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DAILY EDITORIAL ANALYSIS

TOPIC

WOMEN, STEM CAREERS, AND A MORE RECEPTIVE INDUSTRY

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Context

- Over the last decades, the presence of **women in Science, Technology, Engineering, and Mathematics (STEM) careers** has grown steadily.
  - However, it seems that the Indian industry is losing out by not investing in STEM careers for India's women.

Women in STEM: Workforce Representation

- Globally, women made up about 28.2% of the STEM workforce in 2024.
  - In the UK (2022/23), women made up 26% of the STEM workforce, up from 21% in 2016.
- In India, only about **27% of the STEM workforce** comprises women, despite producing about **43% of India's STEM graduates are women** *(one of the highest ratios globally).*
- According to the **Periodic Labour Force Survey (PLFS) 2023-24**, India's **Female Labour Force Participation (FLFPR)** has improved to **41.7%**, driven largely by **rural women (47.6%)** compared to just **25.4% in urban areas.**
  - It masks persistent structural barriers—especially in formal sectors like STEM — linked to **safety concerns, social norms, and limited access to career pathways.**
- The **McKinsey Global Institute** estimates that enabling **68 million more women** in India's workforce could boost **GDP by $700 billion by 2025**.
- The **World Bank** similarly finds that reaching **50% female workforce participation could raise GDP growth by 1%.**

Challenges & Barriers: Missing Link in Women's STEM Careers

- **High Attrition:** Nearly 50% of women in tech leave the workforce by mid-career, often due to societal pressures or inflexible work environments.
  - Studies by **World Bank** and **UNESCO** affirm that women do not leave STEM due to lack of capability, but because of **unwelcoming workplaces**, **limited family support**, and **deeply gendered roles**.
- **Pay Gap:** Women in STEM roles often earn 20–30% less than male counterparts.
- **Leadership Gap:** Women hold fewer than 10% of leadership roles in Indian tech firms, even though they are entering the field in larger numbers.

Government-Led STEM Skilling: Toward Inclusion & Opportunity

- The **National Education Policy (NEP) 2020** integrates **STEM education** with life skills training, supporting long-term retention.
- Revitalised **Industrial Training Institutes (ITIs)** and expanded **vocational programmes** are making technical education more accessible in rural areas.
- The **Gender Budget** has increased to **8.8%** of the total budget in 2025-26, with **₹4.49 lakh crore** allocated to gender-focused initiatives.
  - The **Union Budget 2025-26** introduced targeted measures including **term loans for women entrepreneurs**, **new National Skill Training Institutes**, and **tech-driven skilling investments**.
- **India's Policy Framework:** Programs such as ***Vigyan Jyoti, UDAAN, Skill India to Digital India, and from 'Beti Bachao, Beti Padhao' to PM Vishwakarma Yojana*** motivate school-aged girls to consider STEM paths early.
- Hybrid and remote work policies encourage better work-life balance.
  - Companies like Infosys, Wipro, and TCS offer re-entry pathways for women after career breaks.

Promising Models of Industry Intervention

- Structured **mentorship programmes**, **industry-academia partnerships**, and **on-site training initiatives** are linking classrooms to careers
- One standout initiative is the **UN Women's WeSTEM programme**, supported by the **Micron Foundation** and implemented in partnership with the **Governments of Madhya Pradesh and Gujarat**. The programme:
  - Offers skills training and internships;
  - Engages families and communities to shift mindsets;
  - Conducts workplace safety workshops;
  - Introduces female STEM role models in classrooms.
  - Indian Industries need to focus these things to fully unlock India's economic potential:
  - **Collaborate with educational institutions** to tailor skill development;
  - **Establish mentorship networks** that guide women through STEM pathways;
  - **Adopt workplace policies** that support life transitions and ensure safety.

Conclusion: Skills as a Catalyst for an Inclusive India

- On World Youth Skills Day 2025, there is a need to recognise that **empowering women with STEM skills is not just an educational goal—it's a national development priority**. Government support has laid the groundwork. Now, **industry must lead the charge** by creating an ecosystem where every skilled woman finds a welcoming, rewarding, and dignified place in the workforce.

World Youth Skills Day

- **When:** July 15 (annually), established by UNGA in 2014
- **Theme for 2025:** *'Youth Empowerment Through AI and Digital Skills'*
- **Key Focus:**
  - Empowering youth through AI and digital skills;
  - Bridging the digital divide, especially for marginalized communities;
  - Promoting inclusive and ethical AI in education and training.
- **UNESCO and UNEVOC** are hosting global events in Paris and New York to explore how AI is **reshaping Technical and Vocational Education and Training (TVET)** systems.

Key Statistics

- 450 million youth globally remain economically disengaged due to lack of skills.
- 86% of students feel unprepared for AI-driven workplaces.
- In India, over 50% of youth are not job-ready for emerging tech roles like data science and cybersecurity.
- Digital exclusion affects 90% of adolescent girls in low-income countries

Source: TH

Mains Practice Question

[Q] Discuss the challenges and opportunities faced by women in STEM careers. How can industry reforms contribute to creating a more inclusive and receptive environment for female professionals in science and technology?

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