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In fact

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'In Fact' *is a quarterly newsletter by ISDM DataShakti. ISDM DataShakti, powered by Capgemini, is a pioneering single-window SDG data platform that makes SDG data easily accessible to social sector professionals like you, so you can focus on creating change on the ground.*

A Story in Numbers

In this age of AI, India's Women Are Being Left Behind in STEM and Skilling

By: Siddharth Dhote

Following the International Day of Women and Girls in Science, we spotlight women's representation in STEM and the need to empower them to shape the future.

UNESCO's 2024 global education monitoring report states that women account for 35 per cent of STEM graduates worldwide. The underrepresentation of women in STEM is a significant global challenge. Increasing women's participation in the emerging labour market shaped by automation and AI is vital. Integrating AI, social science, STEM, and finance can advance inclusive development, close gender gaps in digital skills, and channel finance toward social inclusion.

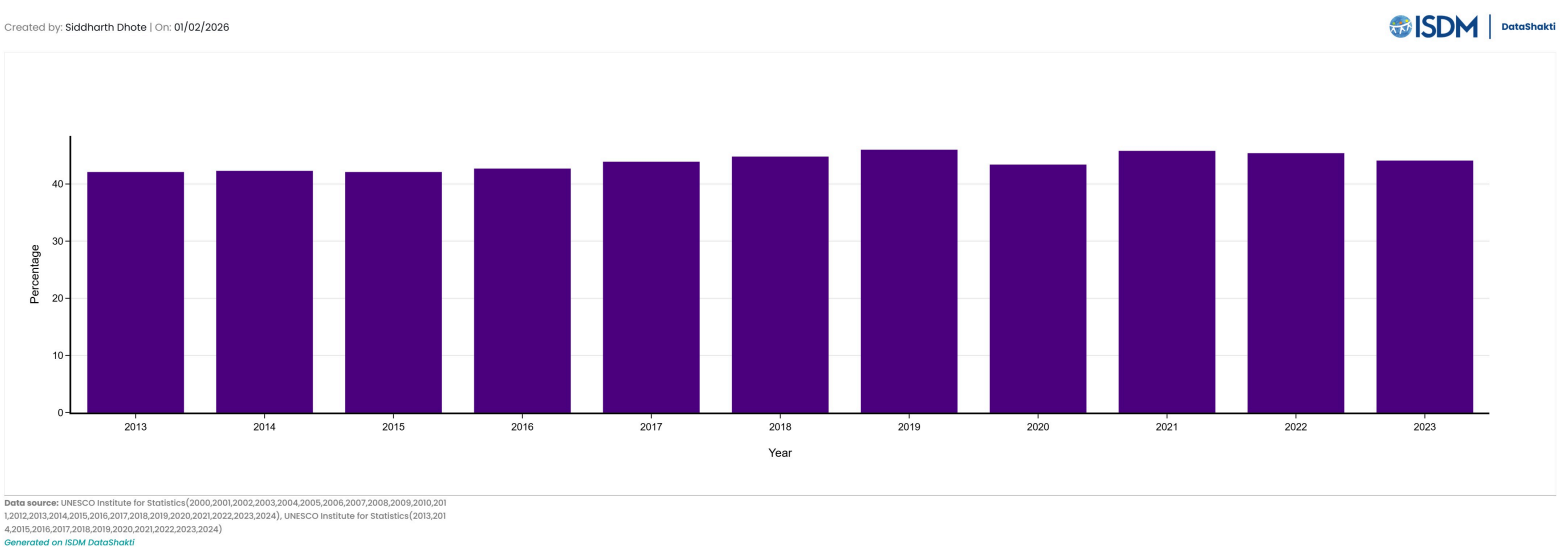
In India, according to the UNESCO Institute of Statistics, the proportion of women graduating in STEM fields at the tertiary level remained between 42% and 44% from 2013 to 2023 (Figure 1). This figure is supported by the 2021-22 All-India Survey on Higher Education (AISHE), which shows that 42.6 per cent of tertiary-level STEM graduates are women[1]. This rate is higher than in advanced countries such as the United States (32-38%), Germany (27-28%), and Australia (31-33%)[2]. Although these figures seem encouraging for India, they are quite small relative to the total female population over 15 years old, which is the globally recognised legal working age. According to AISHE 2021-22, 4.2 million women are enrolled in tertiary STEM programs, while the 2021-22 census estimates the female population aged 15 and above at 485 million[3]. Consequently, fewer than 1% of women pursue higher education in STEM fields.

[1] Department of Higher Education, Ministry of Education. (2022). *All India Survey on Higher Education 2021-22*. Government of India.

[2] World Bank. (n.d.). *Share of graduates by field, female (%)*. World Bank Gender Data Portal. Retrieved February 6, 2026, from https://genderdata.worldbank.org/en/indicator/se-ter-grad-fe-zs

[3] National Commission on Health. (2020). *Population Projection for India and States 2011-2036*. Ministry of Health and Family Welfare. https://ruralindiaonline.org/en/library/resource/population-projections-for-india-and-states-2011-2036/

Figure 1: Female Graduates from STEM Programs in Tertiary Education (%)

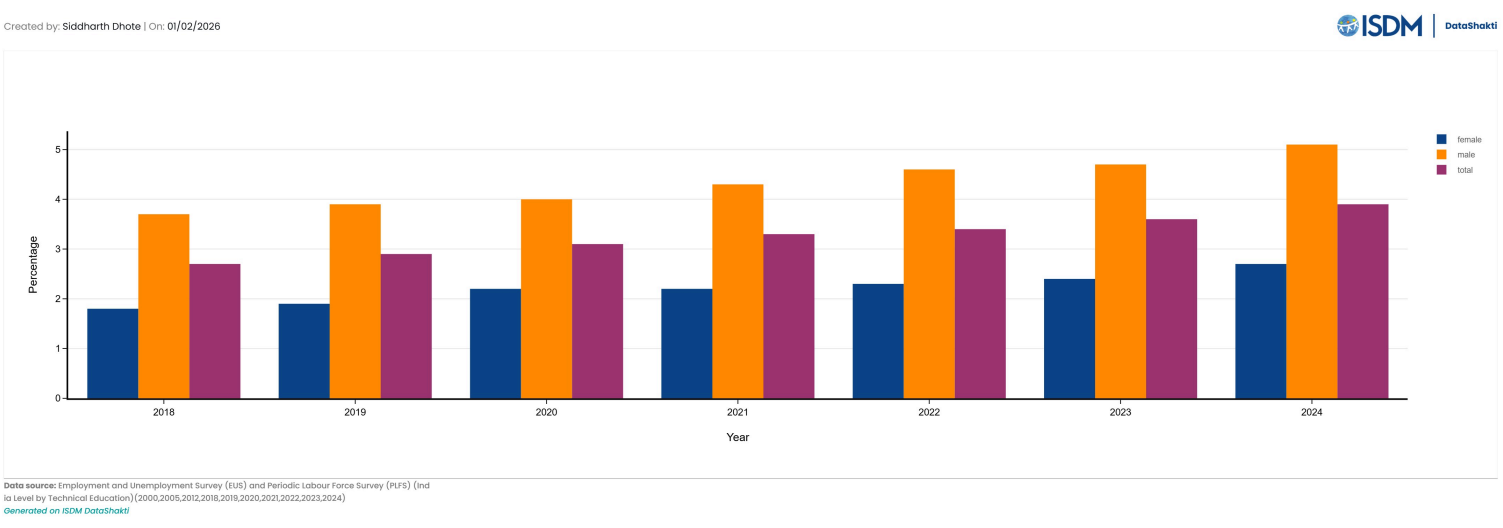


In addition to enrolment in tertiary education, skilling plays an important role in employability, by providing exposure to–and practical experience in–industries and sectors. The relevance of skilling is reflected in the ₹660 crore gender allocation under the India AI Mission in 2025, 33% of the total program allocation[4]. It signals an intent to include women in India's AI push and in STEM in general.

Women's participation in STEM-based skilling can be analysed using data from the Periodic Labour Force Survey (PLFS). The PLFS data does not provide information on technical education in science, but it does provide data on technical education in Engineering/ Technology, which can be used as a proxy. The share of the 15-plus population in technical education was 3 per cent in 2017-18 and increased to 4 per cent by 2023-24. For males, the shares increased from 4 to 5 per cent during the same time period. For females aged 15 and above, the share increased from 2 to 3 per cent between 2017-18 and 2023-24 (Figure 2).

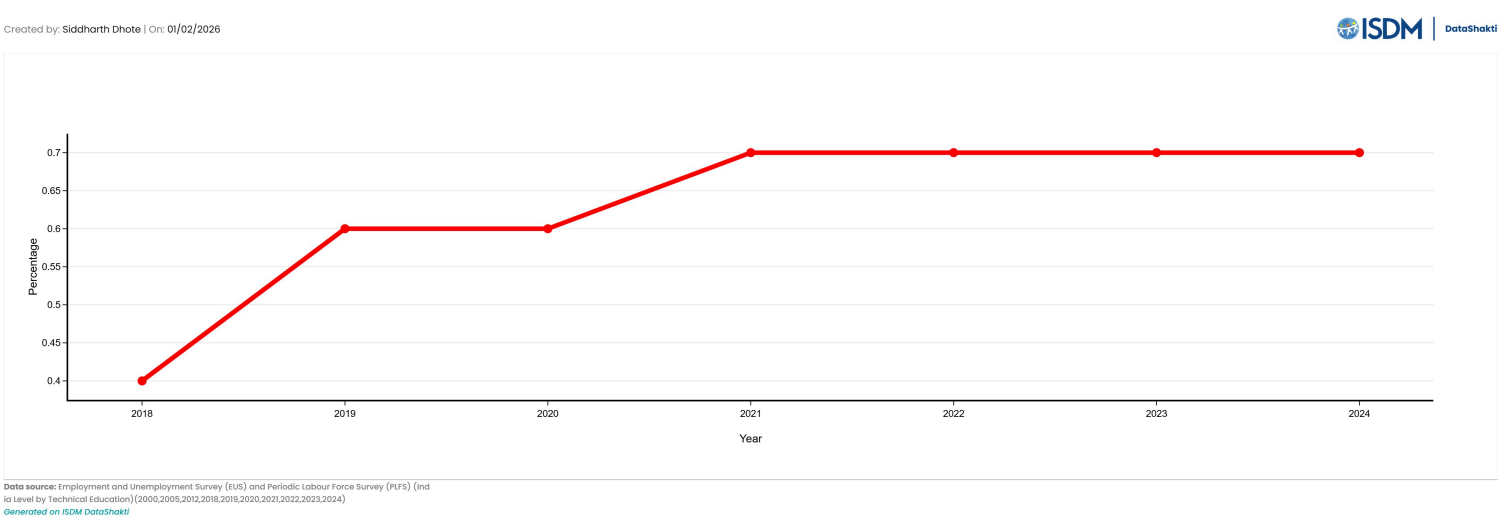
[4] Prakash, S., Goyal, T., & Ramesh, A. (2026, January 26). Expectations from a gender lens in Budget 2026-27. *The Hindu*.ttps://www.thehindu.com/data/expectations-from-a-gender-lens-union-budget-2026-27/article70562510.ece

Figure 2: Male and Female 15+ in Technical Education as a share of total 15+ population (%)



The share of women in skill training in the domain of Engineering/Technology has remained below 1 per cent between 2017-18 and 2023-24 (Figure 3).

Figure 3: Females 15+ with Technical Education in engineering/Technology as a share of total 15+ population (%)



The analysis above shows low representation of women in STEM education, and the limitations of the skill development initiative in India. The shortcomings of the skill development ecosystem, if left unaddressed, would disproportionately affect women's transition to STEM education and training and their employability in STEM roles. The skill development ecosystem in India currently relies on short-term training programmes, which yield poor employment outcomes[5]. For better outcomes, the skill development landscape will require programs that not only translate into competitive wages, aspirational jobs such as STEM-oriented roles, and strong industry linkages, but also sensitise those formulating and executing training-related policies to the biases women face in accessing training, particularly STEM training.

If India truly aims to become a global skill hub, particularly in STEM fields, it must prioritise quality over quantity, invest in long-term training programmes, and increase the private sector's accountability in vocational training rather than merely serving as a spectator. Gender biases must also be addressed to ensure the participation of women, as anything less would be a disservice to millions of Indians hoping for a better future.

[5] Chhillar, A. (2025). *Why Training Alone Won't Fix India's Skills Problem*. Observer Research Foundation. https://www.orfonline.org/expert-speak/why-training-alone-won-t-fix-india-s-skills-problem)

News and Updates

- ISDM DataShakti launched ***Transforming Data into Action: Developmental Perspectives from India***, a multi-theme data storybook. It brings together evidence-based insights on India's development landscape using national, state, and district-level data, analysis, and visual charts. Find it here.
- Good news for all subscribers: the platform now has 158 Datasets and 2240 Indicators, giving you even more data to use in your work.

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