SKILL DEVELOPMENT AND FUTURE-READY EDUCATION IN INDIA: NEP 2020

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Abstract
The Future Ready Skills Initiative in partnership with National Skill Development Corporation (NSDC), represents a transformative effort to address critical skill gaps in India's education system. Designed to equip over 500,000 students across Higher Education Institutions (HEIs) with future-ready skills, this initiative bridges the gap between traditional academic learning and the rapidly evolving demands of a global job market. Anchored in the principles of the National Education Policy (NEP) 2020, the program is a strategic response to India's growing need for industry-aligned education, fostering inclusivity and positioning the country's youth as key drivers of economic growth and innovation. ***India*** *is at a crucial juncture where its young workforce must be equipped with skills to meet the demands of the modern economy. As traditional workshops make way for industries requiring expertise in* ***Artificial Intelligence (AI)****, robotics, and sustainable technologies, skill deficits persist, leaving many unprepared. The government's recent initiatives, such as the upgradation of* ***Industrial Training Institutes (ITIs)*** *and the* ***Skill India Mission****, aim to address these gaps. By focusing on industry-aligned training and fostering* ***public-private partnerships****, these efforts seek to create a workforce that can drive India's economic growth and global competitiveness.*
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Introduction:

Why is Skill Development Critical for India's Demographic Dividend?

- **Current Employability Rates:** As per **India's Graduate Skill Index 2025,** India is facing a growing skill gap, with the graduate employability rate at just **42.6%** in 2024.
  - This gap indicates a serious misalignment between educational outcomes and the needs of industries, particularly for fresh graduates entering the workforce.
- **Youth Skill Gaps:** Over 65% of India's population is under the age of 35, yet many lack essential, industry-relevant skills.
  - While, as per the **Economic Survey 2023-24**, only **4.4%** of India's youth workforce is formally trained and 16.6% informally.
  - Initiatives like **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** are trying to address these gaps, but the disconnect between what is taught and industry demands remains significant.
- **India's Demographic Advantage:** India's **median age of 28** is a clear advantage for economic growth, providing a youthful and dynamic workforce.
  - However, to capitalize on this **demographic dividend**, it is crucial that the youth are equipped with the right skills to meet the demands of a rapidly evolving job market.
- **Skill Gaps Amid Economic Growth:** Despite being one of the fastest-growing economies, India faces **substantial skill shortages** that hinder its growth potential.
  - Around **65%** of companies report **skill gaps**, which prevent them from scaling and innovating effectively, impeding India's economic competitiveness.
- **Underemployment and Unemployment Rates:** A significant portion of India's educated workforce remains underemployed or unemployed due to skill mismatches.
  - As per the **Economic Survey 2024-25** more than **50% of graduates and 44% of postgraduates** are working in low-skill jobs, limiting their career growth and economic mobility.
- **Global Competitiveness:** For India to maintain its competitiveness in the global economy, it needs a highly **skilled workforce**.
  - Countries with skilled labor forces attract more foreign investments, and **skill development programs** help ensure that India's youth is prepared to contribute to global markets.
  - The skill gap in India has led to the need for a portal to approve short-term visas for **Chinese technicians**, supporting key sectors.
- **Economic Impact of Skill Development:** Skilled labor boosts productivity, which directly contributes to GDP growth.
  - By investing in skill development, India can improve **labor force participation**, enhance productivity, and drive economic growth across

various sectors, leading to higher wages and better job security.

- **Sectoral Growth and Skills Demand:** The **India Skills Report 2025** identifies **artificial intelligence, cybersecurity, engineering, and renewable energy** as high-demand areas for Indian talent.
  - Emerging technologies like **cloud computing, data science, and automation** are central to India's workforce development efforts .
- **International Mobility for Indian Workers:** Skill development programs, particularly **Mobility Partnership Agreements (MPAs)**, facilitate access for Indian workers to global job markets.
  - These agreements with countries like **France and Germany** ensure that Indian workers acquire internationally recognized skills, making them more competitive in the global labor market.

What are the Key Challenges Hindering Effective Skill Development in India?

- **Quality of Training:** India's skill development programs **suffer from a lack of consistent quality across institutions**.
  - Training centers (ITIs) vary significantly in terms of infrastructure, trainers, and resources, which undermines the effectiveness of skilling initiatives.
- **Lack of Industry-Academia Linkages:** There is insufficient collaboration between academic institutions and industries, leading to a skills mismatch.
  - Many courses under initiatives like **PMKVY and Skill India** are not aligned with current industry demands, leaving graduates unprepared for the workforce.
  - In the **absence of industry partnerships**, Indian institutions **focus heavily on exams and syllabus completion**, **neglecting qualitative skill development.**
- In contrast, models like the **National Science Foundation** in the US and **Horizon Europe** in the EU **promote collaboration** between academia and industry.
- **Low Female Participation in Skilling Programs:** Women's participation in **skill development programs** remains limited due to sociocultural barriers and insufficient support systems.
  - Although programs like PMKVY have increased female participation, **gender disparity in high-skill sectors** persists.
- **Infrastructure Deficiencies:** A lack of modern infrastructure, especially in rural areas, limits access to quality training.
  - Training centers in remote regions often lack the necessary resources, making it difficult for youth in these areas to receive **effective skill development**.
- **Mismatch Between Demand and Supply:** There is a large gap between the skills imparted through training programs and the skills required by industries.
  - Sectors such as **AI, cybersecurity, and renewable energy** require specialized skills that existing programs fail to address effectively.
- Also, a large number of ITIs lack trained instructors to operate essential machinery.
- **Poor Recognition of Informal Skills:** India's informal workforce, despite being skilled, lacks formal recognition for their expertise.
  - Initiatives like **Recognition of Prior Learning (RPL)** are working to certify informal skills, but outreach and implementation remain limited.
- **Lack of Apprenticeship and On-the-Job Training:** The apprenticeship model is underdeveloped in India compared to other countries like Germany.
  - While programs like **National Apprenticeship Promotion Scheme (NAPS)** provide financial incentives for apprenticeships, industry reluctance to engage apprentices limits the overall impact.

Key Skill Development Schemes and Initiatives

- **Skill India Mission**
- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)**
- **Pradhan Mantri National Apprenticeship Promotion Scheme (PM-NAPS)**
- **India Skills Accelerator (ISA)**
- **Pradhan Mantri Kaushal Kendras (PMKK)**
- **PM Vishwakarma Yojana**
- **SANKALP (Skills Acquisition and Knowledge Awareness for Livelihood Promotion)**
- **STRIVE (Skill Strengthening for Industrial Value Enhancement)**
- **Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)**
- **Recognition of Prior Learning (RPL)**

How Effective have Government Initiatives Been in Promoting Skill Development?

- **Government Interventions and Initiatives:** The Indian government has launched several initiatives, including **Skill India and PMKVY**, to tackle skill shortages.
  - These programs target both short-term and long-term training, aiming to equip the workforce with industry-relevant skills.

- However, their **overall effectiveness** is limited by challenges such as poor industry alignment and inconsistent training quality.

- **Restructured Skill India Programme:** India's skill development system has faced challenges due to a **siloed approach**, limiting the impact of programs.
  - The lack of industry-academia convergence has hindered effective skilling and employability, necessitating a more integrated and industry-aligned approach.
  - The restructuring of the **Skill India Programme** combines key components such as **PMKVY 4.0, PM-NAPS, and JSS.**
  - This **composite scheme aims to align training with industry needs** and enhance employability through structured skill development and international mobility initiatives.
- **Low Placement Rate:** PMKVY and the Skill India Mission have successfully trained millions of individuals across India.
  - However, despite enrolling **31.55 million** candidates, only **18%** of **PMKVY-trained** individuals have secured employment.
  - This **low placement rate** underscores the need for better alignment between training programs and actual industry requirements.
- **Apprenticeship Training and DBT:** Apprenticeship programs under PM-NAPS have grown, with 2,77,036 apprentices engaged in FY 2024-25. The total number of apprentices undergoing training as of July 2024 is 7.46 lakh.
  - The **Direct Benefit Transfer (DBT)** system has also seen significant growth, with ₹122.36 crore disbursed to apprentices through DBT.
  - However, industries remain hesitant to engage apprentices due to concerns about **high training costs and potential attrition**.
  - This limited participation reduces the scheme's **overall effectiveness** in enhancing real-world training opportunities for youth.
- **Increased Female Participation:** Government programs like PMKVY and JSS have focused on increasing female participation in skilling initiatives.
  - Although the **number of women** trained has risen, gender inclusivity remains a challenge, particularly in high-skill sectors like technology and manufacturing, where women's participation is still low.
- **Sector-Specific Initiatives:** The government's focus on sector-specific skill programs, such as **PM Vishwakarma**, aims to modernize traditional skills.
  - These programs incorporate emerging technologies, ensuring that workers are equipped with both heritage skills and **future-ready competencies** in areas like AI, renewable energy, and green technologies.
- **Digitization of Skill Development:** The **Skill India Digital Hub** has significantly improved access to skill training through online platforms.
  - With over **60 lakh** learners registered, this initiative provides scalable solutions for **skill development**, particularly benefitting remote and underserved populations, thus democratizing access to high-quality education.
- **Quality Assurance and Recognition:** Aligning certifications with the **National Skills Qualification Framework (NSQF)** ensures formal recognition of skills acquired through various programs.
  - While this is a step forward, further work is **required to enhance the value of these certifications**, particularly for workers in informal sectors where recognition remains a challenge.
- **Private Sector's Role:** Private sector involvement has been crucial in scaling up skill development efforts, particularly through **CSR programs**.
  - **Collaborations with the government have improved the quality of training** and ensured that it meets the demands of industries, thus contributing to a more effective skilling ecosystem.
- **Technological Innovations in Skilling:** Technological platforms like **SWAYAM** and **Kaushal Bharat** have expanded access to skill training across India.
  - These platforms leverage **AI and data analytics** to create personalized learning paths, making it easier for individuals from diverse backgrounds to gain skills relevant to today's job market.
- **Skilling India at Global Standards:** India's efforts to meet global skilling standards are seen in the **Skill India International Centers** and strategic MoUs with countries like **France and Germany**.
  - The NSDC has engaged in over **131 industry partnerships**, benefiting over 3.10 lakh individuals.
  - Initiatives like the **Skill Impact Bond** have attracted private sector funds for training and job placements.

What Reforms are Needed to Bridge the Skill Gap and Enhance Employability?

- **Improved Mapping of Skills to Market Needs:** India's skilling ecosystem requires better alignment of skills with job market needs.
  - **Sector Skill Councils (SSCs)** can help in mapping skills to market demand, but a more coordinated effort is needed across sectors to ensure relevant training.
- SSCs set up as autonomous, industry-led bodies by the **National Skill Development Corporation (NSDC)**, align with **NSQF** and standardize affiliation, accreditation, and certification processes.
- **Enhanced Industry-Academia Collaboration:** Deepening collaboration between industries and educational institutions will ensure that **skilling programs** meet current demands.
  - Joint efforts between **industries and academia** will lead to curricula that better prepare students for the workforce.
- **Expansion of Apprenticeships and Work-Based Learning:** Expanding apprenticeship opportunities is critical to providing real-world experience.
  - **Reforms to the Apprenticeship Act** must incentivize employers to engage in apprenticeships, particularly in high-growth sectors like **AI, renewable energy, and cybersecurity**.
- **Focus on Gender Inclusivity:** To increase female participation, skilling programs must address the sociocultural barriers that limit women's access to training.
  - **Gender-responsive training centers**, flexible schedules, and childcare facilities will help ensure greater female participation.
- **Digital Skilling and Infrastructure Development:** India must expand digital learning infrastructure to provide skills training in emerging technologies like **AI and blockchain**.
  - The **Skill India Digital Hub** should be enhanced to provide more accessible, region-specific, and interactive learning opportunities.
- **Recognition of Informal Skills:** Reforms should focus on **formalizing informal sector skills, providing certifications for existing expertise.**
  - This will enable workers to access better jobs and improve their wage prospects, especially in sectors like construction, where informal skills are prevalent.
- **Private Sector Involvement:** Private sector participation must be encouraged through **tax incentives, grants**, and industry-led training programs.
  - These partnerships will ensure that skilling programs are sustainable and aligned with real-time industry needs.
- **Soft Skills and Professional Readiness:** Integrating soft skills training, such as **communication, leadership, and problem-solving**, into **vocational education** is essential.
  - These programs will ensure that graduates are job-ready and can excel in the modern workplace, enhancing their employability.

Conclusion

India's skill development initiatives are pivotal in aligning the workforce with emerging industry demands. The government's strategic reforms, along with active private sector involvement, are essential to bridging **skill gaps and fostering employability**. These efforts will play a crucial role in unlocking India's **demographic dividend** and ensuring **sustainable economic growth**.

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