


PIAAC Bite Series

The link between innovation and workplace learning: Singapore in comparative perspective

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 <p>INNOVATION</p>	<p>What if workplace learning is the fizz of innovation—visible in the small, everyday ways of how people learn at work? In Singapore, this fizz is strong but less widespread, frequent, and inclusive than in leading innovation economies. Where innovation is present, workplace learning rises. These ‘bubbles’ reveal how deeply innovation must be lived across workplaces to meet Singapore’s innovation ambition.</p>
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Workplace learning: a powerful contributor to Singapore’s innovation agenda

As Singapore aims to lead as a global AI and innovation hub, what if workplace learning is a signal to watch?

Think of innovation as the fizz in a drink. You do not measure it by what is written on the label—you see it in the bubbles. In the workplace, those bubbles can look like this: a worker figuring out a new AI tool, redesigning how a task is done, brainstorming new ideas with colleagues. That is workplace learning. It shows that skills are being used and refreshed continuously, not just built through occasional external training.

Workplace learning can happen at any time at work. It is therefore a strong signal of real skills development and application, complementing job-related structured training. Indeed, OECD’s study of skills development of adults in advanced economies (PIAAC) shows that workers’ participation in workplace learning is consistently higher than their participation in job-related structured training globally (OECD, 2025).

But in innovative economies, the bubbles of workplace learning matter even more. It is workplace learning that enable how new ideas and technologies actually take hold—tested, adapted and improved in daily work. Put simply: if the economy is truly innovative, workplace learning is evident everywhere.

This makes studying trends in workplace learning especially important for Singapore’s innovation ambition. The city-state ranks among the world’s best in innovation inputs (No. 1) but is a significant laggard on performance for innovation outputs (No. 9) (World Intellectual Property Organisation, 2025: Global Innovation Index). Most of the top 10 innovative economies convert inputs into outputs far more effectively than Singapore (see **Table 1** in the next section).

This gap in Singapore in terms of turning innovation inputs into outputs points to a challenge in translation. One possible missing link is workplace innovation culture. What if workplace learning is part of that link—a signal that innovation is truly being lived, not just invested in?

Where Singapore can do more: Coverage, intensity and breadth of participation

Using data from the OECD’s 2023 Survey of Adult Skills (PIAAC), we compare Singapore’s workplace learning trends with those in Switzerland, Sweden, and the United States—the top three innovative economies in the Global Innovation Index (**Table 1**). All three economies outperform on innovation outputs relative to their innovation inputs – a strong indicator of actual innovation.

Table 1. Innovation performance of countries, 2025

Country	Overall rank	Innovation inputs	Innovation outputs
Switzerland	1	2	1
Sweden	2	3	2
US	3	6	3
Singapore	5	1	9

Source: World Intellectual Property Office - Global Innovation Index 2025

To conceptualise workplace learning, we use two measures of informal learning in PIAAC: learning new things at work and learning by doing at work. Across these dimensions, Singapore trails behind in coverage, intensity, and breadth of participation as described below.

- **Workplace learning coverage**

At 89 per cent of the workforce, Singapore’s workplace learning participation is strong. Yet in Switzerland, Sweden and the United States, workplace learning has near universal participation, reaching 96 to 99 per cent of their workforce. Singapore should strive towards similar coverage, closing a gap of about 10 percentage points.

Table 2. Workplace learning coverage of workers aged 25-65 years, 2023

	Singapore	Switzerland	Sweden	United States
Participation in either learning new things at work or learning by doing	88.8%	97.9%	99.0%	96.3%

Data source: OECD PIAAC, analysis by IAL

- **Workplace learning intensity**

About half of workers in Switzerland, Sweden and the United States engage in workplace learning at least once a week (46-52 per cent). In contrast, only one third of workers (32 per cent) in Singapore match this level of intensity. This points to the need to invest more effort to make learning a sustained rhythm of work.

Table 3. Workplace learning intensity experienced by workers aged 25-65 years, 2023

	Singapore	Switzerland	Sweden	United States
Participation in either learning new things at work or learning by doing at least once a week	31.8%	51.9%	47.3%	46.4%

Data source: OECD PIAAC, analysis by IAL

- **Breadth of participation**

In Switzerland and the United States, frontline and operational staff—including service and clerical workers—participate strongly in workplace learning, at levels comparable to professionals, managers, and technicians (PMETs). Specifically, non-PMET participation in workplace learning in Switzerland and the United States is at 96 per cent and 92 per cent respectively. In contrast, participation among non-PMETs in workplace learning in Singapore falls significantly short – at just 71 per cent. The intensity of workplace learning among non-PMET workers is also low at only 18 per cent, compared to 46 and 41 per cent in Switzerland and United States respectively. Because many practical innovations are facilitated at the frontline—where processes are refined and customer insights sharpened—limited participation in workplace learning in this segment risks leaving significant innovation capacity untapped.

Table 4. Workplace learning participation and intensity by occupation among workers aged 25-65 years, 2023

	Singapore		Switzerland		United States	
	Participation	Intensity (at least once a week)	Participation	Intensity (at least once a week)	Participation	Intensity (at least once a week)
PMETs	97.0%	38.0%	99.4%	55.5%	99.2%	50.3%
Managers	96.7%	39.3%	99.2%	54.2%	99.6%	51.2%
Professionals	98.5%	43.1%	99.7%	58.8%	99.6%	52.0%
Associate professionals and technicians	95.7%	31.5%	99.4%	53.6%	98.2%	47.8%
Other workers	70.8%	18.2%	95.8%	45.6%	91.9%	40.7%

Data source: OECD PIAAC, analysis by IAL

A different lens: Tracking innovation diffusion through workplace learning

Tracking workplace learning matters for another reason: it may offer a window into the state of innovation within workplaces. In Singapore, when workers are exposed to innovation at the workplace, participation in workplace learning rises substantially (+18 per cent)—alongside increases in job-related structured training (+26 per cent) (Table 5).

Table 5. Participation in job-related structured training and workplace learning, by innovation reported at the workplace among workers aged 25-65 years, 2023

	Job-related structured training			Workplace learning		
	No innovation reported at workplace	Innovation reported at workplace	Increase observed	No innovation reported at workplace	Innovation reported at workplace	Increase observed
Singapore	27.4%	53.0%	+25.6%	78.7%	96.7%	+18.0%
Switzerland	34.7%	47.1%	+12.4%	95.9%	99.3%	+3.4%
Sweden	41.1%	51.9%	+10.8%	98.0%	99.5%	+1.5%
United States	54.1%	70.6%	+16.5%	92.8%	99.0%	+6.2%

Data source: OECD PIAAC, analysis by IAL

In more complex forms of innovation in Singapore that integrates technology, workplace and product innovation, workplace learning rises even more (+21 per cent) (Table 6).

Table 6. Participation in job-related structured training and workplace learning in Singapore, by types of innovation reported among workers aged 25-65 years, 2023

Types of innovation	Job-related structured training		Workplace learning	
	Participation	Increase compared to no innovation	Participation	Increase compared to no innovation
No innovation	27.4%	-	78.7%	-
Technology-workplace methods-product	59.1%	+31.7%	99.7%	+21.0%
Technology only	51.7%	+24.3%	92.9%	+14.2%
Workplace methods only	53.4%	+26.0%	95.6%	+16.8%
Product only	34.0%	+6.6%	91.8%	+13.1%

Data source: OECD PIAAC, analysis by IAL

Combined, this analysis shows that workplace learning is a useful coincident indicator in Singapore—to track how far innovation is diffusing across the economy through active workforce involvement. This finding also points to a need for closer integration between job-related structured training and workplace learning. At present, these two skills development provisions are often treated as separate domains in Singapore. This analysis suggests they should be more tightly aligned to support innovation efforts. This means strengthening the capabilities of learning and development (L&D) teams as well as adult educators to jointly facilitate both structured training and workplace learning meaningfully to advance workplace innovation goals.

Conclusion

Singapore’s next step is to make workplace learning more pervasive, frequent, and inclusive—especially at the frontline. Just as important, workplace learning and structured training must be better integrated to support workplace innovation. Done well, workplace learning becomes both a driver and a signal of innovation—showing whether ideas are truly taking hold across the economy and supporting national level efforts to close the performance gap between innovation inputs and innovation outputs.

To cite this research

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