes.

System Enabler 3

Operationalisation of the National Credit Framework (NCrF)

Operationalising NCrF is essential to enable learning to be recognised and carried forward across education, skilling, and work. Fragmented standards currently limit credit transfer and mobility, particularly for learners with work-based or informal experience. The NCrF provides **a shared credit language to treat learning as cumulative rather than episodic.** However, effective implementation requires credible and standardised assessment, supported by clear rubrics, evidence, and verification. Crucially, credits must be recognised as valid prerequisites for further education and employment, and not just accumulated. Enabling credit-based progression, re-entry through Open Schooling and Recognition of Prior Learning (RPL), and seamless movement across academic, vocational, and work-linked pathways is key to recognizing lifelong learning and sustained mobility at scale.

System Enabler 4

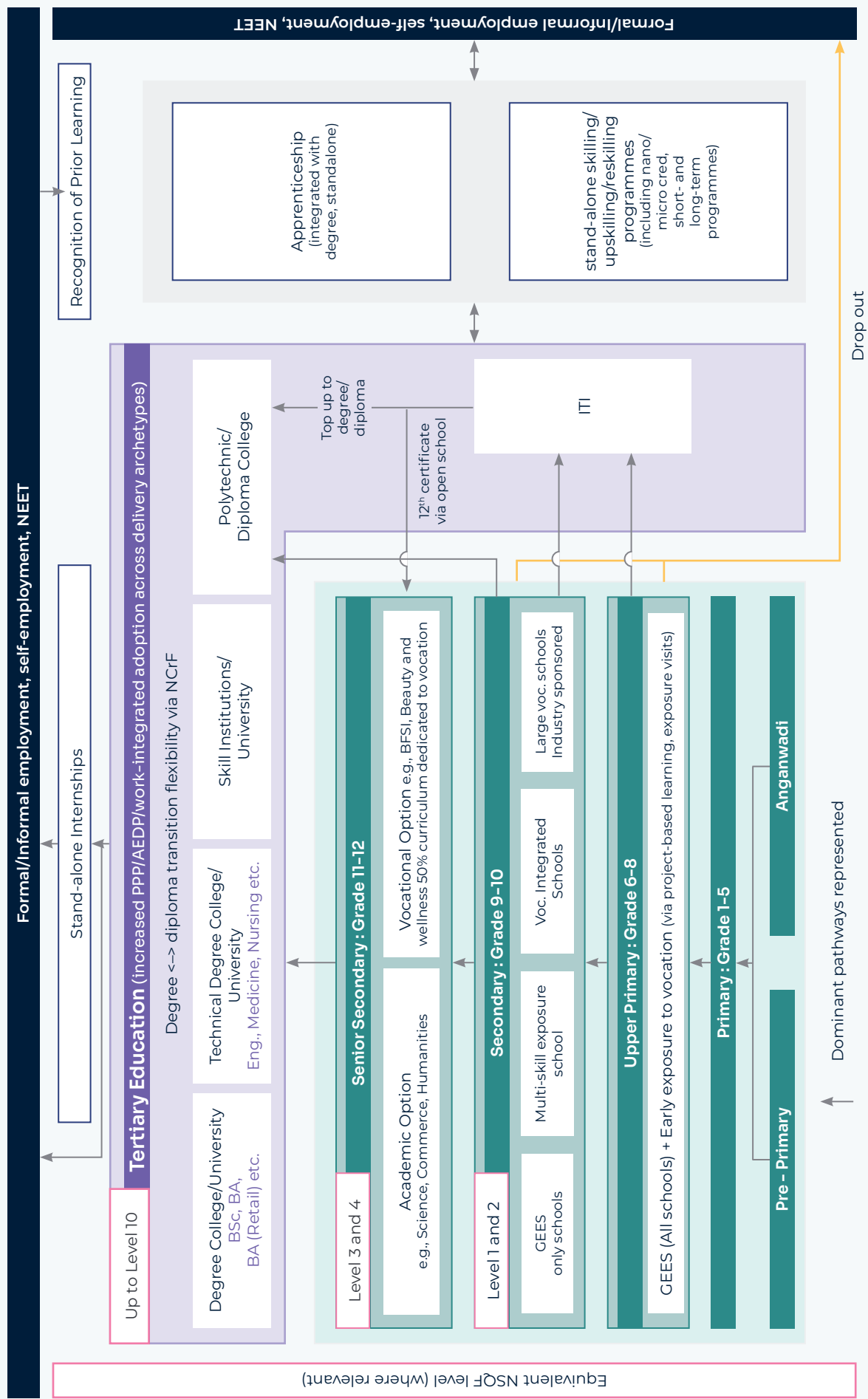
Skills-first Policies and Inclusive Infrastructure

A skills-first ecosystem requires enabling infrastructure that supports participation and progression across the skilling lifecycle. Currently, fragmentation and underutilisation of training facilities, workshops, labs, hostels, and community spaces across departments and sectors limit access and scale. To address this, establishing a State or National Shared Skills Infrastructure Network (PM-Gati Shakti and SIDH) to identify, map, digitise, and **enable shared use of existing assets** is critical to improving utilisation and expanding access without significant capital investment. These

infrastructure reforms must be complemented by **skills-first hiring practices and incentive-based measures** such as upskilling leaves to strengthen employer demand for job-relevant skills. Implementation should be anchored in a district-first approach, with accountability at the district Collector level and executional responsibility at the Panchayat/Ward level.



●



Conclusion

All the core reforms and system enablers align strategically to form a **'Reimagined Skilling Architecture'** (refer Exhibit 4) for each learner, across skill segments. It is built on three principles: (i) Non-linear learning pathways, (ii) Skilling as a lifelong process, and (iii) Outcomes (employability, progression, and livelihoods) as the primary measure of success. Individuals can move flexibly between education, skilling, and work as life and labour market needs evolve. The emphasis on an integrated skilling ecosystem is reflected in the introduction of the Integrated Scheme in Skilling Architecture (ISSA) in the Union Budget 2026–27. ₹600 crore has been allocated to MSDE in FY 26-27 for the Central Sector Scheme. As a landmark initiative, the scheme seeks to strengthen convergence across education, skilling, employment, and lifelong learning systems, while enabling coupling of national policy and frameworks with state-level planning and localised execution through State Skills Transformation Pilots in Andhra Pradesh, Odisha, Uttar Pradesh, Bihar and Assam. Delivering this vision requires coordinated action across governments, institutions, and employers,

with stronger public–private partnerships and aligned policies, financing, and delivery systems. Industry participation will be central to this effort, extending beyond traditional public–private partnerships to include career guidance and perception building, curriculum development, investment in training infrastructure, expansion of apprenticeships and work-based learning opportunities, enhancement of training quality, and facilitation of employment outcomes. States will be the primary drivers of transformation, adapting the national framework to local labour markets, infrastructure, and learner realities.





SECTION I

Setting the Context and Approach

Context

India's path to Viksit Bharat@2047 depends on the ability of its 1 billion+ citizens to learn, earn and advance socially and economically. Skilling lies at the heart of this ambition.

Over the past decade, India's skilling ecosystem has expanded into one of the world's largest and most diverse.



₹34,000 Crore¹

total allocation towards skilling by key Central Ministries in FY 2025-26



₹7.67 Crore²

individuals formally skilled since 2014-15

This momentum is reinforced by several State-led initiatives such as Tamil Nadu's Naan Mudhalvan, Maharashtra's Mahaswayam, and Odisha's Skilled in Odisha. State governments are increasingly prioritising capability building, strengthening skilling ecosystems, and investing in infrastructure to improve outcomes. In parallel, Civil Society Organisations (CSOs) and private sector players now engage across the skilling value chain, from community-based training and curriculum development to trainer capacity building and career guidance.

Yet skilling outcomes remain uneven, despite the significant progress made in expanding India's skilling ecosystem. Learners would benefit from more consistent access to credible guidance and greater awareness of the value of practical pathways such as apprenticeships, Industrial Training Institutes (ITIs), and diploma programmes. These challenges often begin early, shaped by limited vocational exposure in schools, a shortage of flexible learning options, and the opportunity to further expand industry-led, job-ready programmes. Affordability constraints, particularly for low-income and informal workers, and limited mobility across academia, skilling systems, and

the workforce further constrain participation and progression. These outcome gaps manifest differently across learner segments and stages, reflecting variation in preparedness, programme design, and labour market context, and point to clear opportunities for targeted reform.

These outcome gaps persist in part because delivery systems have not kept pace with changing labour market needs. Curricula in many institutions remain outdated, alignment with emerging job roles is limited, and duplication across programmes reduces efficiency. Infrastructure, where available, is often underutilised. Further, the presence of multiple delivery channels, often operating without sufficient coordination, makes it difficult to provide learners with an integrated experience. At the same time, the demand landscape is evolving rapidly. Shifts driven by artificial intelligence, automation, and the emerging climate context are reshaping job requirements, thus increasing the need to rethink how skilling is planned and delivered.

The urgency to evolve the skilling ecosystem is amplified by India's demographic profile. With a median age of 28 years³, India is among the youngest nations globally and home to one of the largest cohorts preparing to enter or transition within the workforce. This demographic advantage calls for skilling programmes that are tailored to specific segments, closely aligned with industry needs, and designed with a forward-looking perspective.

In this context, a fundamental reimagination of India's skilling blueprint is required. The objective is to enable personalised, flexible, and lifelong learning pathways aligned with individual aspirations. At its core, the vision is for a coherent, aspirational, and outcome-driven system that advances national skilling priorities while reinforcing broader social and economic goals. NITI Aayog's initiative in this direction, sets out a blueprint and outlines the concrete steps required to translate ambition into measurable outcomes.

1. Government of India, 2025, *Demand for Grants of Central Government 2025-26*, India, accessed in Nov 2025.

2. Government of India, Ministry of Skill Development and Entrepreneurship. (2025). *National policy for skill development and entrepreneurship*, accessed in Nov 2025.

3. Kumar, S., & Meena, S. (2024). *Navigating India's skill landscape: Bridging India's skill gap, empowering India's workforce*. Press Information Bureau, Government of India, accessed in Nov 2025.

Approach to this Study

A rigorous and multi-dimensional approach underpins the analysis presented in this report. To ensure that findings reflect both scale and lived experience across India's skilling ecosystem, the study adopted a mixed-methods approach combining quantitative analysis with in-depth qualitative enquiry. This approach enables broad patterns to be identified while retaining sensitivity to variation across contexts and segments.

The analysis was structured around five distinct learner and worker segments to enable a granular understanding of needs, constraints, and intervention pathways. These segments span the education-to-employment continuum and include (i) **School students** studying from Grade 6 onwards; (ii) **Tertiary learners**, including those pursuing degrees or diplomas in higher education as well as those enrolled in Industrial Training Institutes; (iii) **Formal workforce (non-agriculture)⁴** and **Informal workforce (non-agriculture)⁵**; (iv) **Not in Education, Employment or Training (NEET) youth⁶**, comprising individuals between the ages of 15 and 29 who are not engaged in education, employment, or training, as well as those who are unemployed; and (v) **Women**, considered as a cross-cutting

segment across all categories. Across these segments, the analysis focused on understanding aspirations for education and employment, unmet skilling needs, and the structural and behavioural barriers that prevent individuals from moving from learning to livelihoods. Together, these segments capture key transition points where targeted skilling support can shape long-term outcomes.

Workers engaged in agriculture across both formal and informal segments were not included in the scope of this study. This was based on the consideration that agriculture has distinct labour market characteristics and sector specific skilling requirements that require a separate analytical framework, and is therefore outside the scope of the present study. Hence, the agriculture sector would require a further detailed study.

The approach was further strengthened by a structured review of global skilling models. Systems in countries such as Germany, Australia, Indonesia, and Singapore were examined to understand how different approaches address scale, quality, industry engagement, and learner mobility, with a focus on relevance and feasibility for the Indian context.

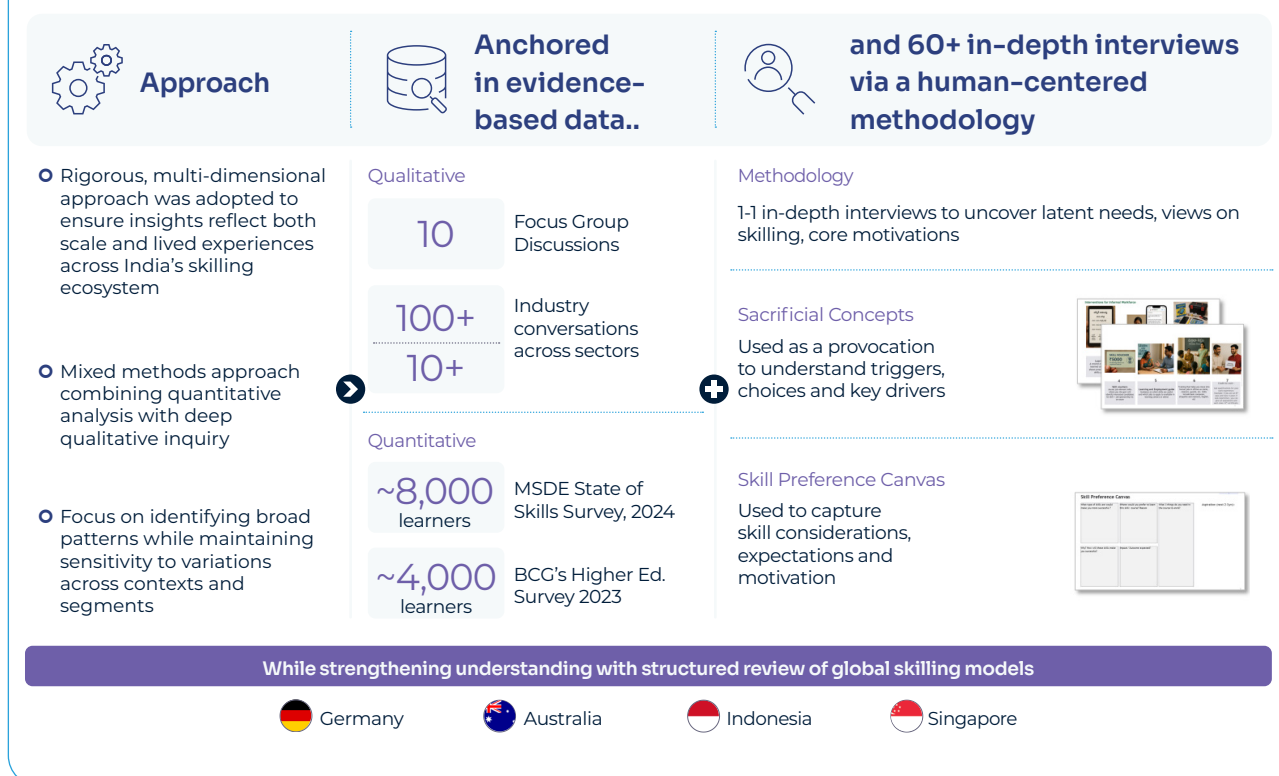


4. Formal Workforce: Workers employed in the organised sector with fixed wage/salary and social security (PF, ESI, etc.).

5. Informal Workforce: Workers without formal wage contracts or social security. Definitions adapted from: NCEUS, GoI, 2007.

6. NEET youth - Not in Education, Employment or Training. Age band 15-29 years used in this report, as per the Periodic Labour Force Survey (PLFS) methodology.

EXHIBIT 5: MIXED METHODS APPROACH FOLLOWED FOR THE STUDY



These quantitative and qualitative inputs form the analytical foundation of the report. They support a grounded assessment of India's skilling ecosystem and inform the findings and directions outlined in subsequent chapters. The

report presents a consolidated synthesis across the five identified learner and worker segments and the appendix provides a detailed segment-wise analysis to reflect differentiated needs and pathways.

India's Learners and Workforce: Composition

Who is the skilling system intended to serve, and how varied are the realities across learners and workers today? Addressing this question requires moving beyond aggregate indicators to a more segmented understanding of learning and earning pathways. Recent

data points to a labour force of 65.4 crores⁷ with 58.4%⁸ self-employed, 21.7% regular wage employees and 19.8% casual labourers alongside 79.6 crores⁹ who remain outside the labour force. Included in this category are ~29 Crore¹⁰ students across the education system.

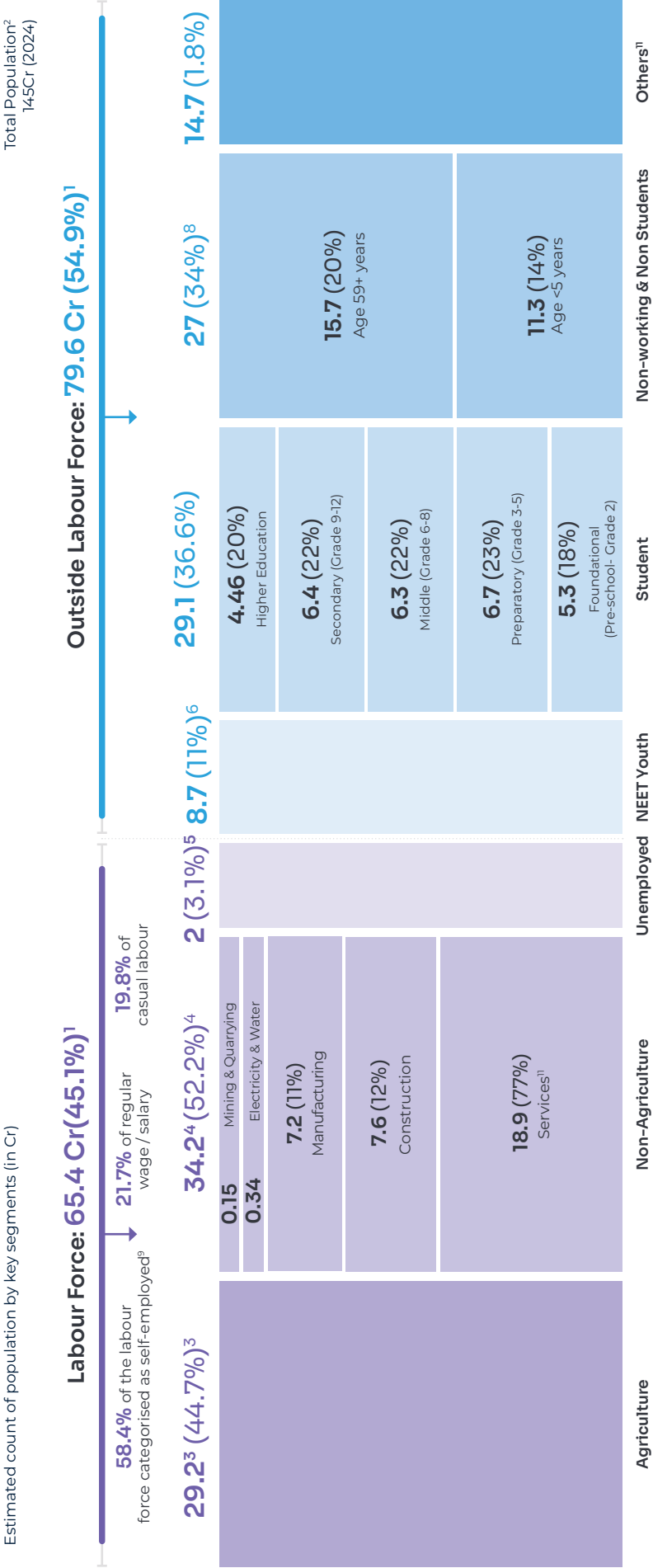
7. 65.4 Cr (45.1%) of LFPR reported in PLFS 2023-24, 79.6 Cr (54.9%) outside labour force. Ministry of Statistics and Programme Implementation, Government of India. (2024). *Periodic Labour Force Survey (PLFS) 2023-24*, accessed in Nov 2025.

8. Ministry of Statistics and Programme Implementation, Government of India. (2024). *Periodic Labour Force Survey (PLFS) 2023-24*, accessed in Nov 2025.

9. 65.4 Cr (45.1%) of LFPR reported in PLFS 2023-24, 79.6 Cr (54.9%) outside labour force, Ministry of Statistics and Programme Implementation, Government of India. (2024). *Periodic Labour Force Survey (PLFS) 2023-24*, accessed in Nov 2025.

10. Government of India, Ministry of Education, Department of School Education & Literacy. (2023-2024). *Report on unified district information system for education plus (UDISE+) 2023-24*; Government of India, Ministry of Education, Department of Higher Education. (2021-2022). *All India Survey on Higher Education 2021-22*, accessed in Nov 2025.

EXHIBIT 6: SEGMENTED VIEW OF INDIA'S POPULATION



Note: Estimates may vary owing to different data sources (PLFS, UDISE, AISHE, NSS etc.) and reported years (2021-24)

1. 65.4 Cr (45.1%) individuals participating in labour force reported in PLFS 2023-24 (all ages), 79.6 Cr (54.9%) individuals outside labour force 2. UN World Population Prospects 2024 (UNDESA) 3. 29.2 Cr individuals (44.7%) of labour force in Agriculture as per NIC 2008, PLFS 2023-24 (all ages); 4. 34.2 Cr (52.2%) Non-agri working population PLFS 2023-24; 3.8 Cr 15-29 years of working age, PLFS 2023-24 5. 2 Cr (3.2%) of labour force, PLFS 2023-24 6. ~9 Cr (11%) NEET excluding seeking jobs, NSS 78th round 2021; ~88% engaged in domestic duties 7. 29 Cr (36.7%) individuals; UDISE 2023-24 (NEP format) AISHE 2021-22 8. 27 Cr (34%) individuals; World Population Prospects 2024 (UNDESA) 9. PLFS 2023-24 10. Economic Survey (2021-22) using National Commission for Enterprises in the Unorganized Sector (NCEUS) 2007 11. 15 Cr (18.3%) Includes non-workers above age of 29 that are dependents, people with disabilities/chronic illnesses, vagabonds, involved in household duties, and pensioners (categories as per table B13-SC non workers by main activity (MoSPI) 12. Comprising of Trade, Hotel & Restaurant (77.37), Transport, Storage & Communications (35.55), and Other Services (75.40) as defined in PLFS 2023-24; Strategy for New India @75, NITI Aayog, November 2018

Note: As a static snapshot, this analysis must be complemented by forward projections and periodic calibration to understand the implications for long-run aggregate supply.

To capture this diversity, the study prioritised segments that reflect the range of transitions individuals navigate across education, work, and periods outside the labour market. The five segments¹¹ chosen for the analysis represent ~60 crore¹² people.

- School students: 12 crore¹³ students studying from Grade 6 onwards
- Tertiary education: 4.4 crore¹⁴ students pursuing degrees or diplomas in higher education as well as those enrolled in ITIs
- Formal and informal workforce (non-agriculture): 7 crore¹⁵ people in jobs provided at least one social security benefit, 27 crore¹⁶ people working in jobs without any social security benefit
- Women: across segments, with just 3% being in formal jobs and 71% working in informal jobs or part of the NEET segment¹⁷



11. Note: Agriculture has distinct labour market characteristics and sector specific skilling requirements that require a separate analytical framework, and is therefore outside the scope of the present study.

12. National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, 2022, *Periodic Labour Force Survey 2020-21*, India; Government of India, Ministry of Education, Department of Higher Education. (2021-2022). *All India survey on higher education 2021-22*; In addition to 4.46 crores students in higher education as per AISHE Provisional Estimates 2022-23 are 44.8 Lakh student in ITIs as of 2026 (Skill India Digital Hub, Ministry of Skill Development and Entrepreneurship; 2026, *ITI Dashboard*) | Note – Split of non-agri labour force across formal and informal taken as 20%-80%, accessed in Nov 2025.

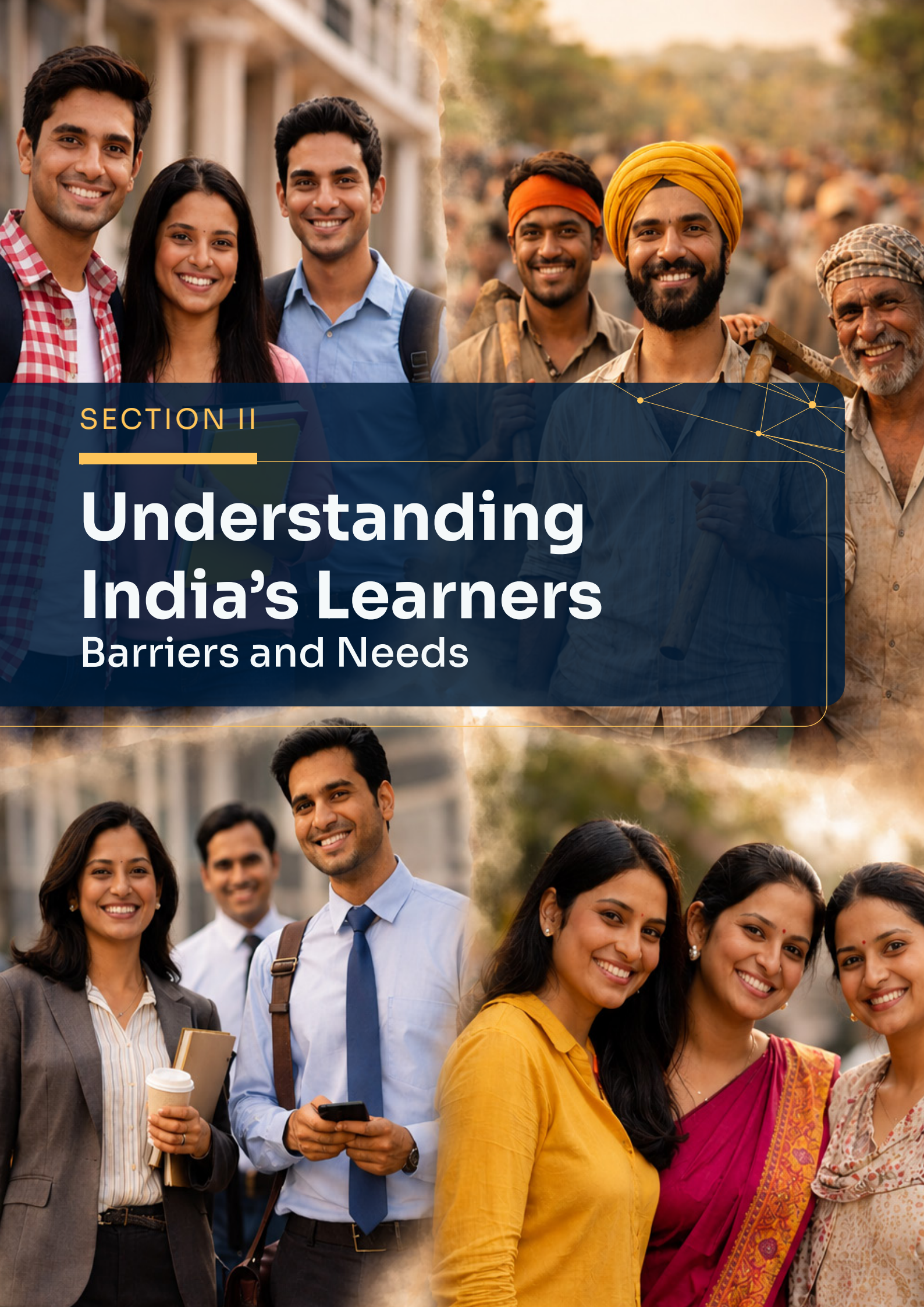
13. Ministry of Education, Government of India. (2020). *National Education Policy 2020*, accessed in Nov 2025.

14. Government of India, Ministry of Education, Department of Higher Education. (2021-2022). *All India survey on higher education 2021-22*, accessed in Nov 2025.

15. Ministry of Statistics and Programme Implementation, Government of India. (2024). *Periodic Labour Force Survey (PLFS) 2023-24*, accessed in Nov 2025.

16. Ministry of Statistics and Programme Implementation, Government of India. (2024). *Periodic Labour Force Survey (PLFS) 2023-24*, accessed in Nov 2025.

17. Ministry of Statistics and Programme Implementation, Government of India. (2024). *Periodic Labour Force Survey (PLFS) 2023-24*; Ministry of Education, Government of India. (2020). *National Education Policy 2020*; Government of India, Ministry of Education, Department of Higher Education. (2021-2022). *All India survey on higher education 2021-22*; In addition to 4.3 Cr students in higher education programmes (AISHE 20-21) there are 44.8 Lakh student in ITIs as of 2026 (Skill India Digital Hub, Ministry of Skill Development and Entrepreneurship; 2026, *ITI Dashboard*) | Note – Split of non-agri labour force across formal and informal taken as 20%-80%, accessed in Nov 2025.20-21) there are 12.6 Lakh student in ITIs as of 2022 (NCVT MIS ITI Admitted Trainee Dashboard as on12-Aug'25) | Note – Split of non-agri labour force across formal and informal taken as 20%-80%, accessed in Nov 2025.



SECTION II

Understanding India's Learners

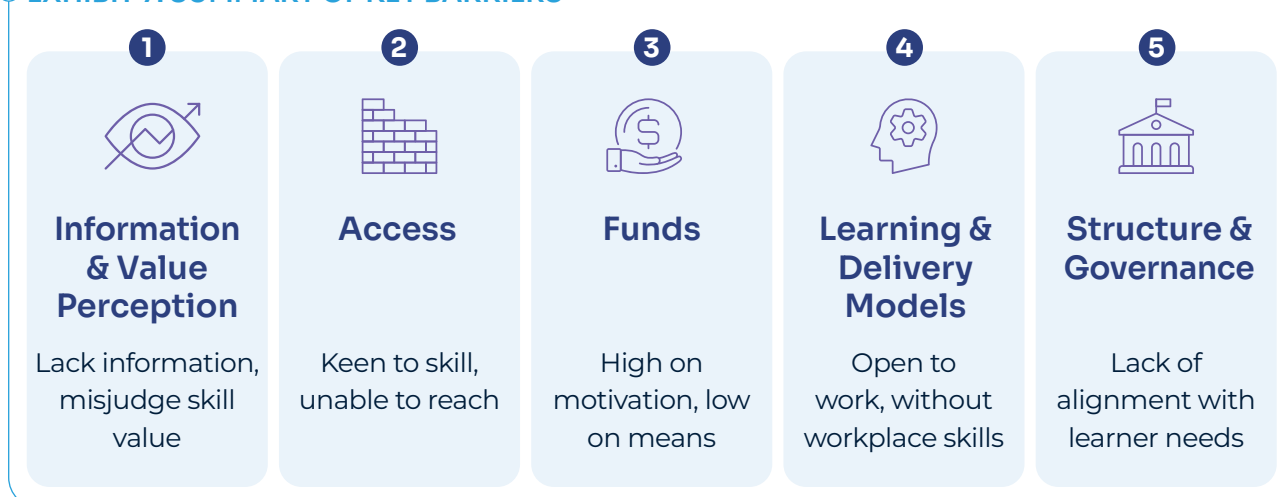
Barriers and Needs

Barriers Blocking India's Skilling Momentum

This section identifies a set of barriers that recur across all learner and worker segments. Drawing on quantitative survey findings to surface broad behavioural patterns, and complemented by qualitative, human-centred research to capture lived experience, the analysis **reveals five barriers that consistently shape skilling outcomes across segments**, regardless of age,

gender, or employment status. These barriers relate to **information asymmetry and value perception, access, funds, learning and delivery models, and structure and governance**. While they manifest differently across schools, tertiary education, the workforce, and among women and NEET youth, their effects are recurrent and reinforcing.

EXHIBIT 7: SUMMARY OF KEY BARRIERS



Each barrier influences a different stage of the skilling journey, from how individuals perceive options, to whether they can participate and afford high-quality pathways, acquire relevant skills, and translate learning into recognised outcomes. Combined, these barriers explain why

skilling pathways often fall short of delivering employability, progression, and sustained livelihoods at scale. The sections that follow examine each barrier, drawing on evidence across segments to build a comprehensive diagnosis of the system.

Barrier 1: Information asymmetry and Value Perception



In a system with weak information flows, learning choices are made without trusted guidance, participation declines, options narrow, and livelihood outcomes remain constrained, even when skilling options are available.

Across learners and workers alike, **the absence of clear and trusted information on skilling options and career pathways remains a persistent barrier**. When individuals do not know which pathways are credible, relevant, or valued by employers, skilling choices are shaped by default rather than by informed judgement.



How significant are these information and perception gaps?

This information gap is widespread. 47% of women, 43% NEET youth, 36% of higher-education students, 52% of formal workers, 55% of informal workers do not pursue skilling citing lack of awareness of the right programmes as one of the top 3 reasons for not pursuing skilling.¹⁸

The influence of weak information begins early in the education journey. Career decisions are often shaped by constraints such as examination scores, family preferences, or the perceived cost of investing in additional skills, rather than by aptitude, interests, or long-term career possibilities. In the absence of visible success stories from similar socio-economic backgrounds, vocational pathways remain undervalued from the outset.

By the time learners reach higher education, these perceptions are reinforced. Formal degrees are frequently chosen for the prestige they confer or to become eligible for a highly competitive set of government job examinations, rather than for employment outcomes. ITIs and other skilling pathways are viewed as low-trust or last-resort options, while online skilling courses are often perceived as unreliable, overly generic, or lacking hands-on training.

Limited understanding of returns reinforces these patterns. Many students are unaware of the benefits associated with skilling routes such as diplomas and long-term certifications. As a result, they default to degree choices recommended by parents or peers who may themselves lack labour-market information. Weak counselling and persistent social stigma continue to position vocational education as a second-tier option, even in cases where diplomas can enable faster entry into work.

Crucially, **vocational education is rarely presented as a credible, growth-oriented pathway.** With limited counselling, social bias, and low trust in current skill systems and online courses, the degree programs become the safer choice. Even when diplomas offer quicker entry into employment, individuals can later face stagnation, without clear or trusted opportunities to pivot, upskill, or progress as careers evolve.



¹⁸. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; Government of India, Ministry of Education, Department of Higher Education. (n.d.). *Metadata for All India Survey on Higher Education (AISHE)*. Statistics Division, Department of Higher Education; BCG. Qualitative Learner Study 2025; Top 3 answers basis question 'You have not undertaken/completed any skilling programme in past, what are the reasons for not doing any skilling programme?', accessed in Nov 2025.



What do learners forego when this information is not visible at the point of decision?

Salary data from BCG's Higher Education Survey shows that individuals pursuing a generic undergraduate (those pursuing B.A., B.Sc. or B.Com.) without skilling earn an average starting salary of ₹22,000 per month, with annual growth of 3.2%, compared to ₹29,000 per month at the same growth rate for a generic undergraduate with skilling¹⁹. Over time, this difference compounds. This ₹7,000 per month difference in the starting salary between those who pursued skilling and those who didn't for generic degree undergraduates can compound to a total income difference of ~₹9.7 Lakh over a period of 10 years²⁰. Yet information on these returns rarely reaches learners when choices are being made. It must be noted that while diploma and certificate pathways show higher returns in the study compared to generic degrees, their quality and delivery still require improvement (as detailed in subsequent sections). More critically, learners today lack access to reliable, course-level information on expected outcomes. Given that these insights are based on a limited sample, a wider, at-scale effort is needed to systematically capture outcomes and build a robust database for evidence-led counselling and guidance.

These challenges are compounded by limited guidance and counselling within schools and colleges. For those already in the workforce, uncertainty about what to learn and where to learn from contributes to inaction and career

stagnation. Awareness of government schemes, apprenticeships, and scholarships remains low, including initiatives such as Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Deen Dayal

Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), and the PM Internship Scheme, making it harder for people to make informed choices. Ironically, the people who stand to gain the most from the skilling pathways are frequently the least connected to trusted information channels that would help them navigate these options.

For women in particular, these constraints are intensified by concerns around trust, social permission, safety, time availability, and uncertainty about employment outcomes. Even where the desire to work or upskill exists, trusted support systems are often missing.



I am unaware of the skilling programmes around me. I can't ask in my neighbourhood. It doesn't reflect well on me as a daughter-in-law.

Recently Married Woman from Vijaywada (peri-urban)

19. Government of India, Ministry of Education, Department of Higher Education. (n.d.). *Metadata for All India Survey on Higher Education (AISHE)*. Statistics Division, Department of Higher Education.; 1. All respondents who reported getting a job after UG and reporting their salary. Average salary in first job after UG and annual growth estimated comparing 1st job and current job salary, accessed in Nov 2025.

20. Government of India, Ministry of Education, Department of Higher Education. (n.d.). *Metadata for All India Survey on Higher Education (AISHE)*. Statistics Division, Department of Higher Education.; 1. All respondents who reported getting a job after UG and reporting their salary. Average salary in first job after UG and annual growth estimated comparing 1st job and current job salary, accessed in Nov 2025. Generic undergrad degrees include - BA, Bcom, BSc.

Assumption - 'Difference in salary computed assuming consistent salary growth annually for 10 years.



Access determines whether individuals are able to engage with skilling opportunities in practice. It is shaped by limited early exposure, inflexible delivery formats, geographic and workplace constraints, and weak pathways to apply skills after training. Together, these factors influence who participates in skilling, when they do so, and whether learning translates into employability, progression, or sustainable livelihoods.

Access to meaningful skilling opportunities remains constrained at multiple points across the learning and working lifecycle. Even where awareness exists, learners and workers often face practical limits on where, how, and when skills can be acquired.

Access gaps in school and higher education

At school level, early exposure to vocational options remains limited. The National Education Policy (NEP) 2020 envisaged that 50% of students would have exposure to vocational subjects by 2025, and all students by 2030²¹. NEP 2020 specifies dedicated hours for vocational exposure from grade 6, yet implementation is still in its nascent stages.

As a result, many students move through schooling with little hands-on exposure to contemporary trades or work-linked General Employability and Entrepreneurship Skills. This constrains informed choice and contributes to gaps in foundational employability skills such as communication, problem-solving, and basic digital literacy. Further, gaps in practical and business-oriented skills make transitions into self-employment difficult. These constraints carry forward into higher education, where industry-integrated programmes remain limited and employability skills such as communication and workplace readiness are rarely embedded within degree curricula.



As of December 2025, skill education initiatives under Samagra Shiksha had been implemented in 25,140 schools, covering over 35.5 lakh students.²²



21. Ministry of Education, Government of India. (2020). *National Education Policy 2020*, accessed in Nov 2025.

22. Press Information Bureau, 15 July 2026.

This early access gap is reflected in employability outcomes. The Economic Survey 2024-25 notes that a significant share of the workforce enters the labour market without job-ready skills, particularly in communication, applied problem-solving, and role-specific competencies. Only

8.25% of graduates are employed in roles aligned to their qualifications²³. Limited exposure to practical learning and industry-aligned training continues to constrain employability, even among formally educated youth.



How lack of access manifests for those in the workforce?

For those already in the workforce, access constraints take a different form. Informal workers, especially those dependent on daily wages, face high opportunity costs when engaging in skilling. Time away from work directly affects income, making participation difficult. Further, flexible skilling formats remain limited, whether in programme duration (short-term versus long-term), mode of engagement (part-time versus full-time), or mode of delivery (digital, physical or phygital). This limits the ability to pursue skilling along with work and household responsibilities. As a result, many continue to remain in stagnant roles with low-income growth opportunities.

In several trades (across formal and informal work), access is further restricted by informal gatekeeping. Senior workers are often reluctant to share advanced techniques or knowledge, slowing skill transfer and progression into better roles or wages. In practice, advancement can stretch over many years, reflecting not an absence of skill, but restricted access to learning opportunities.



My boss won't tell me the trade secrets as he is scared that I will also rise and do better...

Multiple Employees in Formal and Informal Workforce

For workers unable or unwilling to migrate, access gaps are compounded by the scarcity of proximate, part-time or flexible job opportunities. Access to viable self-employment pathways are also limited. Informal workers often turn to

entrepreneurship because regular employment offers low returns and little security, even when they lack education, market knowledge, or financial buffers.

How does a lack of access impact women?

For women, and especially mothers, access constraints are further shaped by caregiving responsibilities and household schedules. Fixed training formats are often incompatible with daily routines. Access to high-quality, advanced, and industry-linked skilling remains limited, and enabling infrastructure such as safe transport,

secure childcare, and nearby training centres is often absent. Even after training, the lack of flexible and dignified livelihood options prevents skills from translating into sustained economic participation. As a result, many women turn to small, home-based self-employment that promises flexibility, but face constraints related to autonomy, access to capital, and market linkages.

23. Ministry of Finance, Department of Economic Affairs, Government of India. (2025). *Economic Survey 2024-25*, accessed in Nov 2025.

★ 68% of women prefer part-time courses and 30% prefer short duration courses²⁴.

○ EXHIBIT 8: AMBITIONS OF WOMEN CONFINED BY GEOGRAPHY AND NORMS

A WOMAN WITH ASPIRATIONS, SEEKING OPPORTUNITY...

Sangeeta married at 21 and soon had children.

She wants to learn a skill and earn a small supplementary income to support her household. But her options are shaped by where she lives and what she is permitted to do.

Training centres that are more than a few kilometres away are effectively inaccessible. Family expectations, safety concerns, and caregiving responsibilities mean she cannot travel beyond a familiar 3-5km radius, nor commit to fixed, full-day programmes.

As a result, even nearby work or training remains out of reach, keeping her desire to contribute financially unfulfilled.

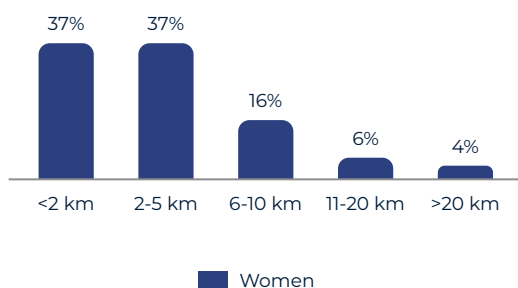


... LIKE SANGEETA, AMBITIONS OF MANY WOMEN ARE CONFINED BY GEOGRAPHY & NORMS



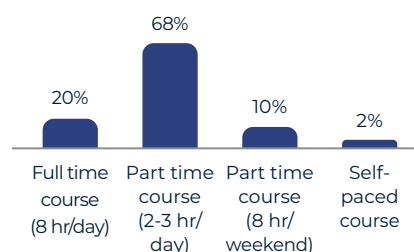
~75% prefer programmes within 5 km radius - anything beyond a 5 km radius or an unfamiliar location becomes inaccessible

Ques. How far did you travel for the skilling course? (N=1938 women)



78% prefer part-time courses – where they can manage household/caregiving responsibilities along with learning

Ques. Which of the following best describes the time commitment from your end for the skilling course (N=1,938 women)?



Source : State of Skills Survey, 2024; Ministry of Skill Development and Entrepreneurship (MSDE)

Barrier 3: Funds



★ Across segments, the affordability challenge is not limited to fees alone. It reflects a combination of direct costs, foregone income, and constrained access to high-quality options that are frequently priced beyond reach. Together, these factors shape who can invest in skilling, what kind of skilling they pursue, and whether learning can translate into sustained livelihood gains.

24. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; Immersion interviews conducted by BCG team, accessed in Nov 2025.

Affordability remains a binding constraint across skilling pathways and learner segments. Workers, particularly in informal or low-wage roles, face high opportunity costs from time away from work. NEET youth are constrained by the absence of income and the sunk cost of prior education. Students often cannot layer paid skilling onto existing financial commitments. For women, limited control over finances and competing household responsibilities further restrict the ability to invest in skilling. As a result, paid skilling is frequently financially infeasible for large segments of the population.

Students, especially those from low-income households, are already stretched by college expenses and, in many cases, private tuition. As a result, making additional investment in paid skilling alongside a traditional degree is often financially unviable. As a result, many students choose to get themselves a formal job/income source after graduation to support their families and often end up taking whatever brings in some stable income even if that is low paying; others, however, struggle to transition into work and become NEET.

Which skilling options remain out of reach for learners, particularly students, due to cost?

Advanced or placement-linked programmes, which act as a gateway to stable and well-paid jobs, are frequently priced beyond reach, limiting access for those who need them the most. Generic degrees such as Bachelor of Arts (BA), Bachelor of Commerce (B.Com) and Bachelor of Science (B.Sc) seldom translate into direct employment and even entry-level roles often require workplace readiness skill certifications, such as Tally or Office applications. A lot of industry-recognised private upskilling courses continue to be prohibitively expensive, which

prevents students and workers from getting a better paying job and keeps them trapped in stagnant roles with limited prospects for career advancement.

Cost sensitivity is particularly acute among informal workers: 80%+ of informal workers pursue skilling either free of cost or for less than ₹10,000²⁵. This reflects not preference, but constraints. Even when skilling is subsidised, the opportunity cost of participation remains high. Learners who are primary earners, especially those with unstable or daily wage incomes, cannot afford to forego wages for days, weeks, or months of training.

For women, affordability constraints intersect with access and aspiration. Limited control over finances often compels women to choose skilling options that are affordable rather than aligned with long-term career goals. Many select tertiary education or vocational courses based on cost alone, while others are unable to pursue skilling at all.

These patterns are reflected in participation data. Among those who pursue skilling, 72% of women take up skilling through free courses or pay less than ₹5,000 per course compared to 52% men²⁶. While this enables entry, it often limits access to advanced, industry-recognised programmes that lead to stronger employment outcomes.

Public funding support and government schemes do exist. However (and as stated earlier), many learners remain unaware of the financial assistance they are eligible for or find application processes complex and difficult to navigate.

25. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; N= 281 (unorganised who skilled or in skilling), Aggregated responses basis question 'What was the course/teaching fees you paid for the certification/training/skilling programme', accessed in Nov 2025.

26. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; Government of India, Ministry of Education, Department of Higher Education. (n.d.). Metadata for All India Survey on Higher Education (AISHE). Statistics Division, Department of Higher Education; BCG. Qualitative Learner Study 2025; Aggregation basis question 'What was the course/teaching fees you paid for the certification/training/skilling programme. Please consider only course/teaching fees and exclude any hostel/meal expenses', accessed in Nov 2025.



The quality challenge reflects a combination of weak foundational skills, limited delivery capability, outdated curricula, inadequate industry linkage, and insufficient opportunities for applied learning. Together, these factors shape how effectively skilling builds employability, supports progression, and enables learners to translate credentials into meaningful work, self-employment, or income acceleration.

Across schools, colleges, and skilling institutions, learning and delivery models remain overly theoretical and weakly connected to workplace requirements, limiting job readiness and career progression.

School and tertiary education curricula remain outdated and classroom-bound, creating a gap between what learners study and what workplaces require. In schools, vocational education remains limited in both reach and design as only 8% of secondary and higher secondary schools offer NSQF-aligned skilling²⁷, and where available, it is typically an optional or add-on subject rather than integrated into the core curriculum or a dedicated vocational pathway.

Practical training, hands-on projects, and industry exposure are largely absent across both school and higher education. As a result, foundational employability and entrepreneurship skills are not systematically built. Schools continue to find it challenging to develop basic numeracy, communication, and digital skills, weakening learners' confidence in interviews and workplace interactions. Students from regional-language schools face compounded challenges, as limited exposure to workplace communication and interview preparation further constrains employability and long-term career growth.



36% workers cite digital skills and 18% cite communication as challenges in finding jobs due to weak foundations.²⁸

Delivery quality reinforces these gaps. For instance, in higher education, practical courses, where included, are often mapped to faculty without industry know-how, such as commerce teachers delivering digital marketing content. Stretched faculty capacity and inadequate laboratory infrastructure reduce the effectiveness of skill development, leaving students with outdated or superficial exposure. These constraints undermine the ability of learning to translate into updated, job-relevant capabilities.



We study concepts, but we don't know how they are used in real jobs.

Recent Graduate from ITI in Rural Maharashtra

Job readiness support is also weak. Curriculum Vitae (CV) writing, mock interviews, and structured job-search preparation are not formally built into tertiary education, leaving students to rely on costly private coaching or self-preparation. This results in learners entering the job market without confidence in articulating their skills.



34% of students cite lacking skills and 18% cite lack of interview preparation as key pain points while pursuing degrees.²⁹

²⁷. Ministry of Skill Development and Entrepreneurship. (2025). *Integration of Skills with Formal Education*. Press Information Bureau. India, includes all schools – government, government-aided and private, accessed in Nov 2025.

²⁸. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; % students ranking the option in top 3 basis question 'What according to you are the reasons because of which you are not getting a new job?'; N=582 seeking new jobs, accessed in Nov 2025.

²⁹. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; % students ranking the option in top 3 basis question 'You mentioned you are not satisfied with the overall education outcome, can you tell us what are the problems/pain points you experienced while you were pursuing the course?'; N = 2795 UG students, accessed in Nov 2025.

Work-integrated learning, which should bridge education and employment, often falls short. Internships and apprenticeships are frequently superficial or tokenistic, limited to observation with unclear learning outcomes and limited guidance. Without demonstrable skills or experience, students struggle to convince employers of their readiness. This gap is reflected in outcomes.

★ **80% of higher-education students cite lack of practical experience and industry exposure as a major pain point, and 47% of formal workers identify lack of prior work experience and internships as the top challenge in finding new jobs.³⁰**

Misalignment with local industry demand, especially in short-term programmes further weakens delivery effectiveness. Skilling programmes are not aligned with nearby economic opportunities (e.g., within a district), with the result that even after acquiring new skills, many learners struggle to find local roles aligned with their training, leaving them disconnected from jobs in their own regions. As learners move into higher and tertiary education, these misalignments persist, reinforcing gaps rather than correcting them.

Entrepreneurial pathways within education are also underdeveloped. Schools, colleges, and ITIs do not systematically provide business-readiness modules, mentorship, or local incubation support, limiting the ability of learners to pursue self-employment or nano-enterprise pathways. As a result, those interested in entrepreneurship are left without tools to succeed and remain highly dependent on informal guidance.

How do learning and delivery models impact those already in the workforce?

For those already in the workforce, learning and delivery constraints take a different form.

★ **61% of higher-education students who aspire to entrepreneurship are not aware of pathways to pursue it.³¹**

Rigid and static job roles leave little scope for learning or growth, while survival-oriented work offers limited time, flexibility, or employer support for upskilling. Workers in factory lines, shops, or clerical roles face few opportunities for structured learning or progression, trapping them in low-growth trajectories. Where skilling options do exist, they are often overly theoretical and weakly connected to job progression.

Across sectors, mid-career and declining-role professionals lack structured reskilling pathways, leaving them vulnerable to disruptions such as Artificial Intelligence (AI) adoption. Many recognise the risk late or postpone action due to the absence of clear, practical learning routes.



We study concepts, but we don't know how they are used in real jobs.

Data Analyst, New Delhi

These challenges point to learning and delivery systems that do not consistently build job-relevant skills, proof of work, or adaptive capacity. Weak practical exposure, poor industry linkage, tokenistic work-based learning, and limited support for reskilling and entrepreneurship constrain the translation of learning into employment and progression outcomes across the life course.

³⁰. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; N = 2795 UG students, accessed in Nov 2025.

³¹. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; N = 3512 aspiring to skill, accessed in Nov 2025.

Barrier 5: Structure and Governance



Structural governance challenges manifest in how skilling initiatives are planned, funded, and delivered across Centre-State arrangements. Parallel programmes and funding streams often operate with limited convergence, leading to duplication in some areas and gaps in others.

At the operational level, skill funding, programmes, and infrastructure are distributed across multiple ministries and Centre-State arrangements, often with limited coordination. This results in similar programmes being implemented in some geographies while others remain underserved. Training centres and laboratory infrastructure are utilised inconsistently across regions, with capacity underused in certain locations and unavailable in others. For learners and training providers, this fragmentation translates into uneven access to facilities, variable delivery quality, and disrupted skilling pathways.



I have heard of the Central apprenticeship schemes for my trade but not sure if my certification makes me eligible for it since the course I completed was run by the State government.

Student Trying to Get Employed

Policy rules in several sectors continue to prioritise formal degrees over demonstrated skills. Degree-based eligibility norms, particularly in government and public sector recruitment, restrict skill-based hiring and reinforce credential-driven pathways. This limits incentives for hands-on teaching and practical training and encourages a focus on enrolment scale rather than learning quality, job readiness, or outcomes. The situation is similar in private sector jobs as well, although a few organisations are now beginning to recognise and implement skill-based hiring policies such as recruiting done on the basis of skill-based job descriptions, practical assessments and interviews, and recognising skill certifications.

Another challenge at hand is the absence of clear mandates, standard operating procedures

and incentives for industry co-ownership which weakens alignment between skilling provision and labour market demand. While industry participation exists, accountability for training relevance and outcomes is often missing. For example, there are no incentives for private employers to formally recognise and credit work experience of their informal or entry level workers in line with National Credit Framework (NCrF) principles.



There is a lot of confusion and unawareness with so many agencies and programmes, for e.g., on apprenticeship. We get requests for hiring individuals under National Apprenticeship Training Scheme (NATS), National Apprenticeship Promotion Scheme (NAPS), State programmes. People and processes are different, and while these are excellent schemes, understanding and implementing them can get challenging.

**Head of HR,
Large Automotive Company**

Finally, implementation gaps further compound structural challenges. For example, the rollout of reforms such as the National Credit Framework (NCrF) is still very nascent and uneven. Academic institutions, industries, and training providers often lack clarity on processes and responsibilities, limiting consistent and scalable adoption.



The NCrF is an excellent concept. I did not realise that it had been a while since it was launched. We are keen to recognise our gig and full-time staff experience. How can we start?

**Head of Mid-sized Staffing Company,
Tamil Nadu**

Need Gaps Across Learners

The barriers identified so far explain the challenges of the skilling ecosystem across information and value perception, access, funds, learning and delivery models, and structure and governance. The question that follows is therefore direct: **what core needs must be addressed for skilling to function as a reliable pathway across education, work, and re-entry?**

Across learner and worker segments, a consistent set of needs emerges. While constraints differ by stage and circumstance, these needs recur across segments and shape participation, choice, and outcomes in different ways.

A foundational need, particularly at school and tertiary levels, is access to **trusted information and guidance**. Early information gaps and misjudged value perceptions point to the need for counselling and aspiration-building that begins in school and continues through key transition points. For students and parents, this includes clear articulation of skilling pathways, outcomes, and return on investment. For women and NEET youth, the need extends to trusted mentorship, peer networks, and safe guidance channels that support informed decision-making.

Linked to this is the need for **early and sustained access to skilling** within the education system. Exposure to skilling, both General Employability and Entrepreneurship Skills and trades, in schools is essential to build familiarity with work-linked learning and normalise skills as part of mainstream education. In tertiary education, this translates into access to practice-based, industry-aligned curricula with embedded skilling tracks, internships, and apprenticeships that support job readiness rather than credential accumulation alone.

Affordability-related barriers point to a clear need for **viable financing mechanisms** across

segments. Students require access to financing and loan options for high-quality programmes. Workers need support or incentives to offset opportunity costs. NEET youth and women require affordable or subsidised training options, alongside dedicated financial support where constraints are most binding. Across segments, the ability to combine learning with earning remains a central requirement.

Barriers related to quality and relevance highlight the need for **work-ready learning and delivery** models. In schools, this means integration of employability and foundational workplace skills within the curriculum along with robust and practice-oriented vocational delivery. In tertiary education, it requires industry-aligned curricula, access to internships and apprenticeships, and structured job-readiness support. For the workforce and NEET youth, the need shifts towards mid-career reskilling, self-employment pathways, and learning options aligned with local demand and emerging sectors.

Underlying these segment-specific needs is a set of **system-level requirements**. Convergence of schemes and funds, skills-first hiring practices, and clear mandates for industry-led training and certification are essential to ensure coherence. Strong implementation mechanisms, including robust recognition of prior learning, are needed so that skills acquired translate into recognised credentials and mobility across education, skilling, and work.

Therefore, these needs reflect how common system constraints manifest differently across learner segments, while remaining anchored in the same core dimensions. They provide the organising logic for the strategic responses outlined in the following section.

EXHIBIT 9: NEED GAPS

	 Information & Value Perception	 Access	 Funds	 Learning & Delivery Models	 Structure & Governance
	Lack information, misjudge skill value	Keen to skill, unable to reach	High on motivation, low on means	Open to work, without workplace skills	Lack of alignment with learner needs
School	Access to trusted information and guidance for students and parents	Access to foundational employability skills and vocational pathways in school		High quality labs and teachers for vocational and general employability subjects	
Technical and Higher Ed		Access to industry-aligned, practice-based degrees with multi-entry, multi-exit pathways	Access to financing and loan mechanisms for high-quality courses	- Industry-aligned curriculum - Access to internships/apprenticeships - Structured job-readiness support	- Convergence of schemes and funds - Skills-first hiring policies - Employer incentives and mandates for industry-led training and certification
Workforce	Awareness of advanced skilling options and relevant government schemes	Access to flexible, hybrid, modular delivery formats	Wage support/incentives to offset skilling opportunity costs	Outcome based courses, mid-career reskilling and self-employment pathways aligned to local demand	Strong infrastructure footprint for scheme roll out like RPL
NEET	Trusted mentorship and job discovery channels	Access to proximate, flexible work opportunities with safety/transport facilities	Affordable, subsidised training and financing options	Structured pathways for re-entry and self-employment	
Women	Women-focused career guidance and peer networks		Dedicated financing support for women		







SECTION III

Reimagining India's Skilling

Core Reforms, System Enablers and
a New Skilling Architecture



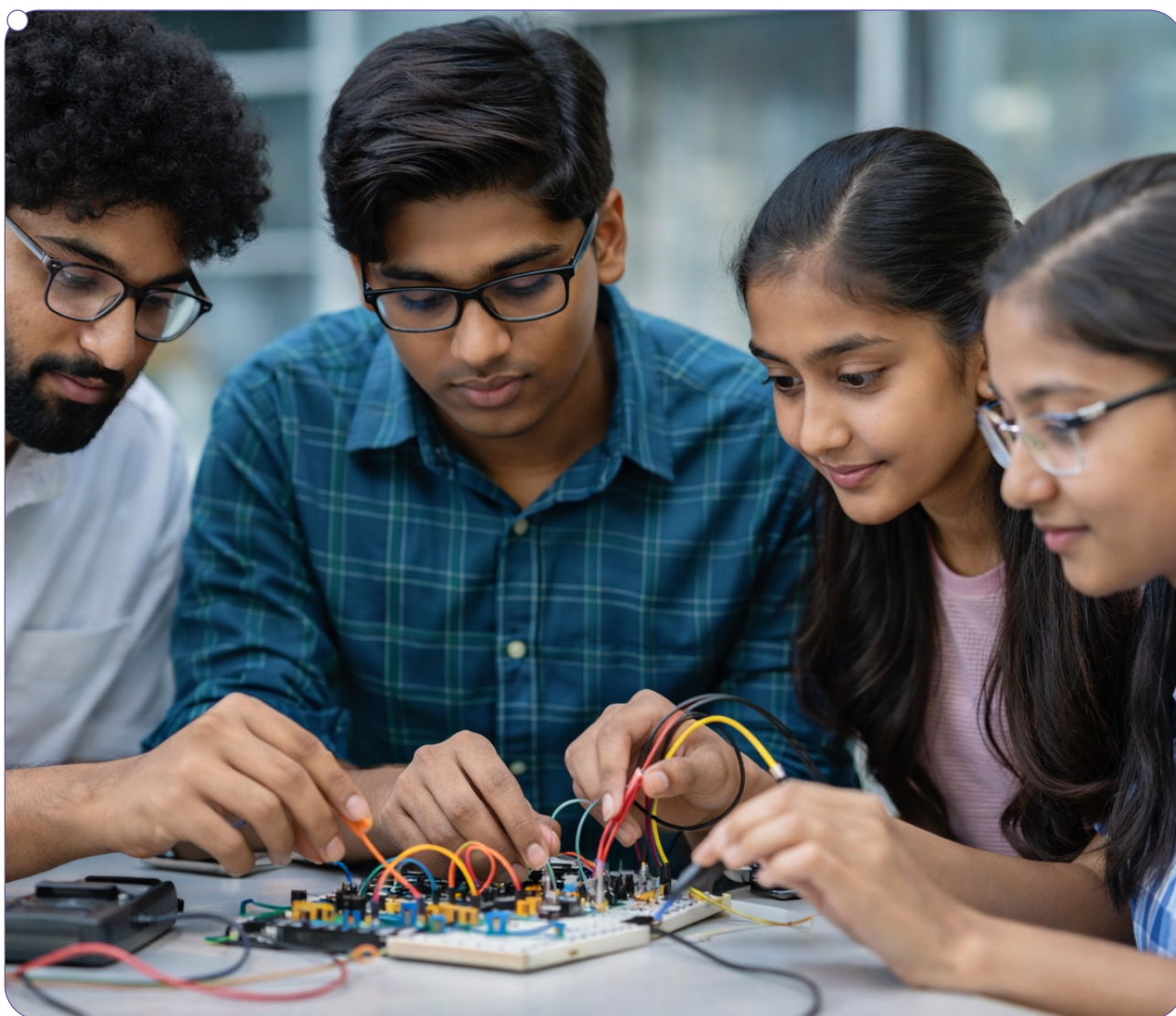
Based on the barriers and needs identified across segments, a focused set of core reforms and system enablers to drive system-level change have been identified.

Addressing the structural and delivery gaps identified across the skilling ecosystem requires moving beyond fragmented interventions to a focused set of systemic shifts. Core reforms represent these shifts. They concentrate effort on a limited number of priority changes in how the ecosystem operates, at points where learners and workers often encounter barriers. Each core reform targets a specific transition, such as early integration of skills in education, closer linkage between learning and work, or access to reskilling the workforce.

System enablers provide the conditions required for effective implementation. System enablers address how the system operates across policy, institutions, financing, and technology.

They support recognition of learning across institutions, portability of credentials, and mobility between education, skilling, and work. System enablers also strengthen coordination, align incentives, and ensure that information, funding, and digital infrastructure work together, reducing fragmentation and administrative barriers.

Each core reform and system enabler is anchored in clear, actionable concepts designed to be implemented on the ground and adapted across diverse State contexts. Taken together, these elements define how skilling can move from episodic participation to continuous capability-building. They are designed to be implemented on the ground, adapted by States to local contexts, and coordinated across ministries and stakeholders. The following section sets out these core reforms and system enablers and supporting concepts in detail.



Core Reforms

1



**Skill integration
in Schools**

2



**Viable PPP/PSE
Apprenticeship
Embedded Degree
Programmes**

3



**Outcome-linked,
industry-backed
programmes**

4



**Apprenticeship
for all**

5



**Guidance and
perception
building**

System Enablers

1



**Digital Skills
Passport**

2



**Outcomes-based
Financing**

3



**NCrF adoption for
pathway mobility**

4



**Skills-first policies
and infrastructure**

EXHIBIT 10: CORE REFORMS AND SYSTEM ENABLERS WITH SUPPORTING CONCEPTS TO IMPLEMENT THEM



The Core Reforms

Core Reform 1 Skill Integration in Schools

Skilling must begin early if it is to shape employability, choice, and progression later in life. With students spending a significant portion of their formative years in schools, the absence of structured skill-building during this period leaves lasting gaps. Current curricula place limited emphasis on foundational employability skills

(including critical thinking, problem-solving, communication, and financial awareness), entrepreneurship know-how as well as trade-related skills that underpin career readiness across pathways. This must be supplemented with adequate teacher capacity and instructor preparedness.

Progress to date on Skill Integration in Schools

Acknowledging the importance of deep integration of skilling with academia, the NEP 2020 has already laid down the guidelines calling for all educational institutions to enable access to skills within the school education system. However, less than 1 in 12 secondary schools³² today offer vocational subjects, falling short of the NEP target³³ (at least 50% of learners shall have exposure to vocational education programmes by 2025 and all students by 2030).

The NEP’s guidelines have now translated to curricula frameworks via the latest National Curriculum Framework (NCF)³⁴. Students are recommended to be exposed to and develop basic skills in three forms of work (work with life forms, work with machines and materials, and work in human services) at the preparatory, middle, and secondary stage.

EXHIBIT 11: NCF RECOMMENDATIONS ON INTEGRATING SKILLS IN SCHOOL EDUCATION

Form of Work	Grade 6-8	Grade 9-10
Working with Life forms	Project work focused on ‘developing capacities to do productive work that involves plants and animals’ (e.g., a vegetable garden or a chicken coop). Skills involve practical work and knowledge of biology	Floriculture, dairy farming, sugarcane cultivation, or natural farming
Working with Machines and Materials	Handicraft work using paper, wood, clay, fabric. Skills include manual dexterity, tool use, and attention to detail	Robotic welding, advanced carpentry and tailoring. Use of high-tech machining and automated manufacturing equipment
Working in Human Services	Activities like helping in a nursing home or working in a shop. Students develop interpersonal communication and compassion	Housekeeping, wellness/beauty, tourism/hospitality

Source: Chapter 9, National Curriculum Framework for School Education 2023

In Grades 11 to 12, students have the option to further specialise their skills e.g., operating advanced machinery.

32. Ministry of Skill Development and Entrepreneurship. (2025). *Integration of Skills with Formal Education*. Press Information Bureau. India.
33. Ministry of Education, Government of India. (2020). *National Education Policy 2020*.
34. National Council of Educational Research and Training. (2023). *National Curriculum Framework (NCF)*.

Considering these guidelines, several Central and State Boards are adapting the framework and introducing skilling in schools. For example, the Central Board of Secondary Education (CBSE) has introduced vocational skilling from the middle school level, offering students early access to practical skill-building. In Grades 6 to 8, this takes the form of short 12-hour modules designed to provide a basic understanding of different vocations. At the secondary level, students can choose from a range of competency-based subjects aligned with the National Skills Qualification Framework (NSQF), alongside efforts to establish Skill Hubs within schools³⁵. States have also refined these requirements to suit local needs. For instance, Punjab has introduced vocational streams for Grades 11 and 12 in its Hunar Sikhya Schools. Students in these schools take compulsory subjects that build broad transferable skills (e.g., Functional English, Technology in Everyday Life), alongside three elective trade subjects in their chosen domain (e.g., three subjects related to Healthcare Sciences & Services)³⁶.

Building further on the policy initiatives and anchored on the underlying need for Skill Integration in Schools, this bet suggests **embedding employability and vocational skills within the school curriculum** to prepare every learner for the future.

General Employability and Entrepreneurship (GEES) for All, as a foundational set of skills addressing communication, digital skills, financial literacy, teamwork, problem-solving and entrepreneurship is recommended to be introduced from Grade 6 through Grade 12 across all schools. Evidence from longitudinal and experimental studies indicates that foundational skills such as communication, problem-solving, and basic digital capability are associated with improved job outcomes, including higher employment rates and earnings³⁷, and translates into meaningfully higher wage outcomes for professionals with comparable technical skills when complemented by strong soft skills³⁸. Industry demand mirrors this need, with employers consistently emphasising foundational employability skills as essential across roles and sectors.

International practice reflects broad adoption of this approach, with countries such as Ireland, South Africa, and Singapore integrating employability and career education within school curricula. For States, these findings suggest the value of **embedding GEES within mainstream schooling** as a universal baseline, ensuring that all students acquire core employability skills alongside academic learning.



35. Central Board of Secondary Education. (2025). *Secondary school curriculum (2025–26)*.

36. Punjab School Education Board. (n.d.). *Scheme of studies for Hunar Sikhya School*.

37. Heckman, J. J., & Kautz, T. (2012). Hard evidence on soft skills. *Labour Economics*, 19(4), 451–464.

38. Deming, D. J. (2015). *The growing importance of social skills in the labor market* (NBER Working Paper No. 21473). National Bureau of Economic Research.

EXHIBIT 12: GEES FOR ALL

GEES for all | Academic evidence, global examples, and India's frameworks make universal GEES a clear capability unlock

1

Evidence suggests GEES delivers substantial long-term returns



Longitudinal studies show that social-emotional and employability skills developed in adolescence predict employment, earnings, and career stability decades later¹



26% higher wages for people with same technical skills but higher soft skills²; 30% increase in performance of people with good soft skills³; 85% of an employee's job success from soft skills⁴

2

Global practice shows widespread adoption



Ireland

GEES embedded in all subjects (communication, problem solving, etc.) + short courses on digital media, enterprise etc.



South Africa

Mandatory subjects on personal development, career guidance, entrepreneurship etc., + workplace readiness modules



Singapore

Integrated across subjects - Career exploration, digital literacy, self-awareness modules

3

Policy frameworks have begun creating space for GEES in schools



NCF implicitly references employability skills (teamwork, communication, problem-solving) but lacks grade-level differentiation



NCVT has developed frameworks, micro/nano modules (English language literacy, self employment & entrepreneurship etc.), and assessment rubrics which can be aligned to State context



Implications for States

Develop grade-wise framework; leverage NCVET framework as reference

Curate content aligned to levels in the qualification framework

Introduce GEES for all grades & schools with modules integrated into existing subjects (where possible) and independent GEES modules

Offer nano/micro-credentials/certifications (in addition to grade certifications)

1. Hard evidence on soft skill - James J. Heckman, Tim Kautz; 2. For the period 1980-2012, Research by David Deming, Professor, Public Policy at the Harvard Kennedy School; 3. Research by global organisational consulting firm Kornferry, 2019; 4. Research by Stanford Research Center and Harvard University, 2015

In parallel, **Kaushal Tracks focused on specific trades can be introduced from Grade 9 onwards**. These dedicated vocational pathways can help integrate vocational education into the school curriculum through multiple delivery models. These trades will be offered at a subset of schools with Grade 9 to 12 depending on school enrolment, infrastructure availability and budgets. Trade offerings can be informed by local demand, broader aspirational choices, and

national skill requirements, ensuring relevance without over-concentration. Evidence from a Ministry of Education and World Bank study indicates that current vocational trade offerings in schools are largely agnostic to district-level economic demand³⁹. In many locations, the selection of trades does not systematically reflect local industry presence, emerging employment clusters, or realistic post-school opportunities available to students within their districts.

39. Ministry of Education, Government of India. (n.d.). *Jobs at your doorstep* (with World Bank).

Global practice shows that dedicated vocational pathways at the senior secondary stage are a common and established feature of schooling systems. Countries such as Indonesia, Germany, South Korea, and Australia offer explicit vocational tracks from Grades 9–12, typically through a mix of dedicated vocational schools, apprenticeship-integrated models, and school-based pathways linked to external certification. Coverage is often choice-based, with a significant share

of students opting into vocational tracks, and delivery emphasises hands-on training, industry exposure, and trade-specific curricula leading to recognised competencies. For States, **this evidence highlights the value of offering structured vocational pathways at the senior secondary level, alongside academic options, to enable deeper skill development and clearer transitions into work or further technical education.**

EXHIBIT 13: KAUSHAL TRACKS: BENCHMARK FOR GRADES 9 AND 10

Indonesia, Germany and South Korea offer dedicated in-depth vocational study after grade 9

	 Indonesia	 Singapore	 Germany	 South Korea
System approach	Explicit vocational pathway after grade 9	Trade agnostic vocation-oriented track within regular school system	Early vocational track assignment with transition to apprenticeship dual system	Explicit vocational pathway after grade 9
Coverage	Choice based; ~45% in vocational schools	Systemic assignment; ~20% of students	Choice based and systemic assignment (teacher decision binding in 8/17 States)	Choice based; ~25% in vocational schools
Mode of delivery	Dedicated vocational schools	Regular schools - Normal (Technical) track	Dedicated vocational schools	Dedicated vocational schools
Skill curriculum	~50% vocational curriculum, mandatory internships, competency certification	Broad based technical electives; optional MOE-ITE applied electives in some schools	- Grade 9 - Broad exposure - Grade 10 - apprenticeship + in-depth school learning	In-depth trade specific curriculum, school-industry cooperative for hands on training

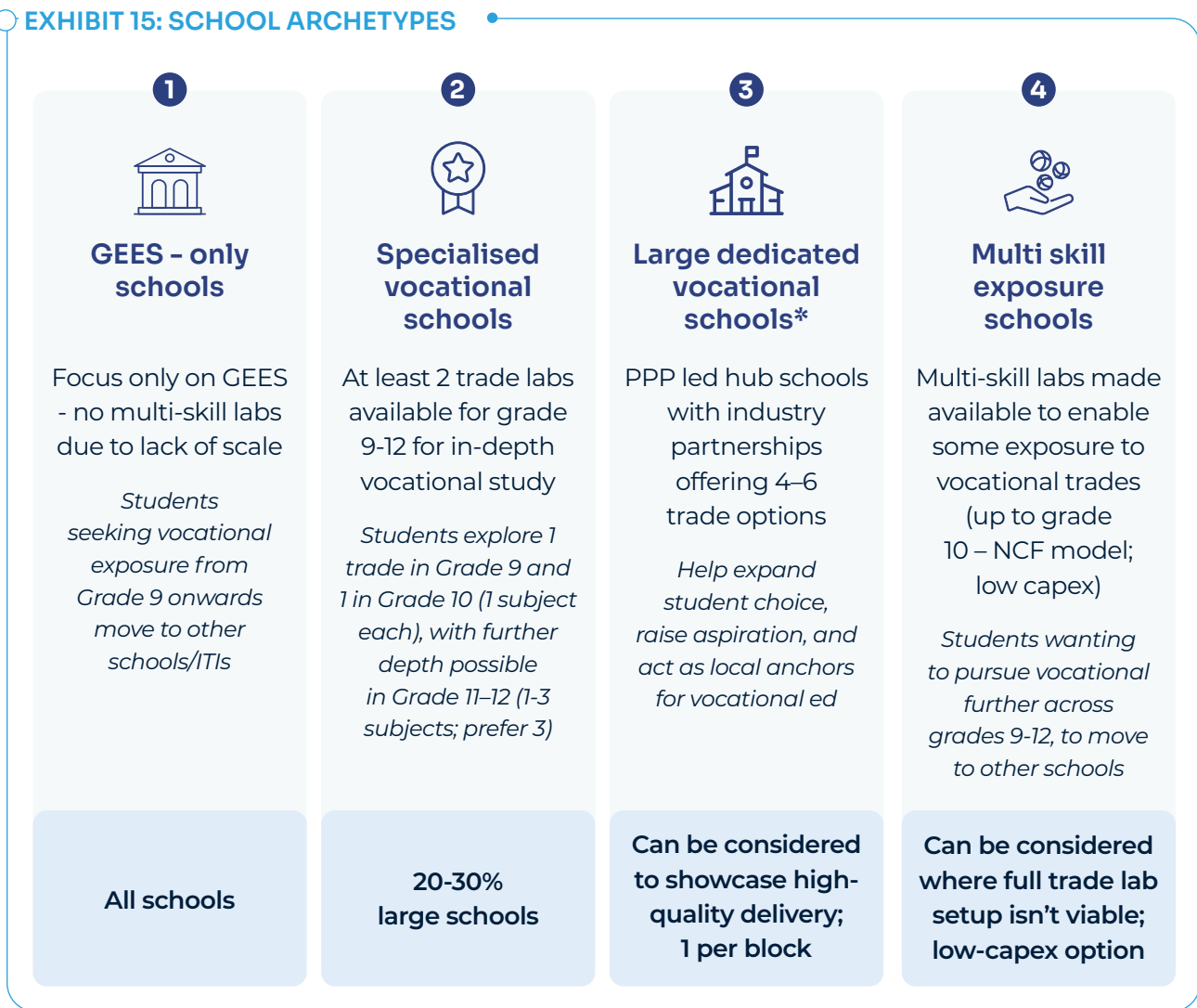
EXHIBIT 14: KAUSHAL TRACKS: BENCHMARK FOR GRADES 11 AND 12

	 Australia	 Germany	 Indonesia
System approach	Option b/w apprenticeship model (in-school) or certificate (outside school)	Flexibility to pursue dual system (apprenticeship + school) or vocation integrated regular school	Deep specialisation within vocational schools
Coverage	Choice-based; ~50% students in vocational tracks	Choice based; typically taken by students on vocational track	Choice based; ~45% students are in vocational schools
Mode of delivery	○ In-school (apprenticeship) OR ○ Pvt/Govt institutes for external certificate courses	○ Dedicated schools with apprenticeship OR ○ Regular school	Dedicated vocational schools
Skill curriculum	Job linked in-depth curriculum leading to competency certificate	Hands-on training + vocational subjects in school (labs + internships in regular schools)	Competency Specialisation, mandatory internships, industry-recognised certifications

As we move towards implementation, four potential school archetypes emerge, which States can further evaluate as they consider integrating skilling in schools. **(i)** The first archetype are **‘GEES-only Schools’** that are envisioned to focus on providing general/foundational employability and entrepreneurship skills, without multi-skill labs. **(ii)** The second archetype of schools are **‘Vocational Integrated Schools’** that are expected to provide at least two trade labs for deeper vocational study from Grades 9 to 12 in addition to offering GEES from Grade 6.

(iii) Third are **‘Large Industry Sponsored Vocational Schools’** functioning as Public-Private Partnership (PPP)-led hubs that can offer 4-6 aligned trades and become local anchors for high-quality vocational education. **(iv)** The final archetype of schools consists of **‘Multi Skill Exposure Schools’**. Through low-capex multi-skill labs, they are envisioned to allow broad multi-skill exposure to 6 vocational trades from Grades 9 to 10, for 110 hours per year as recommended by the National Curriculum Framework (NCF).

EXHIBIT 15: SCHOOL ARCHETYPES



To translate into practice, grade-level planning must be structured, allowing exposure to deepen as learners progress.

In the middle school years, from Grades 6 to 8, the emphasis must be on building a common foundation. General Employability and Entrepreneurship Skills can be introduced as a distinct subject, complemented by structured exposure to different vocations. This exposure may include project-based learning, local industry visits, and basic school-based labs, with relevant employability modules also woven into core academic subjects (e.g., financial literacy within mathematics). At this stage, the objective is acquisition of a set of important workplace skills, familiarity and confidence, not early specialisation.

In Grades 9 and 10, this foundation can be strengthened through differentiated pathways. While GEES continues for all students, selected large secondary schools may offer Kaushal Tracks, under which students can opt for one dedicated vocational subject in a trade of their choice, delivered through approximately 150 hours of instruction and recognised as a full subject within the Grade 10 board schema. Students can continue to study core subjects required for the Grade 10 Board examinations, while also having access to choose alternate subject options such as functional mathematics or business English.

In the senior secondary stage, from Grades 11 to 12, pathways can become more focused while retaining optionality. GEES is expected to continue

for all students, reinforcing the importance and need for transferable skills. Students enrolled in vocational integrated schools or large vocational schools (industry-sponsored) can specialise in a single trade, with vocational subjects accounting for up to three out of six courses, as provided for under the National Curriculum Framework (NCF), supported by dedicated labs and short

workplace projects. States should actively adopt this provision to ensure adequate depth and rigour in vocational skill development at the senior secondary stage. Transitions from academic tracks remain available, and students from schools not offering in-depth vocation retain the ability to shift into vocational pathways at this stage or continue along an academic route.

EXHIBIT 16: POTENTIAL MODELS FOR SKILLS INTEGRATION IN SCHOOLS

Comprehensive view of Skills Integration in Schools

	Grade 6-8	Grade 9-10	Grade 11-12
 Model	- GEES for all - integrated in subjects and as standalone modules - Vocational exposure via projects, classroom, and experiential learning	- Opportunity to explore 2 vocations more deeply - (1 in Grade 9, 1 in Grade 10) - GEES for all	- Study of 1 vocation in-depth (at least 50% of dedicated learning time each year) - GEES for all
 What will this need	Ideally a multi-skill lab (NCF recommended); but can be delivered without it too	Needs 2 trade labs (shared across grades 9 to 12)	- Needs 2 trade labs - Requires delivery infrastructure for alternate subjects (Functional English, Basic Math, etc.) for vocational students
 Feasibility	Feasible in all schools - GEES doesn't need labs - Vocational exposure better done with multi-skill labs but some parts are possible without	- Only feasible in ~30% schools with scale to offer 2 trades. Hence, alternate models also needed - - Alternate Model 1: Set up Multi-skill lab and give exposure to basic forms of work i.e. 6 vocations over 2 yrs. as per NCF. Another 20% schools may be able to offer this. - Alternative Model 2: Do GEES only in all remaining schools	Feasible only in large schools (~30%) due to operational constraints
 NCF alignment	Yes; 110 hrs/yr of vocation learning time sufficient to cover both GEES + vocational exposure across forms of work	No; although if alternate model 1 undertaken in ~20% schools – it aligns with NCF	Broadly Yes – NCF allows for pursuing up to 3/6 subjects towards vocational (doesn't prescribe min)

Across Grades 9 to 12, dedicated industry-sponsored vocational schools can be planned at the district or block level, with residential facilities where required and strong industry partnerships. Crucially, the system must allow students to move across GEES-only schools, vocational integrated

schools, and dedicated vocational schools based on interest, readiness, and progression, rather than locking choices in early. This flexibility is central to making early skills integration both inclusive and outcome-oriented.



Germany's Model:

Students are assigned to one out of 3 schools from grade 6: Realschule (academic focus), Hauptschule (vocational focus) and Gymnasium (integrated) with mobility enabled through transition years and exams. At the upper secondary level, the dual apprenticeship system becomes the core pathway, blending employer contracts with part-time learning.



Guidelines to Implement the Core Reform

This bet can be enabled by addressing certain action areas and initiatives:

Cohorts

Action Plan



Grades 6–8

- **Introduce General Employability & Entrepreneurship Skills (GEES) as a separate subject from Grade 6**, continuing through Grade 12 (to cover communication, business/functional English, digital basics, financial literacy, teamwork, problem solving, entrepreneurship etc.); these can also qualify for NSQF-aligned nano/micro credentials provided necessary occupation standards are met.
- Provide **structured exposure to vocations through projects, local industry visits, and school-based vocational labs** where available (aligned to NCF's recommendation on 3 forms of work: field, craft, service)
- Integrate relevant GEES into core subjects where relevant, e.g., financial literacy modules within Mathematics, business communication within English



Grades 9–10

- **Offer GEES as a separate subject**, with selected modules integrated into English/Math
- Convert large secondary schools (enrolment cutoff to be contextualised to State) into Vocational Integrated Schools offering:
 - 1-2 trades with required labs
 - ~110 hours/trade across Grades 9–10 (1 subject equivalent)
 - Academic track: English, Math, Science, Social Science + second language
 - Vocational track: English, Math, Science, Social Science + 1 vocational subject
- Allow students from GEES-only schools to shift to Vocational Integrated Schools in Grade 9
- **Revise Board subject schema in Grades 10 & 12 to include vocational subjects with equal weightage**; State board to accept the revised schema for board certification in grade 10

Cohorts



Grades 11–12

Action Plan

- **Continue GEES as a separate subject** for all in Grades 11–12
- Students in Vocational Integrated Schools can study one trade in depth:
 - ~50% curriculum dedicated to vocational subjects (≈ 3 subjects) with required labs and short workplace projects
 - Remaining ~3 subjects customised for the vocational track (e.g., Functional English, Technology in Everyday Life)
- Academic tracks remain available (arts/commerce/science) within Vocational Integrated Schools
- Students in GEES-only schools can shift to Vocational Integrated Schools in Grade 11
- **Revise Board subject schema in Grades 10 & 12 to include vocational subjects with equal weightage**; State board to accept the revised schema for board certification in Grade 12



Across Grades 6–12

- **Establish dedicated Vocational Schools per district/block which offer only vocational streams from Grade 9 onwards** - teaching 4–6 trades, with residential facilities where needed, and relevant industry anchor partners. Students can have the flexibility to move back to GEES only or vocational integrated schools in Grade 11
- **Set-up equivalence pathways leveraging NCeF to ensure smooth mobility between vocational, ITI, and academic routes**; also ensure vocational track students' eligibility for entry into relevant higher education pathways (e.g. BA, BBA, BSc Agri for Agri trades)
- Issue NSQF-level certificates for vocational courses (Grade 6+) via Sector Skill Councils
- **Create a contractual cadre for vocational teachers with market-linked pay** (e.g., IT trade vs. beauty trade teachers may require different salaries)

Core Reform 2 Viable PPP/PSE Models in Technical and Higher Ed

India's higher and technical education system faces a fundamental disconnect between what is taught and what the labour market demands. Curricula in most institutions remain outdated and misaligned with evolving industry needs, resulting in degrees, diplomas and certificates that do not consistently translate into employability. This is starkly reflected in the Economic Survey 2024–25, which notes that only 8.25% of graduates are employed in roles aligned to their qualifications⁴⁰. Educated unemployment is also high: 13% of all graduates and 20.4% of graduate women are unemployed,

far above the national unemployment rate of 3.2%⁴¹. Compounding this is the overwhelming inclination toward generic degree programmes with weak job linkages. Of the 3.4 crore students enrolled in undergraduate programmes, 1.13 crore are in B.A. alone, and combined enrolment in B.A., B.Sc., and B.Com exceeds 2 crore⁴². Many pursue these degrees primarily to remain eligible for government job, with 1.86 crore applications for just 55,000 posts between November 2024 to July 2025.⁴³

This structural imbalance (across degree colleges,

40. Ministry of Finance, Department of Economic Affairs, Government of India. (2025). *Economic Survey 2024–25*, accessed in Nov 2025

41. Ministry of Statistics and Programme Implementation, Government of India. (2024). *Periodic Labour Force Survey (PLFS) 2023–24*, accessed in Nov 2025.

42. Government of India, Ministry of Education, Department of Higher Education. (2021–2022). *All India survey on higher education 2021–22*, accessed in Nov 2025.

43. Press Information Bureau, Government of India. (2025, July 9). *Big recruitment push: Railways gives 9,000 jobs in Q1; plans 50,000 for FY 2025–26* [Press release], accessed in Nov 2025.

ITIs, and polytechnic) underscores the urgency of reimagining higher education through stronger industry participation and Public-Private Partnership (PPP) models. These partnerships are critical to modernising curricula, embedding job-linked learning, and ensuring that skilling remains current, relevant, and connected to real employment outcomes.

Addressing these needs will require structural shifts in how higher and technical education programmes are designed and delivered. First, there is a need to **move beyond generic degree pathways towards specialised, job-linked programmes**, particularly within high-enrolment degrees such as B.A., B.Sc., and B.Com., through applied specialisations (e.g., B.A. Hospitality, B.Com. Analytics, B.Sc. Applied Technology) that are closely aligned with industry demand. Secondly, work-integrated and apprenticeship-

embedded degree programmes (AEDP) need to be scaled significantly. While **frameworks such as AEDP have gained a starting point, adoption remains limited relative to the size of the higher education system, constraining the ability of students to graduate with demonstrable work experience**. Lastly, the system requires more flexible delivery formats, including modular, part-time, hybrid, and earn-while-you-learn models, to enable students to combine learning with work.

Delivering these shifts requires more structured industry participation than is currently embedded within most public higher education institutions. Accordingly, focus is to **drive industry-led skilling through Public-Private Partnership (PPP) models** and broader private sector engagement, enabling programmes that are outcome-linked, industry-integrated, and modular by design.



Progress to date on setting up Viable PPP/PSE Models in Technical and Higher Education

The National Education Policy (NEP) 2020 lays down a clear pathway to address these gaps. It envisions a multidisciplinary, flexible, and vocationally integrated higher education system, emphasising multiple entry and exit options and credit portability through the Academic Bank of Credits (ABC). It calls for the integration of vocational education into all higher education institutions by 2030⁴⁴. Complementing this, the University Grants Commission's (UGC) guidelines and the NCrF allow skill-based and experiential learning to be credited within degree requirements, with Skill Universities permitted to allocate a higher share of skill credits⁴⁵. To further strengthen this, Apprenticeship Embedded Degree Programmes (AEDP) notified by All India Council for Technical Education (AICTE) are expected to enable higher education institutions to embed apprenticeships and on-the-job training within degree structures⁴⁶. More recently, the Pradhan Mantri Skilling and Employability Transformation Through Upgraded ITIs (PM-SETU) is designed to significantly strengthen India's vocational training ecosystem. This includes the upgradation of 1,000 ITIs through a Hub-and-Spoke model, along with capacity augmentation of NSTIs and the establishment of National Centres of Excellence⁴⁷.

These reforms can be undertaken through multiple, complementary modes of Public-Private Partnership (PPP) and private sector engagement. These could include (i) the establishment of dedicated PPP skilling institutes or universities (greenfield) that are fully focused on outcome-

linked (tailored to sectors and regions), industry-integrated, and modular degree and diploma programmes such as the World Skill Center, Odisha, an industry-oriented institution anchored by the State Government; (ii) the creation of PPP skilling hubs within existing universities

44. Ministry of Education, Government of India. (2020). *National Education Policy 2020*, accessed in Nov 2025.

45. University Grants Commission. (2024). *Guidelines for the introduction of skill-based courses and micro-credentials in higher educational institutions (HEIs) and SOP for implementation*, accessed in Nov 2025.

46. All India Council for Technical Education. (n.d.). *AICTE guidelines for Apprenticeship Embedded Degree/Diploma Programme (AEDP)*, accessed in Nov 2025.

47. Ministry of Skill Development and Entrepreneurship, Government of India. (n.d.). *PM Setu*, accessed in Nov 2025.

or colleges, set up as stand-alone centres on public campuses to deliver industry-linked, apprenticeship-enabled, or work-integrated programmes; and (iii) PPP-led reform of existing universities and colleges (brownfield) through partnerships with industry anchors to redesign academic offerings, course structures, curricula, and delivery models.

Within this broader PPP landscape, skilling hubs can serve as key delivery mechanism, bringing industry participation directly into campuses. These hubs will enable anchor labs, practitioner-led faculty models, credited

internships and apprenticeships, and live industry projects to be delivered at scale through shared infrastructure. In Technical and Vocational Education and Training (TVET), ITIs and polytechnics can be strengthened through sustainable PPP arrangements that provide greater academic and administrative autonomy aligned to local industry demand, supported by transparent governance and outcome-linked financing. Initiatives such as PM-SETU mark an initial step in this direction and provide a foundation for scaling hub-based models across institutions.

EXHIBIT 17: SKILLING HUBS

CONCEPT

Potential PPP models (illustration of possible PPP/PSE models)

Selected schools/colleges/ITIs partner with anchor companies to deliver job-ready modules on campus, with employer-provided labs/equipment; hubs open access to nearby institutions



Dedicated Vocational centres of excellence

built on viable PPP models across the education spectrum – Dedicated Vocational Schools, ITIs etc.



Employer-designed, on-campus upskilling

Industry partners like Genpact collaborate with HEIs to set up labs, provide tools, train faculty, and deliver job skills for fresher roles aligned with their hiring-pipeline demand.”



Scale up of learn while you earn programmes

(e.g., Apprenticeship Embedded Degree Programme (AEDP) – to integrate workplace skills and practice into school, certificate and degree programmes



Clear articulation of PPP archetypes and governance

Academic autonomy (course mix, trade diversification), administrative autonomy (faculty, procurement), and governance models/reforms (capex/opex balance, fee regulation)



Requires operationalisation of NCeF

to enable multiple academic pathways (e.g., Assam equalising ITI to 12th)

These models can be complemented by broader private sector engagement through work-integrated degree programmes and apprenticeship-embedded pathways within existing frameworks. A pertinent example is the BITS Pilani and HCL TechBee Programme. Through this partnership, BITS Pilani and HCLTech jointly deliver work-integrated degree programmes that combine part-time employment with formal academic study.

The programmes are aligned with HCLTech’s technical competency requirements and include undergraduate and postgraduate offerings in areas such as design and computing. Instruction is delivered at HCLTech campuses and online, with programme costs partially supported by the employer, demonstrating how industry-aligned delivery models can strengthen employability while reducing financial burden for learners⁴⁸.

48. Birla Institute of Technology and Science, Pilani, & HCL Technologies. (n.d.). *HCL TechBee Programme*, accessed in Nov 2025.

EXHIBIT 18: WORK INTEGRATED DEGREE PROGRAMMES

CONCEPT

Work-integrated degree programmes: Flexible, modular and industry linked

Higher education redesigned to allow flexible, modular progression, where students build academic foundations and gain industry exposure in parallel. Multiple pathways ensure recognition and reward at every stage of completion



Scale up work - integrated degree programmes

University-led (blend of classroom and practical learning with university as anchor) or industry-led (predominantly work-based learning with targeted academic inputs, e.g., HCL Tech BEE, Dr. Reddy's)



Flexible progression with recognition

Students earn stackable credentials (e.g., Year 1 certificate, Year 2 diploma, Year 3 degree, Year 4 honors degree)



Credits for work experience

Apprenticeships, internships, or job experience count toward degree completion, backed by industry-led assessments

Illustrative pathways after year 2 (enabled via NCrF) :

01

Continue Academic Track
complete regular degree

02

Exit/Transfer Credits
leave with a diploma (if credits completed) or transfer credits via NCrF to ITIs/polytechnics for certificates/diplomas

03

Work-Integrated Degree
complete credits via industry exposure (internships/apprenticeships)

04

Applied Specialisations
pursue job-linked Specialisation (e.g., BCom with Digital Marketing, BA Retail, BSc Data Analytics) for stronger job outcomes

To ensure long-term impact, these delivery models must be supported by system-wide reforms that operationalise the NCrF and enable modular, stackable, multi-entry and multi-exit pathways. Clear documentation, recognised credentials, and access to qualified counselling

are essential to help learners navigate choices and transitions. Together, these shifts are necessary to move higher and technical education towards consistent alignment with labour market demand and sustained skilling outcomes.

Guidelines to Implement the Core Reform

Cohorts



Higher Education (Degree Programmes)

Action Plan

Undertake PPP-led reform in higher education through multiple models:

- o **Dedicated PPP Skilling Institutes or Universities** (greenfield): New institutions set up under PPPs, fully focused on outcome-linked, industry-integrated and modular degree/diploma programmes
- o **PPP Skilling Hubs within existing universities/colleges:** Stand-alone centres within existing campuses that deliver industry-linked, apprenticeship-enabled/work-integrated programmes
- o **University/college reform through PPP adoption** (brownfield): Partner with industry anchors to revamp academic offerings, course structures, deliver, etc.
- o **Softer PSE (private sector engagement)** for skills integration and delivery across programmes

Across all above models, the following actions will need to be undertaken:

- o **Academic & curricular reform**
 - Offer work-integrated, industry-aligned programmes (e.g., apprenticeship-enabled or co-created degrees) through existing frameworks like WIDP/AEDP
 - Integrate GEES as credit-bearing courses across all programmes to embed employability and entrepreneurship skills
 - Introduce job-linked specialisation tracks (e.g., retail, banking, financial and insurance (BFSI), digital marketing within B.A/ B.Com) delivered jointly with industry
- o **Industry engagement & delivery partnership**
 - Establish anchor labs and adjunct/practitioner faculty models
 - Integrate internship/apprenticeship pathways and live projects as credited components
- o **Anchor PPP universities in regional economic clusters**
 - Encourage and plan for regional specialisation within hubs (e.g., logistics, green tech, agri-innovation) linked to local economic priorities
 - Establish incubation and entrepreneurship cells in select PPP institutions, offering bootcamps and mentorship aligned to local industry clusters



Technical and Vocational Education and Training (ITIs and Polytechnics)

Adopt ITI/PTs through industry partnerships under a sustainable PPP model

- o **Academic autonomy:** Allow flexibility in course mix and trade offerings based on local industry needs; enable curriculum updates in partnership with industries
- o **Administrative autonomy:** Permit contract-based hiring of trainers and simplified procurement for tools, machinery, and consumables
- o **Governance and financing:** Define ownership and accountability frameworks, industry partner eligibility, and viability gap funding (VGF) principles with funding linked to outcomes

Cohorts



Technical and Vocational Education and Training (ITIs and Polytechnics)

Action Plan

Across all ITIs, PPP or otherwise:

- o **Strengthen apprenticeship exit pathways** (covered in detail in 'Apprenticeships for all')
- o **Introduce dual certification options** (industry-recognised + education board-recognised) to formalise equivalence with other degree courses
- o Create academic progression pathways and bridge modules to polytechnics or higher education and schools (e.g., NIOS, through an MoU with DGT, grants academic equivalence to ITI qualifications by offering Transfer of Credit, enabling ITI pass-outs to earn Class 10 or 12 certification by passing only one or two additional subjects, respectively) through credit transfer via NCrF, with equivalence/additional exam needs defined by trade/course
- o Embed General Employability and Entrepreneurship Skills (GEES) modules – in the curricula as well as Bridge programmes
- o **Rationalise course offerings to align with demand, phase down redundant trades;** Drive curriculum revamp and faculty upskilling through industry collaboration/broader private sector engagement



Broader reforms across technical /higher ed

- o **Operationalise NCrF to enable modular and stackable pathways** with multi- entry/multi-exit
- o **Ensure outcome transparency** by publishing completion, placement, and salary results jointly with institutions (via a National Career Outcome Repository)
- o **Issue detailed SoPs for NCrF implementation** with clear timelines (and accompanying penalties) to the leadership of all institutions; set up a command- and-control centre to support during transition
- o Ensure one qualified counsellor per institution (direct recruitments in the long run; Civil Society Organisation (CSO) support in the interim)



Indonesia:

Indonesia's Link & Match 8+i (MoECRT, 2020) framework mandates deep collaboration between industry and vocational institutions through joint curriculum design, industry faculty participation, mandatory internships, project-based learning and industry-aligned certification. Since its launch, more than 5,000 formal agreements have been signed between industry and schools, making it the backbone of industry-institution partnerships.



Core Reform 3 Outcome-Linked, Industry-Backed Programmes

A core limitation of many existing skilling programmes is weak outcome orientation. Programmes often prioritise enrolment and completion over placement, progression, or income outcomes, while delivery formats remain inflexible and poorly aligned to the needs of different learner segments. As a result, pathways into in-demand jobs remain weak,

and participation remains limited. For example, 82% NEETs report one foundational gap in existing skilling programmes - job interview preparation modules and placement tie-ups⁴⁹. In the absence of clear outcome signals, many individuals hesitate to engage, uncertain about which skilling pathways will lead to tangible returns.

49. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; Immersion interviews conducted by BCG team, accessed in Nov 2025.



Progress to date on promoting outcome-linked, standalone programmes

Recognising this need, the government has introduced a range of short-term programmes of varying durations offered under various Central and State Schemes. While these have expanded access, many face persistent challenges around quality, consistency, and weak employer integration. Some progress has been made to formalise short-term skilling for instance, UGC guidelines now enable credit-bearing, industry-aligned short courses, including through platforms like Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM)⁵⁰. The Recognition of Prior Learning (RPL) framework has also been introduced to validate existing skills and integrate them into formal certification pathways⁵¹. The National Credit Framework (NCrF) further recognises modular and online learning, allowing learners to stack credits from diverse skilling formats⁵². However, significant gaps remain in ensuring relevance, rigour, and outcomes at scale.

Going forward, standalone skilling programmes need to shift decisively from top-down, supply-driven offerings to demand-driven, outcome-linked and industry-backed models. In this context, three priority areas emerge for such programmes: (i) industry-led skilling for high-growth national and regional sectors requiring rapid workforce expansion, such as the green economy (including rooftop solar and electric mobility) and the semiconductor ecosystem; (ii) general employability and entrepreneurship

skilling at scale, covering digital literacy, financial literacy, workplace readiness, and business planning, which cut across sectors and remain relevant for both students and the workforce; and (iii) strategic reskilling for sectors and roles facing structural decline or technological disruption, such as segments of mining or traditional automotive manufacturing, where skilling interventions may need to be complemented with transitional income or unemployment support to enable successful redeployment.

EXHIBIT 19: FLAGSHIP STANDALONE SKILLING PROGRAMMES

CONCEPT

Flagship standalone skilling programmes

Nano/micro/short-term credentials for priority sectors



Focus on national priority sectors

Digital, green energy, healthcare (which includes childcare, geriatric care, etc), and manufacturing, where demand for skilled workers is rapidly expanding



Go beyond entry-level skilling (higher level NSQF job roles)

Structured offerings for upskilling and reskilling at different career stages, enabling continuous employability



Launch industry-first programmes

Programmes co-created with industry to ensure relevance, credibility, and adoption



Anchor success on clear outcomes

Requires strong linkages to employers to guarantee placements, retention, wage growth, and career progression pathway



Promote flexible, short formats (Mobile skilling & Women's caregiving responsibilities)

Accessible to workers (esp. women) without requiring long breaks from earning

50. University Grants Commission. (2024). *Guidelines for the introduction of skill-based courses and micro-credentials in higher educational institutions (HEIs) and SOP for implementation*, accessed in Nov 2025.

51. Press Information Bureau, Government of India. (2025). *A decade of building skills & empowering dreams: 10 years of Pradhan Mantri Kaushal Vikas Yojana*, accessed in Nov 2025.

52. University Grants Commission. (2023). *Report of National Credit Framework*, accessed in Nov 2025.

Across all standalone programmes, stronger linkage to outcomes is essential. Learners must either be placed in jobs or supported towards viable self-employment opportunities. This requires robust performance management systems and funding mechanisms linked to verified outcomes, such as job placements or wage gains. These programmes should be delivered, to the extent possible, by leveraging existing public infrastructure such as ITIs, polytechnics, and colleges to expand reach while improving utilisation of public infrastructure rather than relying solely on stand-alone short-term training providers. In addition, learner choice can be strengthened through appropriate skill-

voucher models that enable individuals to select programmes aligned with their goals.

★ **Singapore:** SkillsFuture is a national movement launched in 2015 to empower Singaporeans to continually update and deepen their skills throughout their lifetimes, regardless of background. It offers flexible employer-linked training pathways, subsidised courses and career guidance, making lifelong learning accessible and aligned to evolving labour market needs.

Guidelines to Implement the Core Reform

Core Reform



Outcome-linked industry-backed programmes

Action Plan

Launch targeted Flagship Standalone Skilling programmes offering nano, micro, and short-term credentials for priority sectors and segments:

- **Courses offered only in national and state priority sectors** (e.g., digital, green energy, manufacturing, healthcare)
- Include dedicated tracks for specific learner segments, e.g., self-employment pathways for women (beauty, tailoring, food services)
- Courses can be **delivered through existing infrastructure** - ITIs, polytechnics, colleges – or through private providers meeting minimum infrastructure and trainer standards
- **Payment models can be linked to verified outcomes** such as placements, wage progression etc. including through pre-defined Recruit-Train-Deploy (RTD) type models where appropriate
- Include flexible, modular formats (evening/weekend, hybrid, part-time) for workers and women with time or mobility constraints
- Fund learner choice by building the right Skills Voucher Model to guide States/UTs



Apprenticeships represent one of the most direct pathways to bridge learning and work.

India's policy framework has recognised these constraints and introduced targeted initiatives to improve access, quality, and scale of apprenticeships. Schemes such as the National Apprenticeship Training Scheme (NATS) and the National Apprenticeship Promotion Scheme (NAPS) provide structured, on-the-job

training across sectors, supported by stipend reimbursement and industry-aligned curricula. Digital platforms such as the Apprenticeship India Portal and the AICTE National Internship Portal have been established to support matching, verification, and system operations.



Overview of select apprenticeship-related programmes in India

The NATS provides technically qualified youth, including graduates and diploma holders, with 6 to 12 months of on-the-job training supported by government stipends, culminating in a Certificate of Proficiency⁵³. In FY 2024–25 alone, the scheme enrolled over 5.23 lakh apprentices⁵⁴.

Complementing this, the National Apprenticeship Promotion Scheme (NAPS-2) under Skill India aims to broaden access and inclusivity across traditional and emerging sectors. The scheme offers structured, paid apprenticeships with direct stipend support to trainees, while enabling industry collaboration through Designated and Optional Trades⁵⁵ to maintain curriculum relevance. In the calendar year 2025, apprentices engaged under NAPS and NATS are 11.84 lakh and 5.23 lakh respectively⁵⁶.



Overview of select internship programmes in India

The Prime Minister's Internship Scheme offers one crore youth internship opportunities in top 500 companies over five years. It enables interns to gain 12 months of hands-on experience in real business environments, bridging the gap between academic learning and industry requirements to enhance employability⁵⁷.

Despite the presence of multiple apprenticeship and internship initiatives, participation remains uneven and concentrated among a limited set of employers. Engagement from Micro, Small and Medium Enterprises (MSMEs) is particularly low – only ~32K out of ~60 million registered MSMEs had engaged apprentices under NAPS⁵⁸. At the same time, awareness of credible and

high-quality apprenticeships remains limited, leaving many learners uncertain about how to access meaningful workplace experience. As an outcome, only 8.5% of ITI trainees in 2018 took up apprenticeships⁵⁹. These access and visibility gaps have direct consequences. 80% of learners cite the lack of practical experience and industry exposure as a major gap in their degrees,

53. Ministry of Education, Government of India. (n.d.). *National Apprenticeship Training Scheme (NATS)*, accessed in Nov 2025.

54. Ministry of Skill Development and Entrepreneurship. (2025). Central Apprenticeship Council recommends 36% Increase in Stipend for Youth under National Apprenticeship Promotion Scheme and National Apprenticeship Training Scheme. Press Information Bureau, India, accessed in Nov 2025.

55. Under the Apprentices Act, 1961, Designated Trades are trades formally notified by the Government of India for structured apprenticeship training with prescribed curricula and standards, while Optional Trades are non-notified trades or occupations that employers may define to meet specific industry or establishment requirements, accessed in Nov 2025.

56. Press Information Bureau, 11 Feb 2026.

57. Ministry of Corporate Affairs, Government of India. (n.d.). *MyScheme*, accessed in Nov 2025.

58. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, December 8). *MSMEs under NAPS* (Lok Sabha Unstarred Question No. 1245), accessed in Nov 2025.

59. *Tracer study of ITI graduates* [Report]. (2018), accessed in Nov 2025.

leaving them underprepared and unable to demonstrate job-readiness to employers⁶⁰. Within workplaces, barriers persist even when opportunities exist. Informal gatekeeping by senior workers, especially in vocational trades, restricts the transfer of advanced skills and slows progression into higher-value roles. For students and early-career learners, internships and apprenticeships are often short-term or tokenistic. As a result, work-based learning does not consistently function as a bridge between education and employment.

Access to information further compounds these challenges. Apprenticeship and internship opportunities are currently distributed across multiple platforms that operate in parallel. NAPS is implemented through the Apprenticeship India Portal under the Ministry of Skill Development and Entrepreneurship (MSDE).

NATS for graduate and diploma apprentices is hosted separately under the Ministry of Education. While each platform serves a distinct scheme and purpose, their parallel operation creates fragmented entry points for learners and employers, increasing friction and reducing visibility of genuine opportunities.

Making apprenticeships a mainstream and trusted pathway requires an integrated approach that reduces fragmentation at the point of access. A key priority is to develop a single, unified access window at the State level that brings together central and State apprenticeship programmes, in alignment with the SIDH Platform. Such a platform can provide learners and employers with clear, verified information on available roles, eligibility, and stipend norms, and significantly reduce confusion and friction.

EXHIBIT 20: STATE APPRENTICESHIP PLATFORM

CONCEPT

State Apprenticeship Platform

Single layer that unifies apprenticeship/internship schemes, brings advanced demand visibility from employers, and delivers data-led services for seekers and industry

- 01 **Single access point** Consolidates information from NAPS, NATS, and State apprenticeship programmes so learners and employers use one window instead of many portals for information in alignment with SIDH
- 02 **Advance demand plans** Large corporates submit apprenticeship inventory 6 months in advance, creating predictability for states, institutions, and jobseekers
- 03 **Better matching** Standardised information on roles, locations, stipends, and seats improves discovery and matching
- 04 **Data dashboards** Value-added insights (e.g., average stipends by sector, conversion rates to jobs, demand heatmaps) to guide both learners and employers

The screenshot shows the 'Bharat Apprenticeship Platform' interface. It has a sidebar with 'Home', 'My Dashboard', and 'Sign Out'. The main content area is titled 'Apprenticeships available in next 3 months' and includes filters for 'District: Chennai', 'Sector: Semiconductor', and 'Date Range: Next 3 months'. Below the filters is a table with columns: Scheme, Employer, Positions, Stipend, Start Date, and More Details. The table lists five opportunities, alternating between NAPS and NATS schemes.

Scheme	Employer	Positions	Stipend	Start Date	More Details
NAPS	Infineon India Pvt. Ltd. -Chennai	20	₹18,000 / month	1-Oct-25	View details
NATS	ITHubResearch Park -FabLab Chennai	12	₹22,000 / month	15-Oct-25	View details
NAPS	Tata Electronics, Hosur (Chennai Region)	50	₹21,000 / month	20-Oct-25	View details
NATS	Micron India, Oragadam (Chennai)	25	₹20,000 / month	5-Dec-25	View details
NATS	Micron India, Oragadam (Chennai)	25	₹20,000 / month	5-Dec-25	View details

A second intervention lies in using apprenticeship demand-side data to strengthen planning and alignment. As apprenticeship demand data reaches sufficient scale and coverage, aggregated information on roles, qualifications, locations, and stipend levels can enable States to identify priority sectors and occupations, align training capacity accordingly, and expand apprenticeship-linked degree and diploma pathways. Improved visibility

into demand can also strengthen conversion, by enabling better matching between candidates and available apprenticeship opportunities. Over time, this improves both relevance and scale.

Third, participation must be broadened, particularly among MSMEs, where onboarding costs and administrative burden remain barriers. Differentiated incentives can help offset these

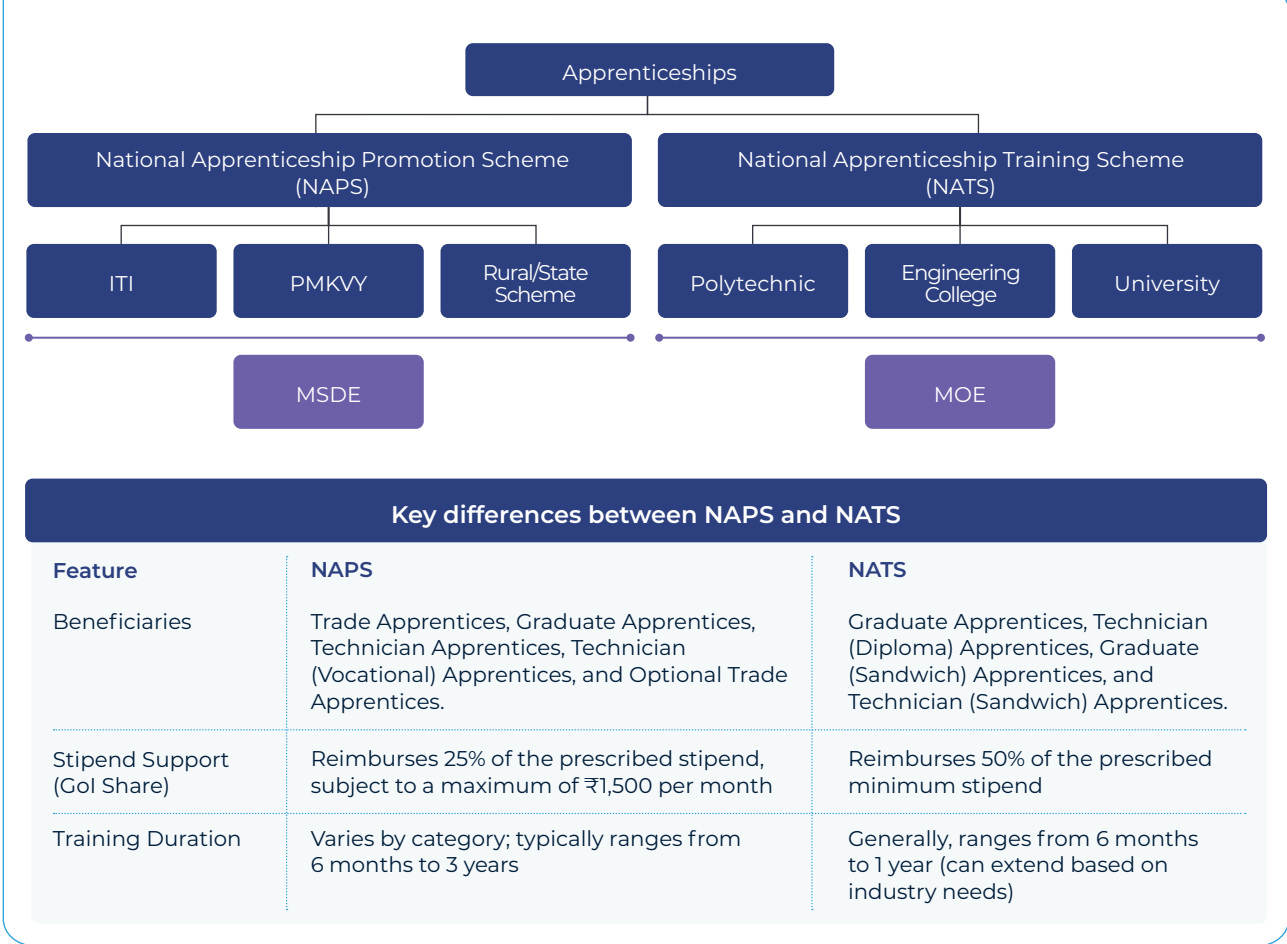
60. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March). *The state of skills survey 2024*. Ministry of Skill Development and Entrepreneurship; Government of India, Ministry of Education, Department of Higher Education. (n.d.). *Metadata for All India Survey on Higher Education (AISHE)*. Statistics Division, Department of Higher Education; BCG. Qualitative Learner Study 2025.

costs and make apprenticeship participation more viable for smaller employers. Complementing this, innovative financing and performance-linked mechanisms, such as Apprenticeship Impact Bonds, can support outcome-based approaches that improve learner retention and completion.

Finally, these shifts do not require building entirely new systems. Existing State or national

platforms can be leveraged as nodal State Apprenticeship Platforms, enabling convergence without duplication. By standardising role taxonomy, eligibility criteria, and stipend bands, such platforms can serve as a common interface for apprenticeships while remaining adaptable to local contexts.

EXHIBIT 21: OVERVIEW OF APPRENTICESHIP SCHEMES IN INDIA





Australia: Australia offers multi-year apprenticeships, shorter traineeships and school-based apprenticeships that let senior secondary students work, train and complete school simultaneously. These pathways are supported by substantial hiring incentives, wage subsidies and apprentice support payments, including up to 15,000 dollars for priority roles.



Guidelines to Implement the Core Reform

Core Reform



Apprenticeship for All

Action Plan

Launch the State Apprenticeship Platform (SAP) as a unified national layer integrating all apprenticeship and internship schemes - NAPS, NATS, and State programmes

- Create a single access window for learners and employers, consolidating verified postings, common role taxonomy, eligibility, and stipend bands
- Streamline parallel schemes (designated trade, optional trade, State apprenticeships, and internships) to improve discoverability, reduce duplication, and ensure consistency in quality and tracking
- Build advanced demand analytics within SAP to forecast seat availability 6–12 months by sector and district, and align training supply across institutions

Encourage wider industry and MSME participation through targeted reforms and incentive mechanisms

- Introduce innovative funding and performance-linked models, such as an Apprenticeship Impact Bond, to support stipends, mentoring costs, and capacity creation in MSMEs
- Provide enhanced financial incentives (e.g., additional stipend support from government) and simplified contracting processes to make participation viable for micro enterprises



Gaps in awareness and access to informed counselling persist across every stage of the learning and working journey. **Learners often lack timely, trusted guidance to navigate education, skilling, and career pathways, limiting their ability to make informed decisions at entry points and during transitions.** As work patterns evolve and individuals move between formal and informal roles, the need for guidance becomes continuous rather than episodic. For women in particular, social norms, safety concerns, and restricted access to trusted networks further heighten the importance of safe, credible spaces for guidance.

Addressing these gaps requires moving to a multi-layered guidance system that operates across the life course. Four elements are critical: institutionalised counselling within schools and colleges (including engagement with parents); community-based guidance structures for the workforce and those outside formal education; dedicated, safe, and inclusive guidance mechanisms for women and other priority groups; and broader perception-building efforts that reshape how skilling pathways are valued.

India's policy landscape has begun laying the groundwork to strengthen career awareness and guidance across the education-to-employment pathway. The National Education Policy (NEP) 2020 emphasises the importance of structured career guidance and counselling from the middle-school years onward, encouraging schools to help students make informed choices through exposure to diverse pathways⁶¹. In support of this vision, the Ministry of Education (Department of School Education and Literacy), in collaboration with National Council of Educational Research and Training

(NCERT) and United Nations Children's Fund (UNICEF) India, has released career guidance resources designed to aid teachers and counsellors in facilitating early and informed exploration of career options⁶².

These policies find precedence in initiatives such as the National Career Service (NCS); a 2015 initiative under the Ministry of Labour and Employment. NCS connects jobseekers with employers, training providers and counselling services, and offers access to career information and guidance through a centralised digital platform⁶³. Moreover, since 2015, the Skill India Mission has also conducted awareness initiatives, such as Kaushal Melas and World Youth Skills Day engagements, to enhance the visibility and perception of vocational training⁶⁴.

To make guidance a reliable and trusted



National Career Service (NCS) is a Government of India digital platform that helps individuals find jobs, explore career options, and access counselling and skilling opportunities through a single portal.

function of the skilling ecosystem, delivery must move beyond isolated touchpoints to a multi-channel, continuous support model. The first intervention is to **institutionalise guidance within schools and colleges** through structured pathway clinics. These clinics can provide qualified counselling for both students and parents, ensuring that early academic and skilling choices are informed, contextual, and aligned with evolving opportunities.

61. Ministry of Education, Government of India. (2020). *National Education Policy 2020*, accessed in Nov 2025.

62. Department of School Education & Literacy, Ministry of Education, Government of India. (n.d.). *Careers*, accessed in Nov 2025.

63. National Career Service, Ministry of Labour and Employment. (n.d.). *About us*, accessed in Nov 2025.

64. Ministry of Skill Development and Entrepreneurship, Government of India. (n.d.). *Skill India: Pradhan Mantri Kaushal Vikas Yojana*, accessed in Nov 2025.

CONCEPT

Pathway Clinics: Counselling for early informed choices [Illustration for schools]

Structured sessions from Grade 6–12 that equip parents and students with trusted, outcomes-based guidance on education and skilling pathways

Delivery Model (states/schools may adopt components as relevant)

	 Teacher-led touchpoints	 Counsellor-led touchpoints	 Focus areas
Grade 6–7	2 sessions/year : 1 classroom session (students only), 1 combined session (students + parents)	Optional, case-by-case basis	Introduce broad pathways (ITI, vocational tracks, apprenticeships), bust myths, aspiration building
Grade 8	3 sessions/year : 2 classroom sessions (students only), 1 workshop (students + parents)	1 clinic/year : group session with students	Prepare for upcoming Grade 9 decisions ; share real career outcomes ; explain options beyond academics
Grade 9–10	6 sessions/year : 4 classroom sessions (students only), 2 pathway session (students + parents)	3 clinics/year : 2 student-only (career mapping), 1 with students + parents (next-steps counselling)	Preparing for board exams and next pathways (Diploma, senior secondary)
Grade 11–12	6 sessions/year : 4 classroom sessions (students only), 2 financial/career session (students + parents)	4 clinics/year : 2 student-only (career mapping), 2 with students + parents (degrees, diplomas, jobs)	Course outcomes for higher ed , apprenticeships, direct placement pathways after 12th

Additionally augmented by year-round digital access to guidance resources and on-demand 1-1 sessions

01 Teacher-first delivery, counsellor for critical junctures: Train teachers (school level) and use block-level counsellors for fewer, deeper sessions at decision points	02 Defined cadence by grade band: Light exposure in 6–8; ramp-up just before Grade 9 stream choice; higher frequency again in 10 and 11–12 for transitions	03 Two teacher trainings/year: 2 days each at start- and mid-year to rehearse delivery toolkit and knowledge	04 Year-round parent engagement in higher grades: Meetings with concrete tools (scorecards, cost planners)	05 Light materials + dashboards: Ready-to-use lesson plans, activity sheets, outcome dashboards (fed by the career outcome repository) to compare streams/tracks
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A second intervention is to **extend guidance into communities and workplaces**, recognising that many learners and workers operate outside formal education settings. This can be achieved by establishing community-based counselling hubs within existing public infrastructure (where possible), using a mix of physical and digital formats. Facilities such as post offices, ward offices, and other government service centres can be leveraged to deliver in-person guidance for the workforce, embedding support closer to where people live and work and reducing access barriers.

At scale, digital guidance tools are proposed as a backbone to complement physical delivery. This includes building platforms such as MyGuide, a personalised, AI-enabled tool that supports learners with tailored pathways, decision checklists, and transition planning across education, skilling, and work. Complementing this, Skill Sure can be designed to help individuals identify what skills to pursue based on aptitude, labour-market demand, and expected outcomes, while Skill Scout can support discovery of where to pursue those skills by enabling comparison of training providers,

courses, delivery modes, costs, and outcomes. While elements of these capabilities are already emerging across platforms such as the Skill India Digital Hub (SIDH) and State initiatives like Naipunyam from Andhra Pradesh, there

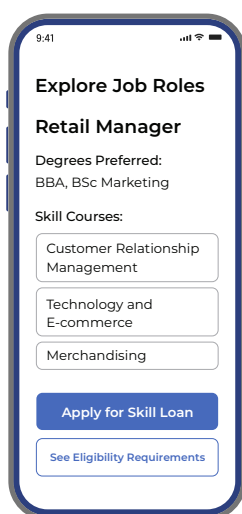
remains a need to strengthen functionality, drive awareness and adoption, and develop these as reusable digital public goods that States can adapt to local contexts. Together, these tools can strengthen informed choice and trust at scale.

EXHIBIT 23: SKILL SURE AND SKILL SCOUT

CONCEPT

Skill Sure

What to skill: Curated skill discovery platform that links learners to industry-validated courses, mapped to real job roles, with built-in financial enablement

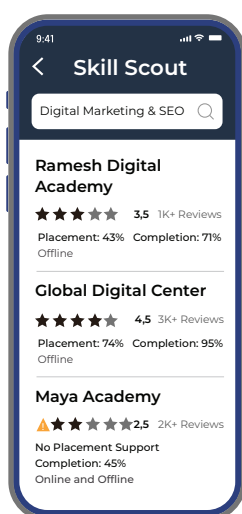


- A Verified list** of high-impact skilling courses, mapped to real job roles
- B Course endorsements** from potential recruiters or companies
- C Integration of skill vouchers**
- D Integration of model skill loans/other loans** based on academic performance and screening with flexible repayment schedules (e.g., within 1 year of employment)

CONCEPT

Skill Scout

Where to skill: Discover credible skill centres, both online and offline, with verified reviews and measurable learning outcomes



- 01 BOT-powered recommendations** AI-driven suggestions based on goals, location and learning history
- 02 Outcome tracking** Completion rates, job placements, or certification success for transparency
- 03 Peer-to-Peer feedback** Interact with past learners and get real insights before enrolling
- 04 Fast scam filtering** Smart filters and red flagging
- 05 Trusted badging system** Centres earn trust badges (e.g., "Placement Verified, Govt Certified, High Learner Retention")

For **women and other priority groups**, guidance systems require dedicated, safe, and inclusive interventions. Community-based women's circles or Sakhi Booths can strengthen peer mentoring and trusted networks, while women-

centric digital applications can enable flexible access to information and micro-learning. These interventions recognise that guidance must be adapted to life stage, safety considerations, and social context to be effective.

EXHIBIT 24: COMMUNITY WOMEN CIRCLES

CONCEPT

Community Women Circles (Sakhi Samvaad)

Mentorship networks for early guidance during school years to expose girls to aspirational role models and safe peer discussions



Implement structured mentorship programmes connecting girl students with local aspirational women through monthly meetups and workshops in collaboration with Jan Shikshan Sansthan (JSS)



Pair students with women mentors to guide career exploration and pathways



EXHIBIT 25: SAKHI BOOTHS

CONCEPT

Sakhi Booths: Hubs for women's learning & livelihoods

Trusted local spaces to provide awareness on learning and job opportunities for young and middle-aged women



Community-run information kiosks placed in high-footfall areas (e.g., Panchayat offices, ration shops, schools, e-seva hubs) to provide offline, accessible, and trusted awareness channels for women



These kiosks act as safe, walk-in spaces where women can learn about learning and local job opportunities - without the fear of judgment or digital exclusion



EXHIBIT 26: WOMEN-CENTRIC APP

CONCEPT

Women-Centric App: Trusted digital gateway for women's learning and work

Dedicated app providing safe, private access to information and microlearning resources tailored for women



One-stop information: Central access to women-focused schemes, education and skilling programmes, and women-specific job opportunities



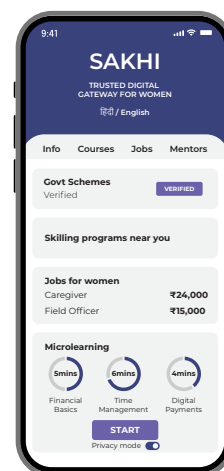
Verified content and clear navigation to reduce reliance on informal, judgment-prone networks



Microlearning modules: Short, practical videos on financial literacy, time management, digital basics, and everyday life skills to build confidence



Empowered first step: A safe digital channel that allows women to explore options discreetly and act on them with confidence



Finally, guidance interventions must be complemented with **broader perception-building efforts**. Communication initiatives such as 'Hunar Utsav' can help normalise vocational pathways, celebrate skill-based achievement, and improve visibility of credible skilling options

and outcomes. Together, these interventions position guidance and perception-building as a continuous system function, enabling informed choice, mobility, and sustained engagement across the skilling lifecycle.

EXHIBIT 27: HUNAR UTSAV

CONCEPT

Hunar Utsav: BTL¹ campaigns for skilling pride

Illustrative, priority-led interventions that States can sequence and adapt based on context



On-ground experiences: Pop-up 'Try-a-Trade' zones in schools/workplaces/ community areas where youth, parents, and workers can see and try skills linked to real jobs and earnings; meet and greet community champions



Role model showcases: Success stories from local alumni, employers, and women entrepreneurs (e.g., Drone Didi) that demonstrate career growth through skilling, to shift mindset from 'last resort' to 'choice'



Community-led channels: Campaign delivery anchored in trusted touchpoints - fairs, workplace events, community radio, WhatsApp groups, and parent-teacher forums - ensuring credibility and wide reach



Aspirational messaging: Strong, memorable campaign lines to reposition skilling as a pathway to respect and success



1. BTL (Below-the-Line) = targeted, direct-engagement marketing—activities that reach people without mass media, e.g., trade shows, in-store demos/activations, and direct mail/SMS—used to communicate more directly with specific audiences and drive response

Guidelines to Implement the Core Reform

Core Reform



Guidance and Perception Building

Action Plan

Counselling in schools:

- o Design and implement grade-wise counselling framework via Pathway clinics for students and parents
- o Ensure at least 1 qualified counsellor/10 schools (CSO support interim; direct recruitment long-term)

Counselling for the workforce:

- o Take guidance to communities at panchayat/ward level via segment specific interventions e.g., Sakhi Booths, Community women circles for women
- o Leverage existing government services centres (e.g., e-Seva Mayyam, post office, ward offices, ITIs) to deliver in-person guidance
- o Evaluate digital outreach via weekly guidance hour, phone/WhatsApp helpline where possible

At-scale digital guidance

- o Build mobile/web/WhatsApp tools like MyGuide that give personalised pathways, checklists, and nudges (e.g., RPL assessment centres nearby)
- o Enable discovery of customised/verified programmes (e.g., Skill Sure) and provider (e.g., Skill Scout) via targeted apps; searchable by location, language, and mode (full-time/part-time)

Perception Building

- o Run grassroot campaigns to build pride in skills, for e.g., via on-ground 'try-a-trade' zones and role-model showcases; campaigns such as Hunar Utsav with memorable messages (e.g., Degree nahin, hunar chahiye)



System Enablers That Can Drive a Long-Term Systemic Shift

System Enabler 1 Digital Skills Passport

Lifelong learning at scale requires more than access to courses. It requires the ability to surface the right opportunities for individuals at different stages, and to recognise learning consistently across education, skilling, and work. This calls for an integrated digital approach that can track learning over time, connect credentials to opportunities, and support mobility across pathways.

India's policy architecture reflects a clear commitment to this direction. Currently, the Skill India Digital Hub (SIDH) marks an important step towards consolidating skilling-related certifications and employment pathways within a common digital framework and provide a scalable foundation that can serve diverse learner segments⁶⁵. In parallel, several related digital public goods are already in place, including Aadhaar, the Academic Bank of Credits (ABC), the National Career Service (NCS), the Unified Payments Interface (UPI), and the APAAR ID, which provides a lifelong learner identifier to

track academic records, skills, and achievements across stages⁶⁶. While these building blocks exist, implementation remains nascent and fragmented. There is therefore a significant opportunity to leverage them synergistically to create a seamless user experience across education, skilling, and work.

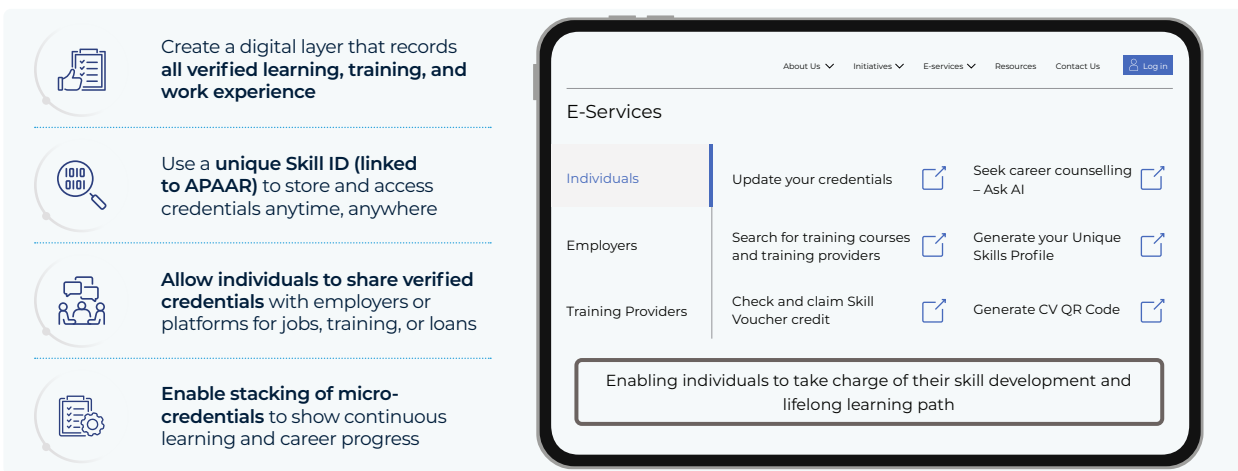
Going forward, to translate this foundation into system-wide impact, a further step is required. A single national account or Skills Passport, using the APAAR ID as a common, interoperable learner identifier, that brings together verified credentials, skills, and work experience can provide continuity across the life course. The Skills Passport can enable stackable learning records, support access to jobs, apprenticeships, and skilling opportunities, and act as the backbone for digital interventions such as job matching and flexible work discovery. For this to function effectively, robust skills registries and data exchange mechanisms at the State level are essential.

EXHIBIT 28: DIGITAL SKILLS PASSPORT

CONCEPT

'Learning Account' with Digitally Verified Credentials

Stackable, verifiable credentials for work and skills



65. Bhatnagar, A. (2025). *Digitally skilling India: Solution – The SIDH implementation journey*. National e-Governance Division, Government of India, accessed in Nov 2025.

66. Ministry of Education, Government of India. *APAAR ID*, accessed in Nov 2025.

A critical starting point for States is the development of a Skills Digital Registry and Exchange (Skills DX). This can bring together underlying datasets, including public scheme records, enrolment data, jobs data, and beneficiary lists from past programmes, to create a common base for digital use cases such as learner identification and candidate matching. Skills DX can interface with national registries such as e-Shram, Unified District

Information System for Education Plus (UDISE+), the National Career Service, apprenticeship portals, and Employees' Provident Fund Organisation (EPFO) systems, while maintaining State-specific standards. A secure technology layer is required to govern consent, access, and application programming interfaces (APIs), with private partners supporting integration and maintenance.

EXHIBIT 29: SKILL DX

CONCEPT

Non-Exhaustive

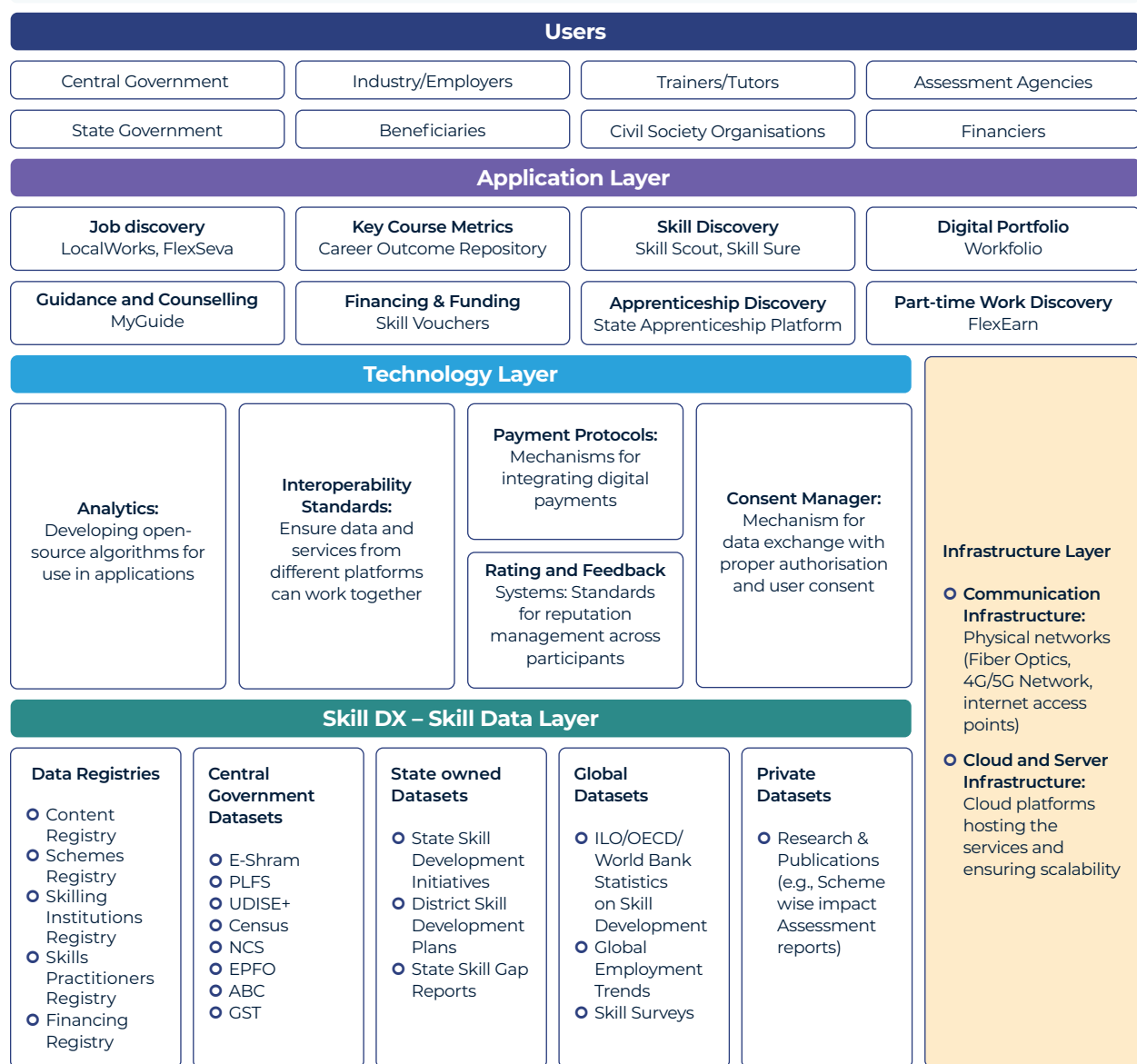
Skill DX Unlocking a data-driven skilling ecosystem

Government-built foundation: Central and State governments consolidate datasets (schemes, institutions, skills, jobs, registries) into a unified data layer

Open data endpoints: Datasets are made accessible through secure APIs on technology layer, creating a common access point

Private and industry: Companies, training providers, and start-ups can build applications on top - like SkillSure, outcome repositories etc.

User-facing solutions: Learners, workers, employers, and trainers can access simple tools powered by this stack - turning data into guidance, opportunities, and lifelong learning journeys



Even after consolidating the data sources outlined above, critical gaps will remain for building advanced applications. For instance, hyperlocal information on informal jobs at the district level may not be reliably inferred from existing systems across several districts; and will require datasets to be created and maintained from the ground up, in partnership with industry, local bodies, and intermediaries. This necessitates a multi-pronged data strategy that combines aggregation of existing registries with targeted creation of new, ground-level data pipelines.

Once the data layer is established, States, directly or by providing access to private players, can build analytical and application layers that convert data into value for users. These may include job-matching tools, provider and course discovery platforms, and outcome dashboards aligned

to local labour market needs. Engagement with industry bodies, training institutions, and District Skill Committees can help ensure that solutions remain grounded in regional demand, supported by clear consent frameworks for responsible data sharing.

Using this foundation, a critical gap in outcome-related information can be addressed through the creation of a National Career Outcome Repository as a shared digital public good. By aggregating data on wages, roles, demand trends, and placement outcomes from multiple sources, such a repository can influence decision-making across the ecosystem. For learners, it enables informed choice based on likely outcomes rather than perception. For institutions and States, it provides a common evidence base to align training supply, infrastructure, and incentives with labour market demand.

EXHIBIT 30: NATIONAL CAREER OUTCOME REPOSITORY

CONCEPT

National Career Outcome Repository: Finding India's job ready institutions

	Outcome-linked metrics	Publish verified data on salary ranges, job roles, sectors, and internship placement rates across programmes and colleges
	Career trajectories	Showcase alumni journeys and case studies to provide real examples of career pathways, progression timelines, and ROI of different programmes
	Multi-channel dissemination	Make information accessible through a national digital platform, integrated with state dashboards, and share via schools, colleges, and social media
	Institutional incentives	Encourage institutions to transparently share career outcomes; reward those demonstrating strong employability outcome to drive transparency and trust
	Integrated guidance	Provide value added tools for learners and parents to compare institutions, programmes, and pathways side-by-side to make informed enrollment choices
Private sector driven; powered by Skill DX		

At the user level, the digital backbone can support a range of personalised features. Tools such as MyCV, a QR-enabled digital curriculum vitae, can help learners showcase verified work experience. Skill Skore can provide an aggregated view of future readiness, while

Workfolio can enable informal and blue-collar workers to build a simple digital portfolio of their skills and past work using photos, videos, and local verification. These features are particularly important for segments that have traditionally lacked formal recognition.

EXHIBIT 31: WORKFOLIO

CONCEPT

Workfolio : Digital portfolio & hiring network for blue-collar workers

Mobile-first platform for informal workers to showcase their skills and experience, making hiring more visible and trusted and reduce reliance on word of mouth



For workers:

- **No frills worker profiles and onboarding:** Location, availability, languages, pay band, skills, WhatsApp-first onboarding
- **Portfolio showcase:** Photos/videos of work by category of skill (with references and timestamped for credible verification)
- **References & badges:** Self-declared -> endorsed -> verified (local Digi-attestation, RPL)



For employers:

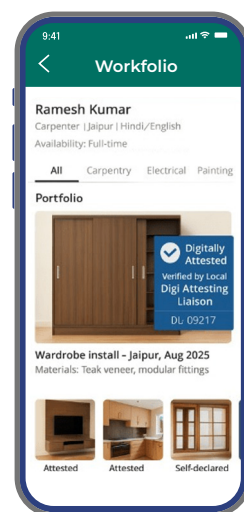
- **Search & match:** By skill tags, radius, availability
- **Ratings & repeats:** Feedback builds portable reputation
- **Team hires:** Curated rosters for contractors/projects



Onboarding integration:

To leverage ITIs, hubs, and Sakhi Booths for onboarding workers

Private sector driven; powered by Skill DX



To support informed decisions across the life course, individuals also need simple, credible signals of their readiness for future roles. One

such tool is Skill-Skore, which can translate skills, qualifications, and work experience into forward-looking readiness signals.

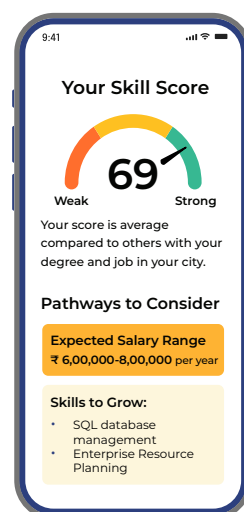
EXHIBIT 32: SKILL SCORE

CONCEPT

Skill-Skore

- AI-enabled **Skill & Future Readiness Index (FRI)** that allows employees to assess their future readiness
- By entering their current qualifications, skills, and job role, individuals receive a FR score benchmarked against industry standards and trends
- **Optional top-ups for strengthening score**, for e.g., general employability assessment to showcase current employability, technical assessment to prove skills, submission of prior verified credentials etc.

Private sector driven; powered by Skill DX



Features such as FlexEarn can expand access to short-term and part-time work for students

and workers, enabling greater flexibility in how learning and earning are combined.

EXHIBIT 33: FLEXEARN •

CONCEPT

FlexEarn : Part-time opportunities for students

Enables final year college students & recent graduates to unlock part time work opportunities and support roles to support themselves financially during graduation and for up to 1 year post-completion

Enable serious learners to fund and focus on relevant skills demanded at workplace



Verified proof of learning

from the college or skilling platform



Discover via campus portal

for contract based roles



Industry partnerships

to enable/reserve opportunities as part of CSR initiatives

Private sector driven; powered by Skill DX (skill data exchanges)

Taken together, these digital enablers form the operating infrastructure for a skills-first ecosystem. They do not replace institutions or programmes, but connect them, ensuring that

learning records, opportunities, and outcomes are visible, portable, and actionable across the skilling lifecycle.

Guidelines to Implement the System Enabler

System Enablers

Action Plan



Skills DX

- **Create a State Skill Data Platform** (Govt-led) to bring key datasets into one place e.g.,
 - training supply & infra (ITIs, Polytechnics, HEIs: courses, seats, fees, trainers)
 - local demand & wages (industry associations/MSMEs, job fairs, staffing/gig platforms)
 - outcomes & placements (institution, apprenticeship registries)
- Link with National Registries such as e-Shram, UDISE+, NCS (and EPFO/apprenticeship portals), with the State ensuring data standards/alignment; private tech partners support integration and upkeep
- **Set up a Secure Technology Layer where government defines protocols** for consent, access, and APIs; private providers build data pipelines, feedback loops, to enable tools that connect trainees, trainers, and employers
- Develop practical applications (joint Govt-Industry) including:
 - job discovery & matching portals (e.g., hyperlocal search, part-time/flexible work)
 - provider/course discovery (e.g., Skill Scout/Skill Sure)
 - outcome dashboards (e.g., Career Outcome Repository)
- **Engage local stakeholders via guidelines to Implement the enabler facilitation** - bring industry bodies, training providers, and District Skill Committees together to co-design solutions that reflect local workforce needs

System Enablers



Digital Skills Passport

Action Plan

- **Launch a Digital Skills Passport/Account**
- **Provide every learner and worker a unique Skill account** (APAAR-linked) that stores verified credentials, RPL credits, and work experience in one place. Users can share verified data with consent for jobs, training, or financing - enabled via the Skill Data Exchange (covered in detail in "Digital public infrastructure for skills")
- **Build tailored tools to support learner/individual skills/employment journey** (illustrative):
 - E.g., Digitally Verified Credentials showcasing all forms of learning/credits/experiences etc. to facilitate mobility – in jobs and education etc.
 - E.g., Instant QR-based CV generation (myCV) adapted to job description to expedite job search and application
 - E.g., Aggregated score reflecting skill readiness for self assessing need for upskilling (Skill Skore)
 - Enable financing and targeted support via the Skills passbook/account: Link Skill Vouchers and Skill Financing Scheme directly to verified Skill IDs for transparent disbursement and repayment tracking (covered in detail in 'Outcome-linked financing')



Opportunity access, discovery and matching

- **Build a unified digital job discovery platform** powered by Skill DX (covered in detail in "Digital public infrastructure for skills") : Aggregate listings from public schemes, private employers, and gig platforms; enable filters for part-time, flexible, and local jobs
- Expand access to:
 - Flexible/part-time work (FlexEarn): onboard govt departments, PSUs, and local MSMEs to collate and post flexible opportunities with clear pay/hours; enable student/women slots and simple attendance–payment flows
 - Hyperlocal opportunities (LocalWorks) by showing jobs within a chosen radius (e.g., 3–10 km); activate access via block offices/kiosks; support assisted walk-in applications
- Create a platform for blue/grey-collar workers (Workfolio) to demonstrate portfolio (e.g., via photos/videos of work, and supervisor endorsements) and support with gaining new opportunities
- Match using verified profiles via Skill Passbook (covered in detail in Digital skills passbook): auto-fill skills, credentials, and past work to improve match quality; send real-time nudges to jobseekers and employers for faster placement

System Enabler 2 Outcome-based Financing

Access to finance remains a critical constraint in India's skilling ecosystem. Motivated learners are deterred by high course fees and unclear links between skilling and career outcomes. Lack of affordable funding options restricts the pursuit of add-on skills without risking lost income with women facing disproportionate impact.

India's policy framework recognises these financial and access constraints and seeks to mitigate them through targeted initiatives and structured interventions. The Model Skill Loan Scheme, jointly run by MSDE, the Department of Financial Services, and the Indian Banks Association, offers financial support for skill development. Learners can access loans ranging from ₹5,000 to ₹7.5 lakh. Under this scheme, loans with guaranteed amount of ₹131.31 Cr. have been provided as of 2025⁶⁷.

At the State level, several governments have introduced complementary mechanisms; for instance, the Maharashtra Chief Minister Kaushalya Abhiyan is aimed at incentivising skill development and vocational training by providing direct financial support to learners. Under this programme, ITI and other skill course trainees receive monthly stipends ranging from ₹6,000 to ₹10,000, depending on their qualifications. Functioning similarly to a voucher system, the scheme ensures that financial support reaches learners directly through cash transfers, reducing intermediaries and enhancing accessibility to skill-building opportunities⁶⁸. Tamil Nadu's Vetri Nichayam has been introduced to upskill the unemployed youth to get placement opportunities in the industry. This scheme targets all the students aged 18-35 years and encompasses the unemployed youth who have completed their graduation, ITI, Diploma, and school dropouts who require immediate

placements. Training is being executed by the renowned industry training partners focusing on maximising employability opportunities with training duration exceeding 100 hours. To lower cost barriers, the Government of Tamil Nadu negotiates pricing with empanelled private providers listed on the platform and offers these training programmes free of cost to eligible candidates⁶⁹.

While these mechanisms expand access, most funding today remains linked to enrolment and course completion rather than what learners achieve after training. **Outcome-linked financing** seeks to shift this emphasis by progressively tying funding support to verified results such as job placement, wage improvement, or sustained employment.

Building on these foundations, there is scope to further strengthen market-responsive and outcome-linked financing approaches. States may consider piloting and refining a combination of funding tools to improve learner choice, provider accountability, and employment outcomes. In such models, learner choice and outcome funding work together.

Learners select programmes that align with their goals, while providers are incentivised to deliver results rather than maximise enrolments. To operationalise this outcome-orientated, financing mechanisms can be structured to pay only when results are achieved. For instance, Skill Impact Bonds are a pay-for-results model in which private or philanthropic funders initially finance training delivery, and the government repays them only if predefined outcomes such as verified placements or wage gains are achieved. Such mechanisms require careful calibration so that harder-to-place learners are not excluded.

67. Government of India, Ministry of Skill Development and Entrepreneurship. (2025, March 10). *Skill Loan Scheme for Andhra Pradesh* (Lok Sabha Unstarred Question No. 1664), accessed in Nov 2025.

68. Maharashtra State Skill Development Society. *PMKUYA*, accessed in Nov 2025.

69. Tamil Nadu Skill Development Corporation. *Vetri Nichayam scheme*, accessed in Nov 2025.

Another such approach is the introduction of **digital skills vouchers**, which represent a clear shift from today's supply-driven, centre-led skilling model to a learner- and employer-led system. Unlike current schemes where training choices are largely pre-determined, vouchers place purchasing power with the learner, nudging them to make intentional, demand-aligned skilling decisions. Digitally issued and hosted on individual learning accounts, vouchers are programmable, enabling governments to precisely target priority sectors, geographies, and beneficiary groups, and to adapt scheme

parameters quickly without redesigning the programme. This model strengthens market signals for quality, as training providers compete on outcomes rather than enrolments, while also enabling end-to-end tracking, reduced leakage, and cross-scheme convergence. Supported by clear eligibility guardrails such as recruit-train-deploy pathways in priority sectors and a curated pool of high-quality providers across industry, government institutions, and training organisations, digital skill vouchers can improve relevance, accountability, and long-term employability outcomes at scale.

EXHIBIT 34: TARGETED SKILL VOUCHERS AND SKILL FINANCING SCHEME

CONCEPT

Targeted Skill Vouchers: Affordable access to priority skills

Targeted vouchers transferred to beneficiary account/e-wallet covering -

- | | | |
|--|--|--|
| 01 Emerging sectors (e.g., semiconductor, renewables, EV) | 02 Declining/at-risk sectors (e.g., mining) | 03 Priority segments (e.g., women, disadvantaged students in education) or regions (e.g., tribal, mining districts) |
|--|--|--|



Redeemable at trusted providers

Vouchers usable only at government-verified/accredited training providers and industry partners



Flexible funding model

Can be offered as full subsidy or co-pay, depending on learner profile and sector priority



Delivered through a high-trust ecosystem

via digital wallet (e.g., NPCI e-RUPI), enabling tracking, integrity, and targeted use

CONCEPT

Model Skill Loan Scheme:

Make the Model Skill Loan easy to access, trusted to use, and aligned to employability



Frictionless access

Digital eKYC + instant eligibility checks via delivery institute/centre



Bigger ticket size

Promote enhanced limit (up to Rs. 7.5 lakh) for learners aspiring for advanced courses



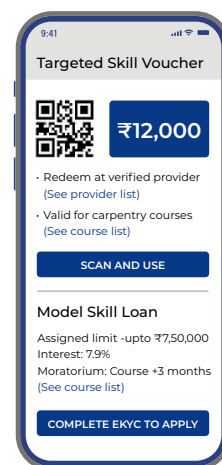
Placement-linked repayment

Moratorium through course + short grace window; autopay begins post-placement to keep risk low for learners



Trusted course list

Loans usable only at pre-verified programmes/providers with placement records



Appropriate checks, including outcome-linked guarantees, can help ensure quality and accountability, while leveraging existing public and private infrastructure can reduce delivery costs. Programmable payment mechanisms, such as e-RUPI or central bank digital currency (CBDC) based wallets, can further enhance transparency and ease of transactions. These instruments require a robust digital backbone, anchored in a Skills Account/Passport, to enable seamless verification, transactions, and a consistent user experience for learners and providers. For governments, this also enables

clearer visibility into who is being funded, for what outcomes, and with what results, allowing financing decisions to be calibrated over time.

In parallel, placement-linked loan models can be refined to reduce financial risk for learners. Features such as moratoria aligned to employment outcomes can ease repayment pressures during training periods. In these arrangements, part of the risk shifts away from learners towards providers or financing partners, aligning incentives more closely with employment success.

Guidelines to Implement the System Enabler

System Enabler

Action Plan



Outcome-based financing

- **Launch Targeted Skill Vouchers for priority sectors/learners** and empower choice and address upfront cost barriers
 - Focus on priority learner segments (e.g., women, marginalised youth)
 - Focus on emerging sectors of national/State priority (e.g., semiconductors, green energy)
 - Focus on declining sectors/roles (e.g., mining, admin)
- **Expand Model Skill Loan Scheme:** Scale the scheme with placement-linked repayment moratorium for outcome-certified courses to reduce learner cost burden
- **Promote outcome-linked funding models:** Identify pathways to scale Skill Impact Bonds and other PPP-based models that pay training providers for results achieved (e.g., verified placement, wage gain) rather than inputs
- Evaluate and enable seamless payments and monitoring: Test new payment modes (e.g., e-RUPI, CBDC) to automate voucher redemption, track fund flows, and ensure accountability



System Enabler 3 Operationalisation of the National Credit Framework (NCrF)

Fragmented standards across qualification bodies, ministries, and institutions continue to limit how learning is recognised and carried forward. Credits earned in vocational training, academic programmes, and workplace learning are often not comparable or transferable, creating barriers when learners move between education, skilling, and work. These constraints are most acute for those who learn outside formal classrooms, where work experience, apprenticeships, and informal learning remain largely unrecognised due to the limited scale of Recognition of Prior Learning, uneven assessment practices, and weak verification norms.

Addressing this requires treating learning as cumulative rather than episodic. A common credit framework provides the foundation by enabling learning acquired in classrooms, workplaces, apprenticeships, internships, or informal settings to be assessed and recorded

in a comparable way. The NCrF, launched by the National Council for Vocational Education and Training (NCVET) under the Ministry of Skill Development and Entrepreneurship (MSDE), establishes a shared credit language across learning modes and brings parity between academic, vocational, and work-based learning.

For the framework to function meaningfully on the ground, recognition must be credible and consistent. Standardised assessment approaches, supported by clear rubrics and evidence such as portfolios or video documentation, can improve reliability, while audit-based verification for apprenticeships and workplace learning strengthens confidence among institutions and employers. With credible recognition in place, structured progression becomes possible, including certificate to diploma or diploma to degree transitions supported by bridge modules in foundational subjects such as Mathematics and English.

EXHIBIT 35: NCRF TOOLKIT

CONCEPT

NCrF Toolkit – NCrF Operationalisation at Scale

Turn the NCrF rulebook into day-to-day practice across schools, ITIs, polytechnics, colleges, and workplaces



SOPs (what, how, by when)

Publish SOPs for RPL expansion: eligible trades, evidence formats (video/portfolio), credit award/accept timelines, and SLAs; include staffing norms, assessor training, and escalation flow



Bring the system enablers together

(via single portal for signup, empanelment, evidence upload, dashboards)
Empanel & accredit assessment agencies: criteria, capacity checks, rate cards, and turnaround SLAs; Onboard awarding bodies



Set up a command centre (central, state, district)

PMU to train district/block officers, monitor and troubleshoot issues



Build a robust audit network for assessors

Random checks, norms, video/evidence audits; blacklisting policy for non-compliance; quarterly quality and outcome reviews



Expand private assessment footprint

Invite more credible private agencies; set transparent entry criteria; deploy them to districts for on-demand assessments basis district trade landscape

**Contextualise SOP to State & trades (local job demand, language, mobility options).
Ensure data linkage to State Skill DX, APAAR-linked Digital Skill Passbook so that credits move with the learner**

Operationalising the NCrf also requires that credits be treated as valid prerequisites for further education and employment. Without this, credit accumulation remains symbolic and mobility across pathways remains constrained. When credits are recognised as entry requirements, learners can re-enter education through Open Schooling combined with Recognition

of Prior Learning (RPL), progress into ITIs or higher education, and move across academic, vocational, and work-linked tracks without loss of time, effort, or prior learning. Together, these shifts position the credit framework as a core enabler of lifelong learning and sustained mobility across the education, skilling, and work continuum.

Guidelines to Implement the System Enablers

System Enablers	Action Plan
 NCrf adoption for Pathway Mobility	Strengthen creditisation of work experience (RPL expansion) - Expand and accredit the RPL network by empaneling industry bodies, sector councils, private certifiers, and local testing centres - Standardise assessment processes via SOPs - clear rubrics, portfolio/video evidence, and audit-based verification for on-the-job learning and apprenticeships - Build on-demand assessment capacity, leveraging industry infrastructure and incentivising employers to certify work experience credits Ensure adoption of NCrf by education institutions - Contextualise NCVET-issued NCrf SOPs for schools, ITIs, polytechnics, colleges, and universities - Conduct orientation and training sessions for institutions and faculty on credit transfer, bridge courses, and progression pathways Enable clear pathway mobility - Bridge routes back into education: e.g., allow informal workers to earn Class 12 equivalence via NIOS + RPL, enabling re-entry into ITIs through Transfer of Credit (TOC) or higher education - Top-up pathways: e.g., diploma-to-degree or certificate-to-diploma progression using bridge modules (Maths, English) - Vertical movement: e.g., recognising work-based learning credits toward degree-level qualifications

System Enabler 4

Skills-first Policies and Inclusive Infrastructure

India’s shift towards a skills-first ecosystem continues to be constrained by structural barriers that limit participation and progression, particularly for women and informal workers. These barriers extend beyond training provision to the broader environments in which individuals live, commute, and access facilities.

Some States have begun addressing these

constraints by strengthening enabling infrastructure for women. In Tamil Nadu, public-private partnership models such as working women’s hostels (Thozhi)⁷⁰ have expanded access to safe, affordable accommodation for women relocating for work or training. By reducing housing-related barriers and improving mobility, such facilities function as critical complements to skilling and employment hubs.

70. World Bank. (2024). Tamil Nadu Working Women’s Hostels- A Home Away from Home (feature story).

Beyond housing, a broader constraint lies in the underutilisation and fragmentation of existing infrastructure. Training facilities, workshops, labs, hostels, and community spaces are distributed across multiple departments, ministries, and levels of government, as well as the private sector, often with limited visibility beyond their immediate custodians.

Establishing a State/National Shared Skills Infrastructure Network can help address this by systematically identifying, mapping, and digitising infrastructure capacity across trades, institutions, and geographies. This includes assets held by schools, colleges, ITIs, skill centres, hostels, PSUs, and industry partners, across both Centre and State systems. State/National Shared

Skills Infrastructure Network may leverage PM-Gati Shakti and SIDH.

Digitising this inventory and democratising access to facilities can enable shared use for skilling, reskilling, and community-led programmes, particularly during non-peak hours. District-level coordination can further support utilisation by aligning local demand with available capacity. Models that allow community use of school or college infrastructure for women's skilling, supported by proximate housing such as working women's hostels, illustrate how integrated planning can expand access without significant new capital expenditure.

EXHIBIT 36: SURAKSHIT SAATHI

CONCEPT

Surakshit Saathi: PPP-led hostels & transport for women

PPP-led model to provide secure hostels near industrial/training hubs and affordable transport options for women learners and workers

01

Shared cost model

Capex by government (land, basic infrastructure) and Opex by private sector (CSR/apprenticeship budgets to cover running costs and services)

02

Women's hostels near industry hubs

PPP-led hostels close to clusters and training centres, with safety features, meal plans, and flexible rental options (e.g., Vallam Vadagal by Tamil Nadu government aims to create housing complex for ~18,000 Foxconn women employees)

03

Dedicated transport services

Free or subsidised bus routes for women commuting between residential areas and hubs, aligned to shift hours and training schedules (e.g., Zero Ticket Bus Travel Scheme (ZTBT) allows women to travel up to 30 km in government buses for free in Tamil Nadu)

04

Reduces dropouts caused by safety and mobility concerns, ensuring women can complete skilling programmes and sustain participation in jobs

Further, such infrastructure reforms need to be complemented by regulatory measures that shift hiring practices towards demonstrated capability. Piloting skills-first hiring in select public sector undertakings and high-volume

roles can help reduce over-reliance on formal degrees, strengthen demand for job-relevant skills, and reinforce the value of skilling pathways across the labour market.

EXHIBIT 37: SKILLS-FIRST HIRING MANDATE •

CONCEPT

Skills-First Hiring Mandate

Mandate for skills-based recruitment model for roles where a degree is not essential, creating visible demand for NSQF/ITI/apprenticeship credentials

01 Mandate NSQF alignment

Make NSQF-aligned skill levels a prerequisite for all jobs (PSU and private)

02 Rewrite job descriptions

Encourage advertisers to base JDs on competencies/NSQF roles; remove degree filters unless required by statute (e.g., healthcare)

03 Select by skills, not degrees

Use trade/skills tests, NSQF/ITI/RPL/apprenticeship certificates, and experience as key criteria

04 Pilot before scale

Test in select PSUs and high-volume roles (operations, maintenance, customer service), then extend across government vendors

In parallel, incentive-based measures such as upskilling leave can encourage employer participation in lifelong learning. Enabling employees to take structured time off for approved upskilling or reskilling programmes

can support mid-career transitions, improve workforce adaptability, and align skilling investments more closely with evolving industry needs.

EXHIBIT 38: LEARNING UPSKILLING LEAVE •

CONCEPT

Upskilling Leave: Structured leave for upskilling

Introducing optional pre-planned, short blocks of unpaid leave dedicated to learning - giving them security of continued employment while they skill-up

01

Short, intensive breaks:

1-3 month unpaid leave blocks that employees can plan to pursue certification programmes, bootcamps, or industry-recognised training

02

No employer cost:

Employers retain talent and morale without funding the training

03

Career acceleration:

Workers gain market-relevant certifications that help them move into higher-paying roles or other sectors

04

Proof of Completion:

Training outcomes logged formally (via digital certificate repository) so that learning adds to the employee's verified record



International precedent: In Germany, employees are entitled to paid educational leave to pursue training from certified providers (up to 5 days per year)

Taken together, coordinated action on shared infrastructure, inclusive facilities, regulatory reform, and incentives, delivered through a

whole-of-government approach, is essential to ensure that skilling pathways are accessible, inclusive, and scalable.

Guidelines to Implement the System Enabler

System Enablers



Skills first policies and infrastructure

Action Plan

- **Evaluate a District-first implementation agenda with accountability at District Collector level and executional responsibility at Panchayat/ward level** building on models such as District-led skill missions and deployment of CM Skill Development Fellows to drive local skilling programmes (e.g., Nua Odisha)
- **Launch a Whole-of-Government Committee** at the State level with representation from education, labour, industries, and women & child departments
- **Mandate skill-first hiring practices:**
 - Shift recruitment in government and PSUs to NSQF-based hiring, further encourage industry to follow
 - Encourage use competency/skill -based JDs instead of traditional degree requirements
 - Encourage use of NCrF to creditise work experience, through standardised RPL processes and clear rubrics for translating work experience into credits
- **Enable allied reforms for employers**, through policy and incentive levers, e.g.
 - Enable provision of paid/unpaid time-off for employees to pursue approved upskilling programmes
 - Provide ELI top-ups or recognition for employers who train and retain skilled workers
 - Allow companies to offset a share of training costs against taxes
- **Encourage cross-utilisation of skilling infrastructure:**
 - Build a State Skills Infrastructure Network to map public/private assets, track utilisation
 - Empower district collector to promote utilisation of existing resources for district schemes
 - Enable shared use of schools, colleges, and ITI facilities for community-led re/upskilling programmes (e.g., accessible skilling for women possible in schools)
- **Ensure/set-up access to inclusive/secure infrastructure**, especially for priority segments
 - E.g., provide safe hostels, childcare, and reliable transport near industrial and skilling hubs (Surakshit Saathi) to support mobility, especially for women
 - Enter into capex/opex sharing model with large private players for setting up and operating shared infrastructure

Reimagined Skilling Architecture

Together, the core reforms and system enablers form a **reimagined skilling architecture** that places the learner at the centre and enables cumulative progression across education, skilling, and work. Rather than a linear journey, the architecture is designed around multiple entry, exit, and re-entry points, allowing individuals to move across learning and earning pathways without restarting at each transition.

At the school level, the architecture recognises that institutions operate under different enrolment and infrastructure constraints. It therefore supports **multiple school archetypes**, ranging from all schools offering foundational employability skills to the subset of those providing deeper vocational specialisation. Early exposure from Grade 6 builds common employability and entrepreneurship capabilities. In addition, vocational tracks from Grade 9 are offered selectively, aligned to local capacity and demand. Flexibility to move across school types until Grade 11 ensures that vocational track, once chosen does not limit future choices.

Beyond school, the architecture expands into **multiple post-school pathways**, including tertiary education with deep private and industry ownership, alongside parallel routes through ITIs and polytechnics. Learners can move between these options through bridge mechanisms such as open schooling certificates or top-ups from ITI to diploma or degree. While specialised skill institutions and skill universities serve as useful exemplars of integrated, job-linked delivery, system-wide scale is expected to come from embedding skills and vocational options earlier within school pathways.

For the workforce and NEET youth, the architecture prioritises **outcome-linked standalone skilling** that responds to changing labour market demand. Short-to-medium duration programmes, micro-credentials, and apprenticeships allow workers and young people to acquire high-value skills quickly and apply them in real work settings. Apprenticeships, in particular, function as a central bridge between learning and earning, connecting learners directly to employers and supporting progression across roles and sectors.

Across all stages, credits (leveraging the NCrF) function as the medium for stacking, switching, and progression, rather than as static academic markers. Learning acquired in schools, tertiary institutions, short-term programmes, or the workplace can be accumulated and carried forward, enabling learners to pause, switch pathways, or re-enter without loss of prior effort. Taken together, these design choices create a system of cumulative progression, where individuals can learn, earn, and advance based on readiness and opportunity across the life course.

Taken together, the reimagined skilling architecture creates the conditions for smoother transitions across education, work, and re-entry for diverse learner and worker segments. The following pathways illustrate how, when these elements are in place, students, workers, and women can navigate multiple routes combining learning, earning, and progression towards more stable and sustainable outcomes.

Scan the QR code to view the Reimagined Skilling Architecture



EXHIBIT 39: THE REIMAGINED SKILL ARCHITECTURE

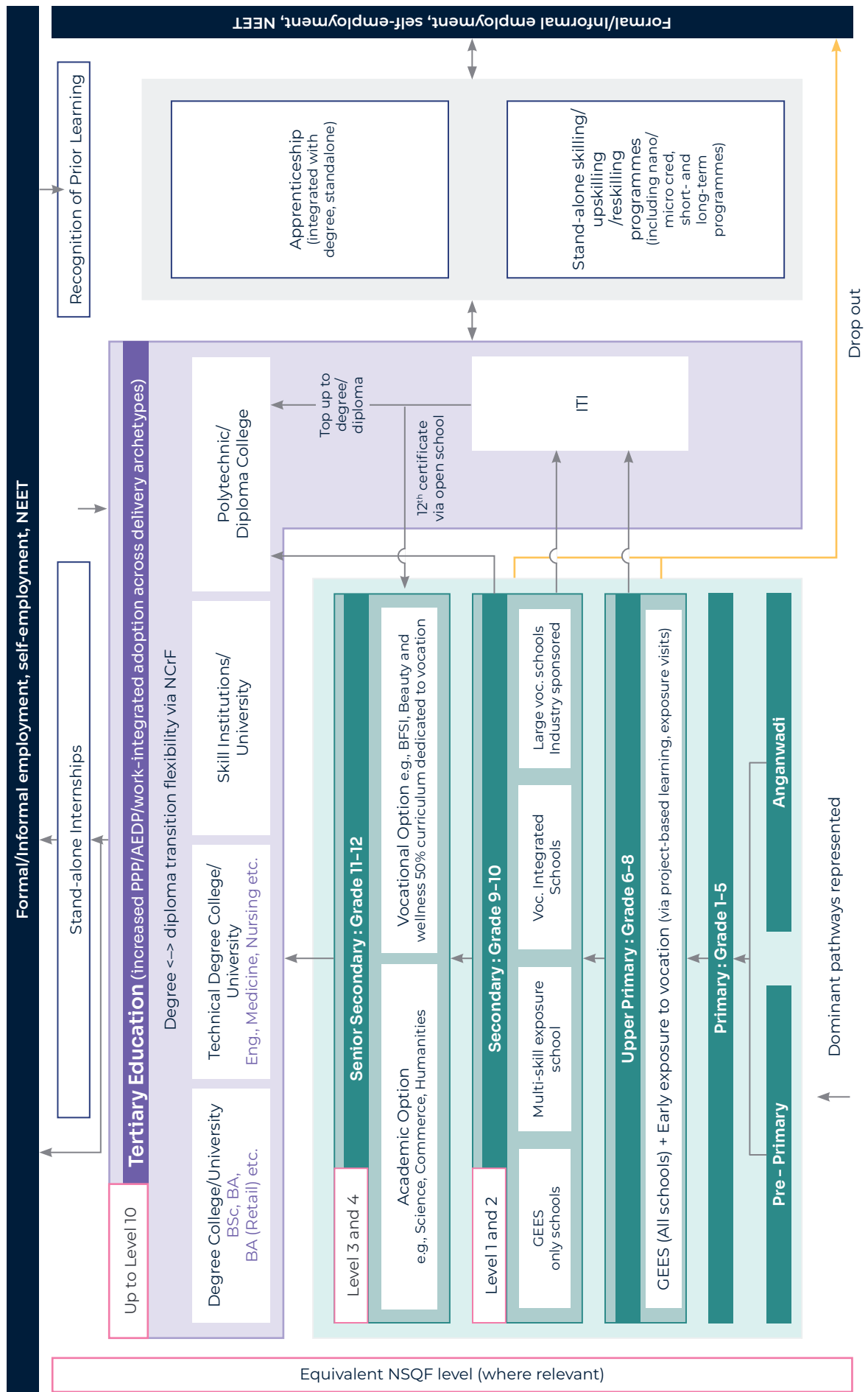
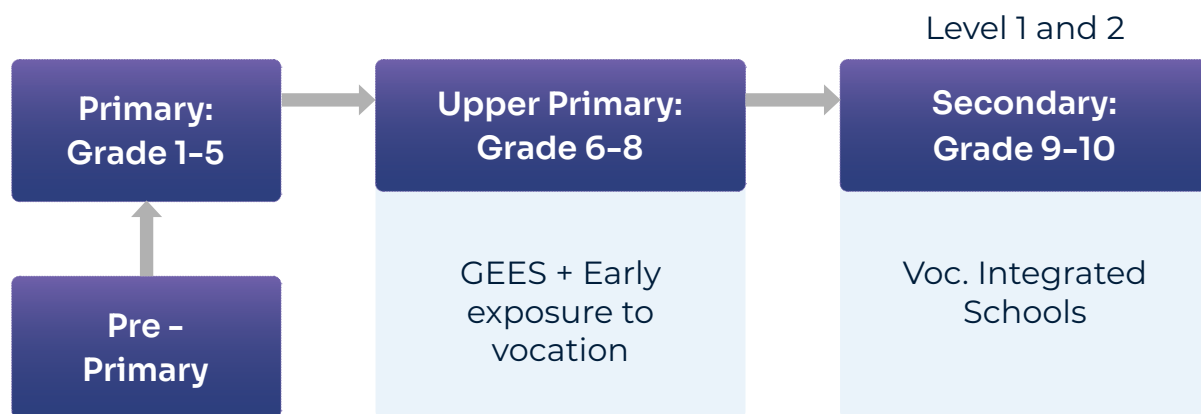


EXHIBIT 40: ILLUSTRATION OF MULTIPLE PATHWAYS FROM SCHOOL

Rajat's route: early exposure → in-school credentials and Specialisation → early job + work-integrated degree → stable job



Interventions

GEES for all – General Employability and Entrepreneurship Skills

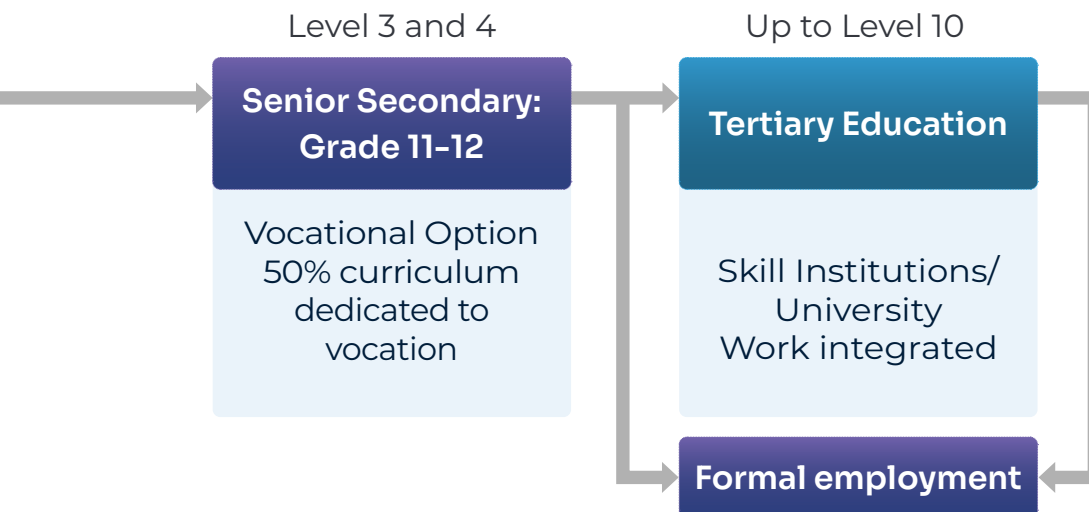
Pathway Clinics – Counselling for parents and students

Kaushal track - Vocational track in school

Impact



Equivalent NSQF level (where relevant)



Interventions

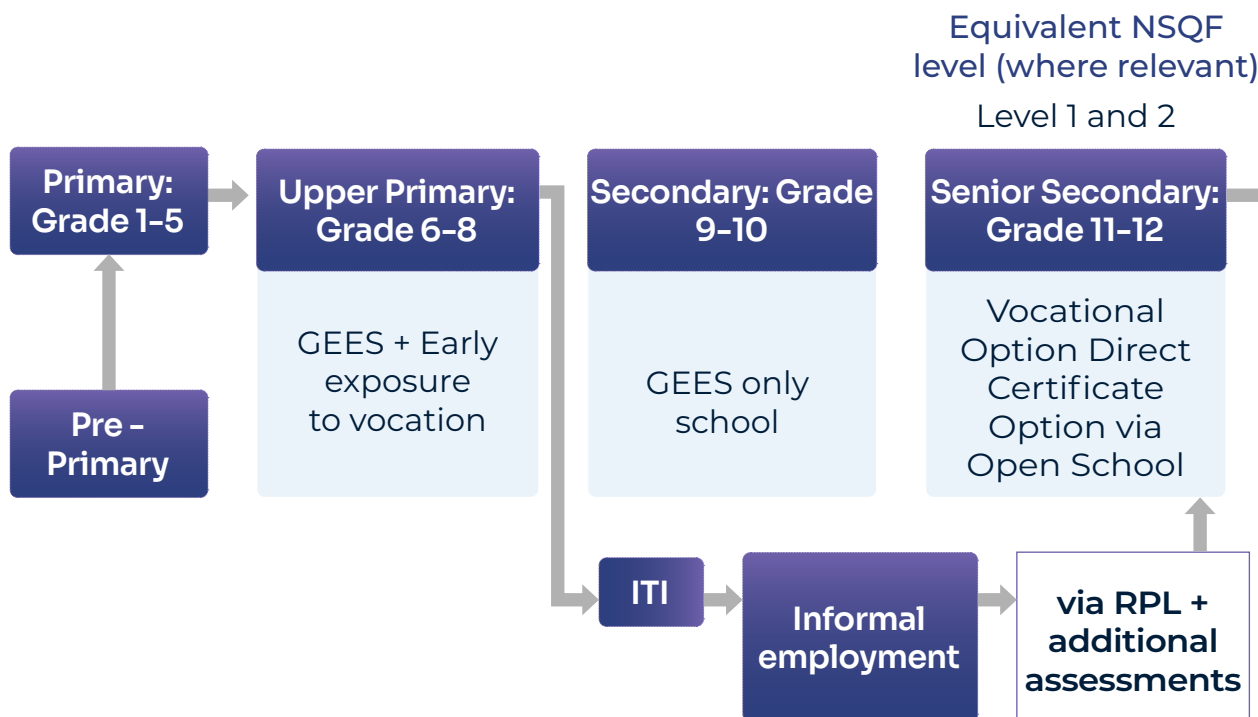


Impact



EXHIBIT 41: ILLUSTRATIVE PATHWAYS FOR INFORMAL WORKERS

Ravi's route: early exposure and guidance → informal work → RPL & short-term skilling → formal, stable employment



Interventions

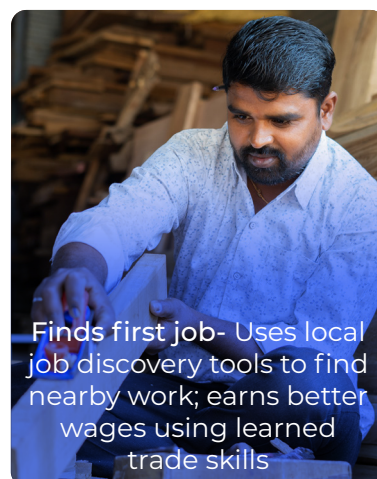
GEES for all - General Employability and Entrepreneurship Skills

LocalWorks – Hyperlocal, flexible job discovery

Pathway Clinics -Counselling for parents and students

MyGuide - AI-led lifelong career companion for the workforce

Impact



Level 3 and 4

Formal employment
low growth

Stand-alone skilling
programme
(short-term)

Formal employment
Stable, high growth

Interventions

Skill Scout – Skill
centre
discovery platform

Flagship Short-term
Skilling Programmes

Targeted Skill
Voucher

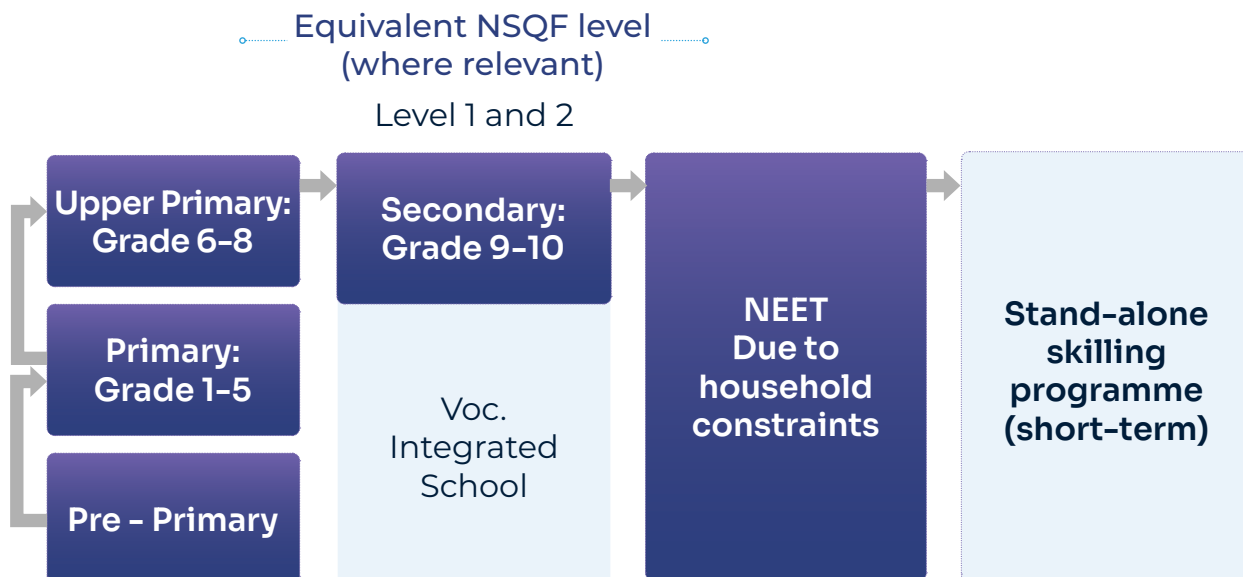
Workfolio - Digital
portfolio
& hiring network

Impact



EXHIBIT 42: ILLUSTRATIVE PATHWAYS FOR WOMEN REENTERING THE WORKFORCE

Meera's route: early NEET after dropout → flexible skilling → part-time work → self-employment



Interventions

GEES for all – General Employability and Entrepreneurship Skills

Kaushal track -
Vocational track in school

Pathway Clinics - Counselling for
parents and students

Skill Sure -
Skill
discovery
platform

Skill Scout -
Skill centre
discovery platform

Sakhi Booths - Trusted,
local spaces for
awareness

Targeted
skill
voucher

Impact



Informal employment
(nearby, flexible)

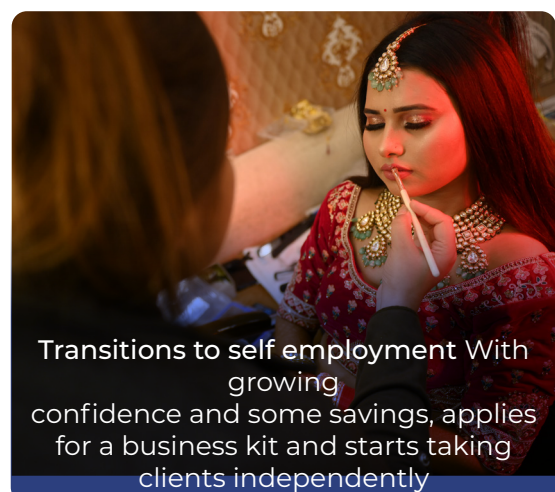
Self employment

Interventions

LocalWorks - Hyperlocal,
flexible jobs

At-home business kits

Impact



Conclusion

The reimagined skilling and education ecosystem rests on three foundational principles. First, learning is not linear. Individuals move in and out of education, skilling, and work as their life circumstances evolve, and the system must be designed to accommodate these varied pathways rather than constrain them. Second, skilling must function as an integral part of lifelong learning, enabling individuals to build, update, and repurpose skills over time in response to changing aspirations and labour market demand. Third, system performance must be assessed through outcomes, whether in employability, progression, or sustained livelihoods, rather than participation or effort alone.

The Union Budget 2026–27 marks an important milestone in advancing an integrated skilling ecosystem through the introduction of the Integrated Scheme in Skilling Architecture (ISSA). ₹600 crore has been allocated to MSDE in FY 26-27 for the Central Sector Scheme. The scheme reflects a growing policy emphasis on strengthening linkages across education, skilling, employment, and lifelong learning systems while enabling greater alignment between national priorities and local implementation. This emphasis is reflected in the Budget's provision for "Integrated Scheme in Skilling Architecture: To enable coupling of national policy and frameworks with State-level planning and localised execution, through State Skills Transformation Pilots in Andhra Pradesh, Odisha, Uttar Pradesh, Bihar and Assam." These pilots represent a crucial opportunity to demonstrate how national frameworks can be translated into context-specific solutions that respond to local labour market needs, institutional capacities, and learner aspirations.

Delivering this vision requires coordinated action across institutions, employers, and governments. Stronger public–private partnership models are essential to anchor industry-led skilling, strengthen relevance, and close the gap between learning and

work. Industry's role extends well beyond funding: it encompasses careers counselling, perception-building, co-designing curricula, and regularly updating course content to reflect real workplace needs. Industry must also invest directly in training infrastructure and play a central role in work-based learning (apprenticeships, internships, and on-the-job training). Industry drives placement outcomes, ensuring certification translates to gainful employment. Formal partnership agreements with shared accountability mechanisms will be key to sustaining this model. Equally important is alignment across policies, financing mechanisms, and delivery systems, so that learners experience skilling as a connected journey rather than a series of isolated interventions.

States will be the primary drivers of this transformation. While the national framework establishes the overall direction, architecture, and enabling standards, outcomes will ultimately depend on how effectively States adapt and operationalise these elements on the ground. States are best positioned to align skilling pathways with regional labour market needs, customise delivery models to local infrastructure and enrolment realities, and integrate education, skilling, and employment systems at the district and community levels. Their role in coordinating across departments, engaging industry partners, and personalising interventions for diverse learner segments will be central to achieving scale with inclusion.

In conclusion, the approach outlined in this report seeks to move skilling from a collection of programmes to a coherent system that supports cumulative progression across one's life. By placing the learner at the centre and empowering States to lead implementation within a shared national architecture, India can strengthen its skilling ecosystem as a durable foundation for economic participation and social mobility in the years ahead.



Glossary

ABC

Academic Bank of Credits

AEDP

Apprenticeship Embedded Degree Programmes

AI

Artificial Intelligence

AICTE

All India Council for Technical Education

AISHE

All India Survey on Higher Education

APAAR

Automated Permanent Academic Account Registry

API

Application Programming Interface

B.Com

Bachelor of Commerce

B.Sc

Bachelor of Science

BA

Bachelor of Arts

BBA

Bachelor of Business Administration

BFSI

Banking, Financial Services, and Insurance

BTL

Below the Line

CBDC

Central Bank Digital Currency

CBSE

Central Board of Secondary Education

CSO

Civil Society Organisation

CSR

Corporate Social Responsibility

CV

Curriculum Vitae

DDU-GKY

Deen Dayal Upadhyaya Grameen Kaushalya Yojana

eKYC

Electronic Know Your Customer

ELI

Employment Linked Incentive

EPFO

Employees' Provident Fund Organisation

EV

Electric Vehicles

FY

Financial Year

GEES

General Employability and Entrepreneurship Skills

HEI

Higher Education Institute

ITI

Industrial Training Institute

JD

Job Description

LFPR

Labour Force Participation Rate

MOSPI

Ministry of Statistics and Programme Implementation

MSDE

Ministry of Skill Development and Entrepreneurship

MSMEs

Micro, Small and Medium Enterprises

NAPS

National Apprenticeship Promotion Scheme

NATS

National Apprenticeship Training Scheme

NCERT

National Council of Educational Research and Training

NCEUS

National Commission for Enterprises in the Unorganised Sector

NCF

National Curriculum Framework

NCrF

National Credit Framework

NCS

National Career Service

NCVET

National Council for Vocational Education and Training

NEET

Not in Education, Employment or Training

NEP 2020

National Education Policy 2020

NIC 2008

National Industrial Classification 2008

NITI

National Institution for Transforming India

NPCI

National Payments Corporation of India

NSQF

National Skills Qualification Framework

NSS

National Sample Survey

NSTI

National Skill Training Institute

PLFS

Periodic Labour Force Survey

PMKVY

Pradhan Mantri Kaushal Vikas Yojana

PM-SETU

Pradhan Mantri Skilling and Employability Transformation through Upgraded ITIs

PMU

Project Monitoring Unit

PPP

Public Private Partnership

PSE

Private Sector Engagement

PSU

Public Sector Unit

RPL

Recognition of Prior Learning

SAP

State Apprenticeship Platform

SIDH

Skill India Digital Hub

Skills DX

Skills Digital Registry and Exchange

SLA

Service Level Agreement

SOP

Standard Operating Procedure

SWAYAM

Study Webs of Active-Learning for Young Aspiring Minds

UDISE+

Unified District Information System for Education Plus

UGC

University Grants Commission

UNDESA

United Nations Department of Economic and Social Affairs

UNICEF

United Nations Children's Fund

UN

United Nations

UPI

Unified Payments Interface

VGF

Viability Gap Funding

ZTBT

Zero Ticket Bus Travel Scheme

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NITI Aayog

REINFORCEMENT LEARNING

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