

# Elevating TAE Business, Jobs and Skills

Findings from the Training and Adult  
Education Landscape Study 2

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# 1. Introduction

## 1.1 Background and policy context

This national study on the training and education (TAE) landscape in Singapore was conducted between 2021 and 2023. It is the second iteration of the TAE landscape series, following the first TAE study (TAE1) which captured baseline information about the organisations and professionals working in the TAE sector between 2017 and 2019. Building on the key findings of the TAE1 study, this iteration provides deeper insights into how TAE providers (TPs) and TAE professionals experience changing circumstances and navigate economic shifts. It also provides insights into the capacity of the TAE sector to address future challenges and capitalise on the possibilities and affordances of adult learning.

This research comes at a time when the demand for skills essential to navigate the digital and green transitions is at the forefront of global policy priorities. It is also a time when societal leaders are working hard to adapt to ongoing geopolitical and economic challenges and develop towards becoming an inclusive society. In Singapore, where such changes are having a profound impact on businesses, jobs and skills demand, Minister of Education, Mr Chan Chun Sing underscored the critical role of the TAE sector in equipping individuals with the necessary capabilities to navigate these challenges<sup>1</sup>. Recognising the pivotal role of the TAE sector in fostering adaptability and resilience to empower individuals and organisations to thrive in dynamic and rapidly changing environments, he urged agile development in training programmes to meet evolving industry and individual needs. He has also emphasised that fostering closer collaboration with employers is critical to strengthen our collective understanding of the skills landscape and to prepare the workforce for the future.

When we began our research in 2021, a key focus at that time was on the impact of Covid-19 that exposed points of fragility but also opportunities across the TAE sector. Consequently, the TAE sector demonstrated agility and resilience in dealing with the challenges posed by the Covid-19 pandemic. TAE providers and their practitioners transitioned to online and blended learning models, while building digital infrastructures to support this shift. Now, with the rapid rise of generative AI, adult educators are navigating ways to effectively and equitably integrate advanced technologies into their work. A more recent focus of our research has therefore been on understanding how generative AI is influencing adult learning and training practices, including curriculum development, assessment, and the professional development of adult educators. Beyond the surge in generative AI, the changing nature of work and growing importance of work-based learning, along with key policy developments, continue to mediate the TAE landscape. This includes recent adjustments to SSG's funding criteria for Workforce Skills Qualifications (WSQ) provision as part of a strategic move to enhance the overall quality of TAE provision (Bound et al, forthcoming) and expanded role of the Institutes of Higher Learning (IHLs)<sup>2</sup> to lead on the provision of training in eight sectors identified as key areas of growth under the SkillsFuture Series scheme. These policy shifts see increased funding directed to IHLs (Singapore Parliament, 2018; 2022), contributing to new dynamics in the TAE business.

<sup>1</sup> Skills Demand for the Future Economy 2023/24 report sdfe-2023.pdf (skillsfuture.gov.sg)

<sup>2</sup> <https://www.google.com/url?q=https://www.straitstimes.com/singapore/universities-to-play-bigger-role-in-adult-education-with-new-skillsfuture-series-of&sa=D&source=docs&ust=1704404841781882&usg=AOvVaw3BJip2QCaWzZ731-ozPfc8>



Based on our research findings there is a clear and pressing need to support the TAE sector to debate the opportunities and challenges related to generative AI and its impact on education, the world of work and society<sup>3</sup>. While recognising the significant value new technologies offer, the TAE sector, employers, and learners are also confronted with the challenge of mitigating the associated risks posed by generative AI. With a commitment to reduce carbon emissions by 2050 through progressive policies such as the Singapore Green Plan (2030), the TAE sector plays a pivotal role in equipping the workforce with essential and transferable green skills. The newly established Green Skills Committee (GSC)<sup>4</sup> convening for the first time in November 2023, brings together key industry players to discuss the development of skills in line with industry needs as they transform to meet the requirements of a sustainable, lower-carbon economy. Chair of the GSC, Ministry of Trade and Industry's (MTI) Permanent Secretary (Development) Dr Beh Swan Gin reinforces the role of TPs to 'better support our companies and workers in developing the skills needed to take on new job opportunities that will accompany our transition into a sustainable, lower-carbon economy'. This represents a growing imperative for TPs and TAE professionals to demonstrate adaptability, foster collaboration and expand their horizons to position themselves as pivotal contributors to the TAE ecosystem who are actively shaping a workforce for the future.

The task assigned to the TAE sector is undeniably challenging. For it to succeed, greater attention to job content and job resources, as well as deep capability development of TPs and their professionals is required. This involves prioritising a focus on learning by doing, co-creation, brokering and strengthening alignment between adult learning and industry, with educators who are well-connected with industry to broker learning opportunities for their learners. Moreover, advancing the integration of AI within TPs is imperative, requiring the continuous development of digital literacy and AI knowledge and skills. Strengthening TP capacity for innovative and quality offering should be a collaborative effort, closely coordinated with key partners in the TAE ecosystem. Achievement in this undertaking is inherently linked with an organisation's dynamic capability and their strategic use of internal and external resources to navigate challenges, adapt to changing circumstances and achieve positive outcomes.

The key findings from this study are expected to inform policy, improve practices, and contribute to the overall enhancement of the TAE sector in Singapore.

## 1.2 Objectives of the study

A key objective for the TAE2 study is to investigate the changing landscape of the TAE sector. This includes an exploration into the changing profile of TAE training providers and professionals working within the sector. We also explored developments in pedagogical and business innovation, as well as emerging trends in TAE jobs and skills and the impact of Covid-19 and digitalisation on the TAE sector.

A second objective of our study is to shape training and adult education through being informed by the latest thinking and developments in the practice and innovation of TAE skills, currency and job quality, blended / hybrid learning; dynamic capabilities of training providers; the use of AI in training and adult education; and the professional development of adult educators.

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3 McKinsey Quarterly - Q4 2023 - Flipbook - Page 53

4 New Green Skills Committee to support Skills Development for Green Jobs (mti.gov.sg)

A third objective of the study is to develop a deep sensing of the future through understanding the latest trends and developments in the TAE sector.

### 1.3 Methodology and data collection

To address the objectives of the study, we employed a five-phase sequential mixed-methods approach (qualitative-quantitative-qualitative-quantitative-qualitative) to comprehensively analyse the evolving landscape of the TAE sector in Singapore.

**Figure 1: Research Methods**



The first phase involved ethnographic case studies of 18 prominent training providers to explore the operational contexts of TAE providers and to gain insights into their different journeys towards success. The criteria used to identify these 18 training providers included, firm size, market share, networks, collaborations and partnerships, advanced use of technology to augment learning, innovative pedagogical practices, and contribution to the TAE sector.

The second quantitative phase comprised a large-scale survey aimed at understanding shifts in profiles and practices within the TAE sector over the past three years. The survey encompassed a diverse range of participants, including adult educators (n=997)<sup>5</sup> such as learning facilitators, assessors, courseware developers, and learning consultants/solutionists; other TAE professionals (n=202), encompassing roles such as training managers, learning technology designers, and human resource managers, as well as business and marketing staff; and Training Providers (TPs) (n=265), spanning public and private entities, in-house training providers, and EdTech companies that provide training or learning content.

<sup>5</sup> 535 adult educators surveyed in TAE1 (2017-2018)

<sup>7</sup> Chen, Z., Ramos, C., Puah, L.D., & Cheng, S. C. (2020). *Training and Adult Education Landscape in Singapore: characteristics, challenges and policies*. Singapore: Institute for Adult Learning. [https://www.ial.edu.sg/getmedia/fa78f92c-d856-41c6-acda-896e93967a52/TAE-Landscape-Report\\_Final1\\_1.pdf](https://www.ial.edu.sg/getmedia/fa78f92c-d856-41c6-acda-896e93967a52/TAE-Landscape-Report_Final1_1.pdf)

In the third phase, semi-structured interviews and focus group discussions were conducted with selected groups of participants (n=100+). This phase aimed to delve deeper into the themes identified in the case studies and initial survey findings, providing more detailed insights into the sector. We also conducted site visits to various companies, to further understand how their organisations organise and implement learning and development strategies at the workplaces.

The fourth quantitative phase consisted of an online survey aimed at understanding the use and perception of AI in education among AEs in the TAE sector. We surveyed 624 AEs over a period of three weeks. In the fifth and final qualitative phase, we conducted a series of focus group discussions to explore in greater detail the impact of AI on the TAE sector. After extending an invitation to all respondents to the AI survey, we selected a small number of participants with a good mix and balance in their use of AI to join the focus group discussions.

## 1.4 Report structure

This report is structured into four main sections. Following an overview of the background to the study, the specific objectives of the study and an overview of our methodology and data collection in section 1, section 2 presents the key research findings mainly from the core survey focusing on key changes in relation to the evolving profile the training providers and the TAE workforce since the first TAE study (2017-2019, see Chen et al 2020<sup>7</sup> for details). Section 3 presents the key conclusions and translates the findings into policy recommendations to support the TAE ecosystem. Section 4 discusses next steps and proposes suggestions for the next iteration of the TAE landscape study.

## 1.5 Terminology and key definitions

### 1.5.1 TAE providers

TAE providers (TPs) provide a wide range of programmes, covering both private and public sector and stretching from PET (Pre-employment Training) to TAE. There are three main types of providers:

- **Public providers:** Adult continuing education and professional development centres in the polytechnics / ITEs / autonomous universities, as well as public sector training institutes.
- **In-house providers:** In-house training providers are employee training units within private companies.
- **Private providers:** Private education institutes / training providers, associations and professional bodies' training arms, business training consultancy organisations, as well as new or emerging players in the TAE sector (e.g., EdTech companies with training content, Queen Bee companies that support the sector capability development, Corporate University/Academy, and other government-endorsed training providers.)

### 1.5.2 Adult educators

Adult educators (AEs) are categorised based on their training involvement and employment status into three main categories.

- **Full-time AE:** full-time employee of the TAE provider whose primary role is training

- **Freelancer:** holds a part-time position or contracted on a freelance basis with training as their primary role
- **Industry Practitioner:** holds an industry position (including as in-house trainer) and doing TAE related work as a secondary role

## 2. Research findings

### 2.1 Key shifts in the profile of TAE providers

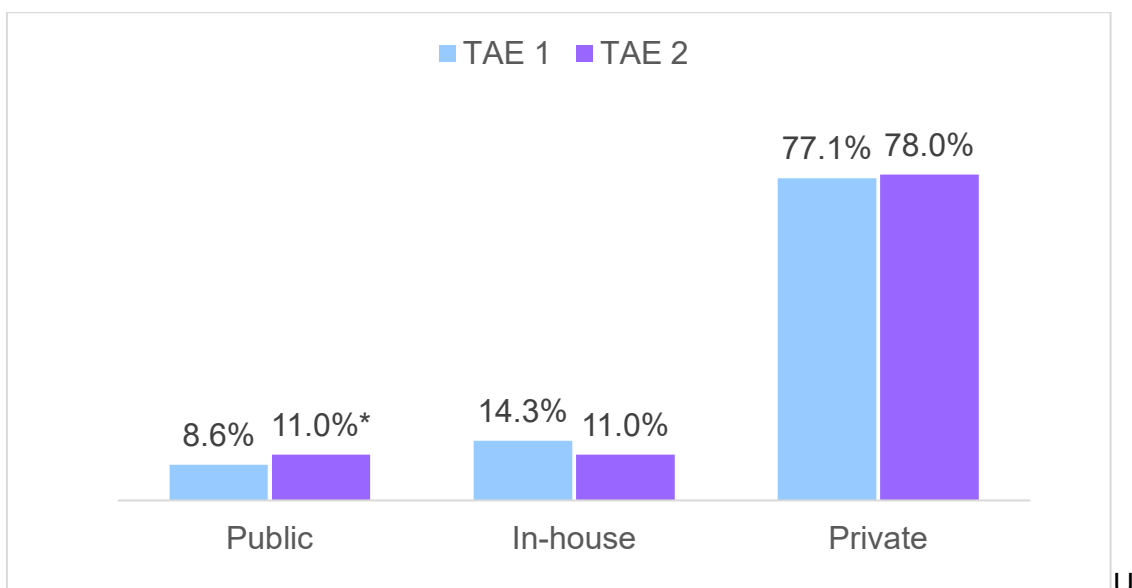
The TAE sector is diverse, with an estimated 4,000 training providers in 2022<sup>6</sup>. These organisations engage approximately 20,000 training professionals<sup>7</sup>, either as permanent staff (60%), as adjunct adult educators (35%, also referred to as associates or freelancers), or on fixed-term contracts (5%). In 2023, the sector provided approximately 3.6 million training places, generating a total revenue of around 1.8 billion Singapore dollars.

In this section, we first focus on the changing profile of TAE providers.

#### 2.1.1 Notable rise in the proportion of public providers

As illustrated in Figure 2, the TAE sector continues to be primarily composed of private training providers. However, there has been a significant increase in the proportion of public providers, from 8.6% in TAE1 to 11.0% in TAE2. This shift reflects the diversity of the landscape and can be partly attributed to recent policy adjustments aimed at directing a larger share of provision to Institutes of Higher Learning (IHLs), with the aim of improving the overall quality of TAE provision (Singapore Parliament, 2018; 2022; Bound et al, forthcoming).

Figure 2: Type of training providers



Note: \*p<0.05.

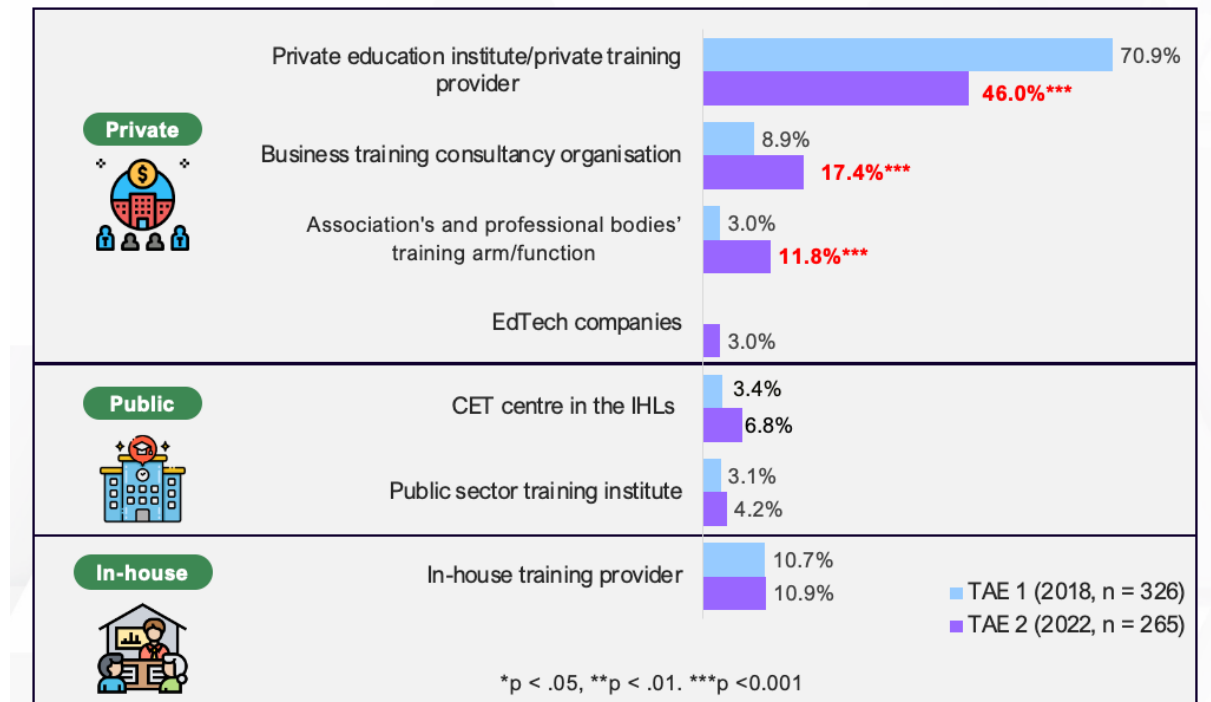
#### 2.1.2 Fewer TAE businesses identify as training providers; business consultancies doubled, and training functions by associations and professional bodies quadrupled

If we look closer at the different TAE businesses, there are further noticeable changes over the last four years. Figure 3 illustrates a significant drop in the percentage of providers who

<sup>6</sup> Based on TAE2 sampling frame.

identify themselves as private “training” providers, from 71% in TAE1 to 46% in TAE2, as many of them provide diverse offerings beyond training. In fact, there has been a marked increase in the percentage of business training consultancy organisations, nearly doubling from 8.9% in TAE1 to 17.4% in TAE2. This proliferation signifies that TAE providers are increasingly adapting, diversifying and customising their services to meet the specific needs of employers and the dynamic demands of the labour market. It is encouraging to see more associations and professional bodies investing in training and professional development.

Figure 3: TAE business types



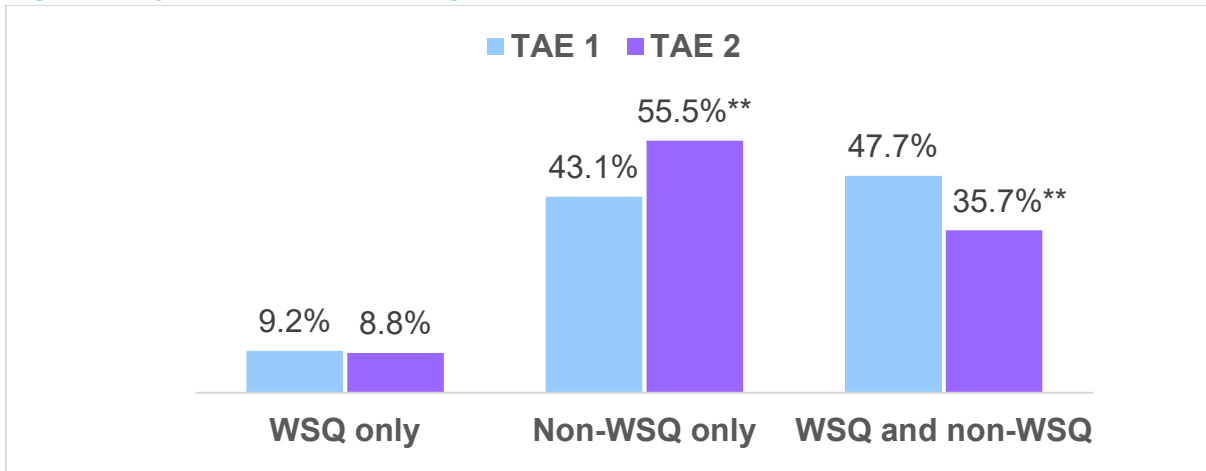
### 2.1.3 Increased shift towards non-WSQ offerings, indicating greater demand for customised, contextualised provision

As illustrated in Figure 4, there has been a notable decline in the proportion of TAE providers offering both WSQ (Singapore Workforce Skills Qualifications) programmes and non-WSQ programmes. Conversely, there has been a significant increase in the number of providers focusing exclusively on non-WSQ offerings.

This shift away from WSQ provision is multifaceted, and reflective of various factors identified in our interviews and focus group discussions. As also found in a recent study by IAL on future-oriented pedagogical practices (Bound et al., forthcoming), this shift is largely attributed to the perceived rigidity of the WSQ model, which is seen as limiting flexibility and innovation in teaching and learning and restricting practitioner agency and autonomy. Key issues include the balance between adhering to the Skills Framework and maintaining the flexibility to adapt curricula and assessments for diverse learner profiles, as well as the challenge of keeping skills frameworks relevant amid rapid technological advancements and evolving industry practices. This transition signifies a growing departure from standardised provision toward a model that increasingly prioritises customised, contextualised provision to support workforce development and industry transformation. This trend is evident from the growing number of

business training consultancy organisations (as in figure 3 above) and TAE practitioners showcasing flexibility and responsiveness in meeting the evolving dynamics of the TAE sector.

**Figure 4: Type of course offering (WSQ vs non-WSQ)**

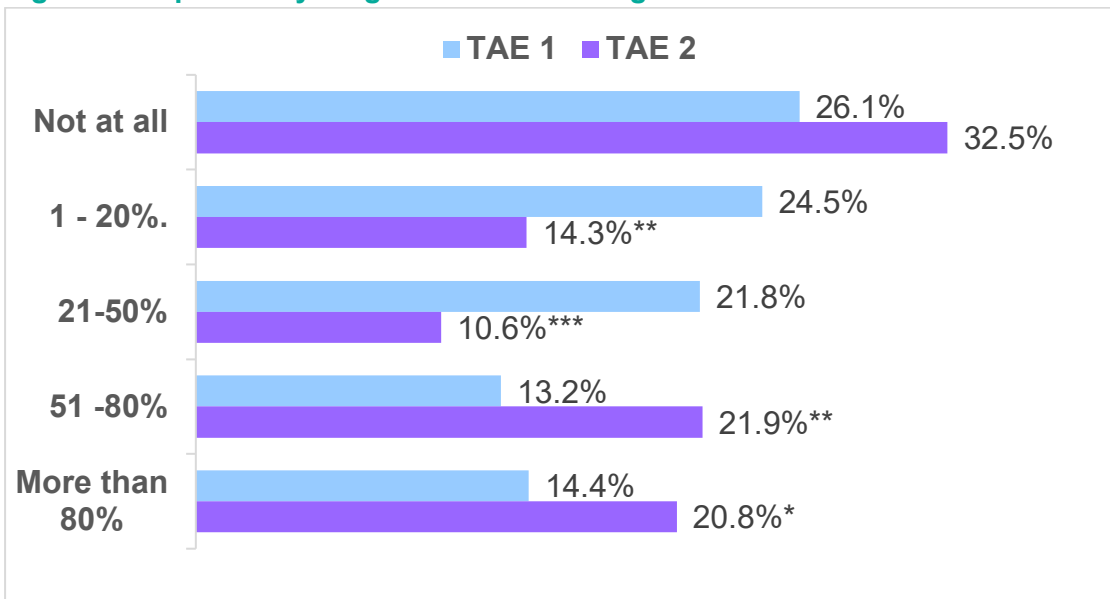


Note: \*\* p<0.01.

### 2.1.4 More providers are heavily dependent on government funding

We have identified a shift in the financial reliance of TAE providers on government subsidies between TAE1 and TAE2. As shown in Figure 5, in TAE2, around 43% of providers heavily depend on substantial government funding, with more than 50% of their business dependent on the training that is funded by government in the form of course fee subsidies. This marks a notable increase from TAE1, where approximately 28% of TAE providers exhibited a similar level of dependency. Concurrently, there has been a significant decrease in the proportion of TAE providers with lower reliance on government subsidies (1-50%), dropping from around 46% in TAE1 to approximately 25% in TAE2. The change in the proportion of TAE providers that are not dependent on government funding at all is not statistically significant.

**Figure 5: Dependency on government funding**



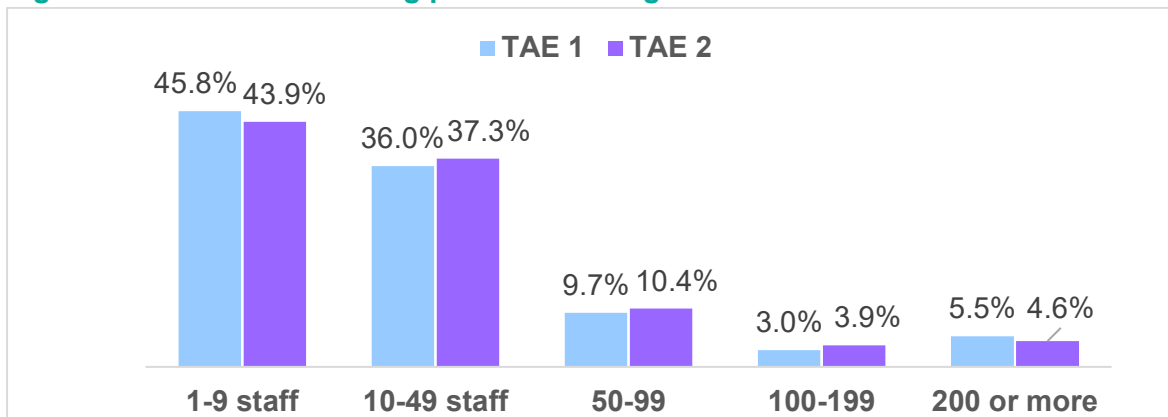
Note: \*\*\*p<0.001, \*\* p<0.01, \*p<0.05

The increasing reliance of TPs on government subsidies is a key concern. Recent adjustments to funding policies and eligibility criteria, along with increased industry demand for non-WSQ customised training programmes, are key contributors to the shifts in funding reliance observed. In 2022, non-certifiable courses (courses which do not lead to a certification) would no longer be funded by SkillsFuture Singapore, and the government’s funding framework would focus more on certifiable and industry-recognised courses of higher quality (Ng 2022a; 2022b). Providers that are heavily reliant on subsidies may need to diversify their revenue streams, otherwise, it will potentially impact the overall resilience and innovation within the sector.

### 2.1.5 Manpower and revenue remained largely unchanged

The manpower profile of TAE providers has remained stable over the last four years. Figure 6 illustrates a consistent presence of small-medium enterprises (SMEs), comparing TAE1 data from 2018 with TAE2 data from 2022. According to Figure 6, only around 5% of TAE providers have more than 200 staff members, and 43.9% operate with less than 10 staff, whether permanent, adjuncts or those on fixed term contracts.

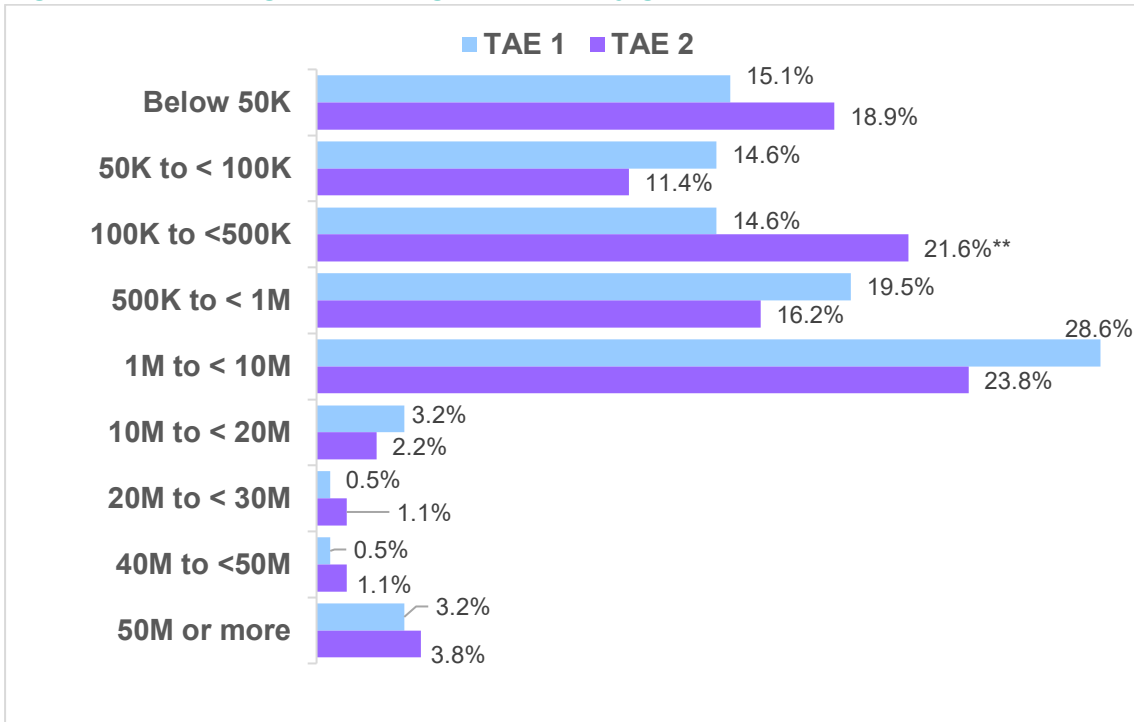
**Figure 6: Overview of training provider staffing numbers**



As illustrated in Figure 7, there are no statistically significant changes in distribution of TAE businesses by revenue, except for growth of the 100k to <500k group. These findings suggest a sector highly dominated by SMEs. It also suggests a stable market, with SMEs surviving the impact of Covid-19 and adapting to changes within the TAE landscape.



**Figure 7: Percentage of training providers by gross revenue**

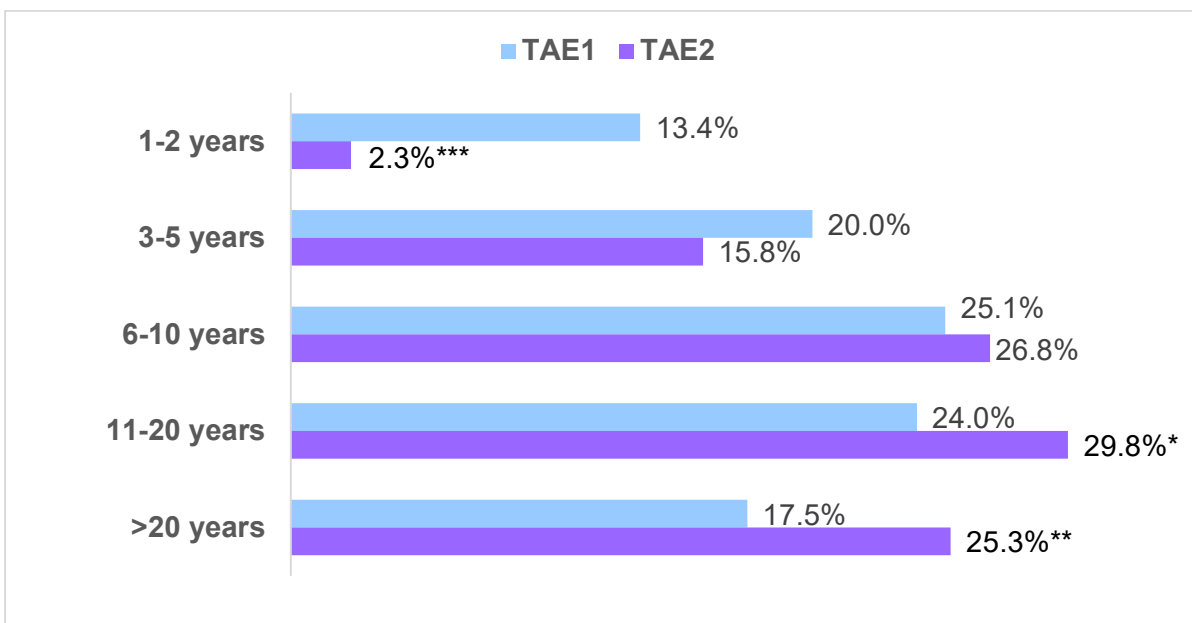


Note: \*\* p<0.01.

**2.1.6 Sharp drop in new TAE entrants and increase in older TAE businesses**

As illustrated in Figure 8, there is a significant drop in the proportion of new entrants to the TAE sector, suggesting higher entry barriers to the sector. This trend, coupled with a notable increase in the proportion of TAE businesses established for over 10 years, implies that the sector may be experiencing increased consolidation and a more challenging environment for newcomers.

**Figure 8: Years of establishment of TAE providers**

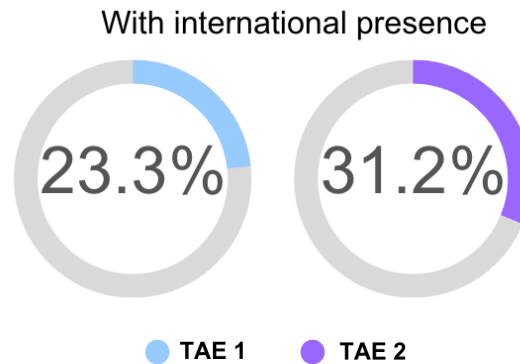


Note: \*\*\*p<0.001, \*\* p<0.01, \*p<0.05

### 2.1.7 No statistically significant change in international expansion

There has been an increase in the proportion of TAE providers with another establishment, subsidiary, branch, representative office or sub-company in other country/countries, from 23.3% in TAE1 to 31.2% in TAE2. However, this change in international presence is not statistically significant.

Figure 9: Training Providers with international presence



### 2.1.8 Summary:

The findings indicate several key trends in the TAE sector. Notably, there has been a significant rise in the proportion of public training providers, alongside a shift away from traditional training provider roles. The number of business consultancies has doubled, and the training functions provided by associations and professional bodies have quadrupled. This shift points to an increased demand for customized and contextualized training solutions, as evidenced by a growing emphasis on non-WSQ (Workforce Skills Qualifications) offerings.

Furthermore, there is a rising dependence on government funding among providers. The sector has also experienced a sharp decline in new entrants, while the proportion of long-established businesses has increased, indicating higher barriers to entry and potential consolidation within the industry.

Despite these shifts, manpower and revenue levels have remained relatively stable, and there has been no significant change in international expansion. These trends imply a maturing sector with evolving demands and challenges, potentially affecting how training solutions are delivered and funded in the future.





## 2.2 Deep Dive: Key shifts in TAE businesses

As explained in the introduction, the research began during the Covid-19 pandemic, a period that exposed vulnerabilities but also opportunities for the TAE sector. The sector demonstrated remarkable agility, shifting to online and blended learning models and enhancing digital infrastructure. Additionally, recent policy developments, such as changes in funding criteria and the expanded role of IHLs have introduced new dynamics into the TAE business landscape.

This section reports key shifts in the TAE businesses, comparing changes observed between the first and second iterations of the TAE study (TAE1 and TAE2). We analyse these shifts by examining variations within each study cycle and breaking down the data by different types of TAE businesses. This approach allows for a more nuanced understanding of both the broader trends and deep dive into specific dynamics affecting various categories within the TAE sector.

Here is the description of the main TAE business types:

**Figure 10: Description of Main TAE Business Types:**

	Micro Private	Small Private	Medium-Large Private	Public
				
<b>Description</b>	Private provider with less than 10 employees	Private provider with 10-49 employees	Private provider with 50 or more employees	CET centres in polytechnics / ITEs / autonomous universities and other public sector training institutes

Here are the dimensions for the deep-dive analyses.

**Figure 11: Dimensions for the Deep-dive Analyses.**

DIMENSIONS	VARIABLES
<b>Business Performance</b>	Profitability; total sales; market share; client satisfaction
<b>Business Strategy</b>	Regularly move into new markets; lead development of new products and services; customization; frequently take risks; not dependent on price to gain success; early adopter of technology; dependence on government funding
<b>Innovation</b>	Product innovation; process innovation; organisational innovation; marketing innovation

### 2.2.1 Business strategy: broad-based enhancements in customization, innovation and technology

Comparing across TAE1 and TAE2, overall, TAE businesses increased in customization (mean score rising from 3.85 to 4.01), with more also leading the way in developing new

products and services (from 3.57 to 4.01) and becoming an early adopter of technology (from 3.98 to 4.32). Table 1 shows the results.

Taking a closer look at the different TAE business types, micro and small private providers are the main drivers of this improved performance, reducing their dependence on government funding. In contrast, medium-large private firms have become more dependent on government funding.

**Table 1: Comparison of business strategy between cycles from TAE1 to TAE2**

Business Strategy	Cycle	Overall	Micro	Small	Medium-Large	Public
Regularly move into new markets	TAE1	4.18	4.06	<b>4.21</b>	4.38	4.52
	TAE2	4.33	4.22	<b>4.57*</b>	4.47	3.97
Lead the way in developing new products and services	TAE1	<b>3.57</b>	<b>3.34</b>	<b>3.64</b>	4.25	3.90
	TAE2	<b>4.01***</b>	<b>4.06***</b>	<b>4.00*</b>	4.16	4.21
Customisation	TAE1	<b>3.85</b>	3.92	3.88	3.94	4.24
	TAE2	<b>4.01*</b>	4.10	4.01	3.88	3.90
Frequently take risks	TAE1	3.79	4.01	3.57	3.81	3.86
	TAE2	3.74	3.67	3.83	4.25	3.48
Not dependent on price to gain success	TAE1	3.41	3.44	3.34	3.41	<b>3.19</b>
	TAE2	3.44	3.54	3.08	3.06	<b>3.86*</b>
Early adopter of technology	TAE1	<b>3.98</b>	3.92	<b>3.94</b>	4.50	<b>3.76</b>
	TAE2	<b>4.32***</b>	4.20	<b>4.36*</b>	4.50	<b>4.48*</b>
Not dependent on government funding	TAE1	3.35	3.16	3.15	3.44	2.81
	TAE2	3.16	<b>3.57*</b>	2.86	<b>2.34**</b>	2.90

*Note:* Bold with \*marked on TAE2 values, indicates significant differences between the TAE1 and TAE2 cycles, \*p < .05, \*\*p < .01. \*\*\*p < 0.001. Business strategies were measured on a 6-point Likert scale; except for last item which was on a 5-point scale: 1= More than 80% dependent; 2= 51-80%; 3= 21-50%; 4= 1-20%; 5= Not at all.

Tables 2 and 3 present the results of the comparison between various TAE business types in each study cycle. Significant differences are highlighted in the colour panel with asterisks. While medium-large private providers took a lead in developing new products and services in TAE1, they have lost that competitive advantage over time, resulting in no significant differences in this aspect across the provider types in TAE2. In addition, small and medium-large private providers have also become more dependent on government funding, as compared with micro private providers in TAE2.

**Table 2: Comparison of business strategy among different providers in TAE1**

	[reference]			
	Micro	Small	Medium-	Public
Within TAE 1	(n=93)	(n=67)	Large	(n=21)
			(n=32)	
Regularly move into new markets				
Lead the way in developing new products and services	**		**	
Customisation				
Frequently take risks				
Not dependent on price to gain success				
Early adopter of technology				
Not dependent on government funding				

Note: \*on color panels indicates significant differences among the provider types within the cycle, \*p < .05, \*\*p < .01. \*\*\*p < 0.001.

**Table 3: Comparison of business strategy among different providers in TAE2**

	[reference]			
	Micro	Small	Medium-	Public
Within TAE 2	(n=98)	(n=76)	Large	(n=29)
			(n=32)	
Regularly move into new markets				
Lead the way in developing new products and services				
Customisation				
Frequently take risks				
Not dependent on price to gain success				
Early adopter of technology				
Not dependent on government funding		*	**	

Note: \*on color panels indicates significant differences among the provider types within the cycle, \*p < .05, \*\*p < .01. \*\*\*p < 0.001.

### 2.2.2 Innovation: substantial increase in product, process and organizational innovation across cycles but with shifting priorities

Comparing across TAE1 and TAE2, overall, the proportion of TAE businesses involved in product, process and organisational innovation increased significantly. Table 4 shows the results.

A close examination of the various TAE business types reveals different priorities in innovation. Micro private providers made significant strides in product innovation, while small private providers improved substantially in organisational innovation, enhancing processes such as workplace management and restructuring. Medium-large private providers focused on process innovation, aiming to reduce cost and improve work efficiency. Public providers, on the other hand, did not show notable changes across the two cycles.

**Table 4: Comparison of innovation activities between cycles from TAE1 to TAE2**

Innovation Activity	Cycle	Overall	Micro	Small	Medium-Large	Public
Product Innovation	TAE1	<b>50.0</b>	<b>36.6</b>	56.7	71.9	76.2
	TAE2	<b>71.7***</b>	<b>77.4***</b>	70.4	67.7	79.3
Process Innovation	TAE1	<b>44.8</b>	39.8	47.8	<b>62.5</b>	57.1
	TAE2	<b>59.8***</b>	42.9	59.2	<b>83.9*</b>	69.0
Organisational Innovation	TAE1	<b>34.4</b>	33.3	<b>29.9</b>	46.9	47.6
	TAE2	<b>49.6***</b>	31.7	<b>57.8**</b>	61.3	65.5
Marketing Innovation	TAE1	49.4	49.5	58.2	53.1	52.4
	TAE2	54.9	50.0	67.6	54.8	51.7

Note: Bold with \*marked on TAE2 values, indicates significant differences between the TAE1 and TAE2 cycles, \*p < .05, \*\*p < .01. \*\*\*p < 0.001.

Tables 5 and 6 reflect the results of comparison between various TAE business types across each study cycle. In TAE1, medium-large private providers and public providers led in product innovation. However, their priorities have since shifted. In TAE2, medium-large providers were most invested in process innovation, and public providers concentrated on organizational innovation, losing their earlier edge in product innovation.

**Table 5: Comparison of innovation activities among different providers in TAE1**

Within TAE 1	[reference] Micro (n=93)	Small (n=67)	Medium-Large (n=32)	Public (n=21)
Product Innovation	**			
Process Innovation				
Organisational Innovation				
Marketing Innovation				

Note: \*on color panels indicates significant differences among the provider types within the cycle, \*p < .05, \*\*p < .01. \*\*\*p < 0.001.

**Table 6: Comparison of innovation activities among different providers in TAE2**

	[reference] Micro (n=98)	Small (n=76)	Medium- Large (n=32)	Public (n=29)
<b>Within TAE 2</b>				
Product Innovation				
Process Innovation	***		***	
Organisational Innovation		**	*	**
Marketing Innovation				

Note: \*on color panels indicates significant differences among the provider types within the cycle, \*p < .05, \*\*p < .01. \*\*\*p < 0.001.

These shifts in focus have several implications. For medium-large private providers, the shift towards process innovation suggests a strategic move to enhance operational efficiency and reduce costs, potentially impacting their ability to compete in the market with novel products. For public providers, the improved organizational innovation indicates a stronger emphasis on internal processes, but the loss of competitive edge in product innovation might reduce their overall competitiveness and limit their ability to introduce value-added new teaching methods and services. This could potentially affect the quality and learning experiences offered to learners, impacting overall learning outcomes.

### 2.2.3 Business performance: sharp decline across the board

Despite substantial upgrades in business, innovation, and technology strategies, TAE business performance has seen a notable decline in profitability, sales and market share. There is no improvement in client satisfaction either (see results in table 7). This downturn underscores a critical need for enhanced and more robust offerings. The gap between the investments made in upgrading business and technology strategies and the actual performance outcomes suggests that the current approaches may not be effectively addressing client needs or market demands. To reverse this trend, a comprehensive review and realignment of offerings may be necessary to better meet client expectations, improve market positioning, and ultimately drive performance improvements in profitability and sales. Tables 8 and 9 indicate the results of comparing various TAE business types across each study cycle. No significant differences in their business performance within each cycle were found.

**Table 7: Comparison of business performance between cycles from TAE1 to TAE2**

Business Performance	Cycle	Overall	Micro	Small	Medium- Large	Public
Profitability	TAE1	4.33	4.24	4.45	4.31	4.67
	TAE2	3.75***	3.74**	3.74**	3.53*	4.03*
Total Sales	TAE1	4.44	4.42	4.64	4.53	4.86
	TAE2	3.83***	3.66**	3.87**	3.69*	3.97*
Market Share	TAE1	4.34	4.30	4.46	4.44	4.52

	TAE2	<b>3.85***</b>	<b>3.77**</b>	<b>3.78***</b>	<b>3.81*</b>	4.07
Client Satisfaction	TAE1	4.94	4.99	5.07	4.88	5.05
	TAE2	4.82	4.90	4.93	4.56	4.83

Note: Bold with \*marked on TAE2 values, indicates significant differences between the TAE1 and TAE2 cycles, \*p < .05, \*\*p < .01. \*\*\*p < 0.001. Business performance was measured on a 7-point Likert Scale: 1= decreased significantly (>30%); 2=Decreased moderately (10% to 30%); 3= Decreased Slightly (<10%); 4= No Change; 5= Increased Slightly (<10%); 6= Increased Moderately (10% to 30%); 7= Increased significantly (>30%).

**Table 8: Comparison of business performance among different providers in TAE1**

	[reference] <b>Micro</b> (n=93)	<b>Small</b> (n=67)	<b>Medium- Large</b> (n=32)	<b>Public</b> (n=21)
<b>Within TAE 1</b>				
Profitability				
Total Sales				
Market Share				
Client Satisfaction				

**Table 9: Comparison of business performance among different providers in TAE2**

	[reference] <b>Micro</b> (n=98)	<b>Small</b> (n=76)	<b>Medium- Large</b> (n=32)	<b>Public</b> (n=29)
<b>Within TAE 2</b>				
Profitability				
Total Sales				
Market Share				
Client Satisfaction				

**2.2.4 Business Performance During COVID-19: More than half of TAE businesses reported a decline while about one third reported an increase. High-road business strategies help TAE businesses thrive amid crisis, driven mainly by small TAE enterprises**

The outbreak of Covid-19 pandemic had impacted business opportunities and revenue of TAE businesses. As can be seen in table 10 below, over half of the TAE businesses (53%) reported a decrease in their business opportunities, while about one third reported an increase.



**Table 10: Impact of COVID-19 on business opportunities**

Impact of Covid-19 on the business opportunities of your organisation	Overall	Micro	Small	Large	Public
Decrease significantly (>30%)	29.8%	33.7%	32.9%	28.1%	10.3%
Decreases moderately (10% to 30%)	11.9%	9.2%	13.2%	12.5%	17.2%
Decreases Slightly (<10%)	9.8%	10.2%	7.9%	12.5%	10.3%
No Change	13.6%	14.3%	11.8%	0%	31%
Increases Slightly (<10%)	13.2%	9.2%	13.2%	18.8%	20.7%
Increases Moderately (10% to 30%)	12.8%	11.2%	11.8%	25%	6.9%
Increases significantly (>30%)	8.9%	12.2%	9.2%	3.1%	3.5%

Similar patterns were observed for the revenue (see table 11).

**Table 11: Impact of COVID-19 on Revenue**

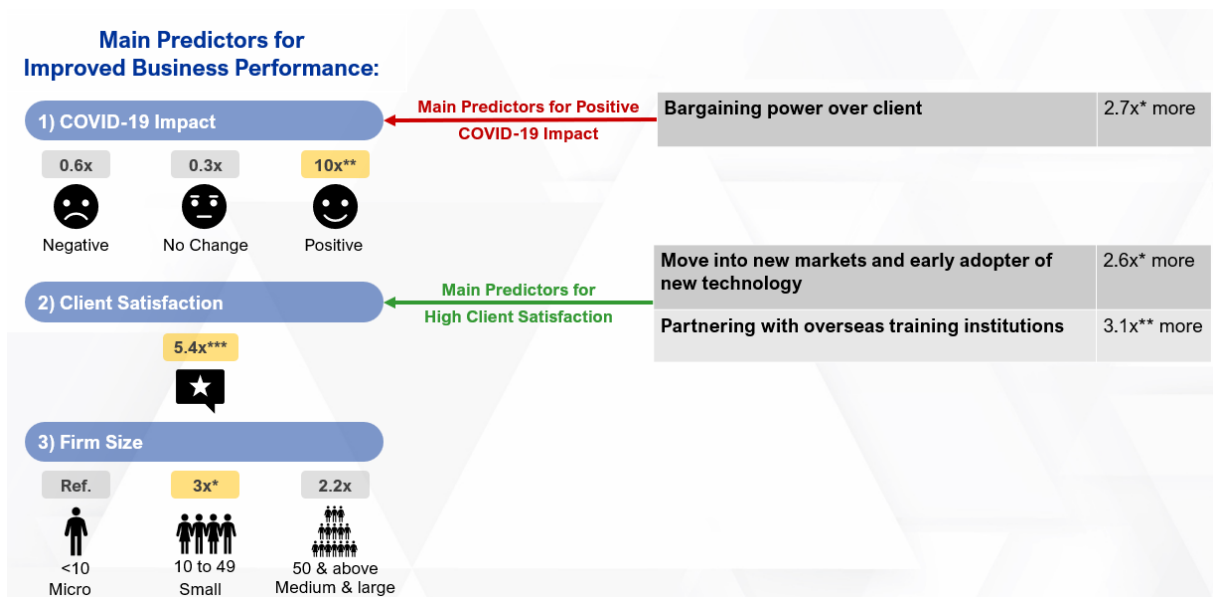
Impact of Covid-19 on the revenue of your organisation	Overall	Micro	Small	Large	Public
Decrease significantly (>30%)	31.1%	35.7%	31.6%	31.3%	13.8%
Decreases moderately (10% to 30%)	10.2%	6.1%	11.8%	18.8%	10.3%
Decreases Slightly (<10%)	8.9%	11.2%	6.6%	6.3%	10.3%
No Change	17%	13.3%	17.1%	3.1%	44.8%

<b>Increases Slightly (&lt;10%)</b>	14%	13.3%	10.5%	25%	13.8%
<b>Increases Moderately (10% to 30%)</b>	8.9%	11.2%	7.9%	9.4%	3.5%
<b>Increases significantly (&gt;30%)</b>	9.8%	9.2%	14.5%	6.3%	3.5%

A more in-depth analysis using logistic regression revealed that high-road business strategies enable TAE businesses to thrive during crises, particularly for small TAE enterprises. The findings presented in figure 12 indicate that TAE businesses with bargaining power over clients were 2.7 times more likely to successfully navigate the changes brought on by Covid-19 and report a positive impact. Client satisfaction also turned out to be another key driver for business performance, with TAE businesses reporting high client satisfaction being 5.4 times more likely to report improved outcomes. High-road strategies such as regularly moving into new markets, being an early adopter of new technology, and forming partnerships with overseas training institutions contribute to high client satisfaction and overall performance.

The findings suggest that TAE businesses, especially smaller ones, can navigate crises more effectively by focusing on client satisfaction and adopting high-road strategies such as market expansion and technological adoption. Businesses with strong client relationships and bargaining power are better positioned to thrive and maintain competitiveness, even during periods of crises and uncertainty.

**Figure 12: Main Predictors for Improved Business Performance**



Note: Business performance is measured by a combination of profitability, total sales, and market share. \*p < .05, \*\*p < .01. \*\*\*p < 0.001.

### 2.2.5 Summary:

Between 2018 and 2022, TAE businesses experienced some partial improvements. Advances were made in business practices, innovation, and technology strategies. Surprisingly, weaker players from TAE1 (micro and small private providers) showed significant progress in TAE2, while stronger players from TAE1 (medium-large private providers and public providers) lost their earlier competitive edge. Overall business performance, however, weakened across the board.

Micro and small private providers achieved notable improvements in their business and innovation models, yet these enhancements did not translate into better business performance. This suggests that while these providers are adopting more effective strategies, they may need additional support or resources to realize their potential in improving profitability and market presence.

Medium-large private providers, on the other hand, saw a decline in their business practices, becoming more reliant on government funding and focusing on efficiency-driven innovation at the expense of their previous strength in product innovation. This shift implies that while these providers are improving operational efficiency, they may be sacrificing their competitive advantage in developing new products. To regain their edge, they may need to rebalance their focus between process and product innovation.

Public providers experienced stagnation, losing the competitive edge in product innovation that they had in TAE1. This stagnation highlights a need for renewed strategies to more innovative solutions and enhanced competitiveness and relevance to the changing needs.

These trends indicate that further sector-wide improvements are necessary. The decline in business returns and stagnant client satisfaction underscore the need for continued efforts to enhance quality in the TAE sector and to strengthen mechanisms that encourage both quality and innovation.

The survey was conducted during the Covid-19 pandemic. The findings indicate that TAE businesses, particularly smaller ones, can better withstand crises by adopting high-road strategies that emphasize client satisfaction and market adaptability. The strong correlation between client satisfaction and improved business performance highlights the importance of building and maintaining strong client relationships with quality and customised offerings. Additionally, businesses with bargaining power and the ability to leverage new technologies and international partnerships are better positioned to thrive. These insights highlight the need for TAE businesses to focus on long-term strategic investments in innovation, customer engagement, and global networking to remain resilient and competitive.

### 2.3 Key shifts in the profile of TAE professionals

To our best knowledge, there are approximately 20,000 training professionals working in the TAE sector. Among them, 56.7% are adult educators, followed by 16.5% training administration and support staff, 10.1% business developers and sales personnel, 5.5% training managers, 3.9% learning technology designers and integrators, 3.3% human resource developers and 4% other staff such as finance, research and innovation working in the training organisations.

In this section we provide key trends in the profile change from TAE1 and TAE2, followed by a deep dive into what these trends look like across different AE profile types in the next section.

#### 2.3.1 More industry practitioners undertaking TAE-related work

Adult educators (AEs) are categorised based on their training involvement and employment status into three main categories.

- **Full-time AE:** full-time employee of the TAE provider whose primary role is training
- **Freelancer:** holds a part-time position or contracted as a freelance with training as their primary role
- **Industry Practitioner:** holds an industry position (including in-house trainers) and doing TAE related work as a secondary role

As shown in Figure 13, the proportion of full-time adult educators seems to have stabilised at around 40%, while freelancers now make up about one third of the adult educator workforce. Additionally, there is an increase in the proportion of industry practitioners into the TAE sector, with those undertaking TAE related work as their secondary role rising from 21.5% in TAE1 to 25.5% in TAE2. This shift represents a notable restructuring of the TAE workforce. The industry practitioners could bring valuable real-world experience and practical insights to training and education, which may potentially enhance the practical relevance and industry alignment of TAE offerings and delivery.

**Figure 13: Type of adult educators**

Type of AE	Full-Timers	+	Freelancers	Industry Practitioners
TAE1	40.7%		29.5%	21.5%
TAE2	39.2%		33.6%	25.5%*
Training Involvement	Training is <b>Primary Role</b>			Training is <b>Secondary Role</b>
Work Arrangement	Hold a <b>Full-time</b> position in a TAE company, including business owners or sole proprietors		Hold a part-time position or contracted as a <b>Freelancer</b> or adjunct in a TAE company	Hold an industry position and doing TAE related work, including in-house trainers

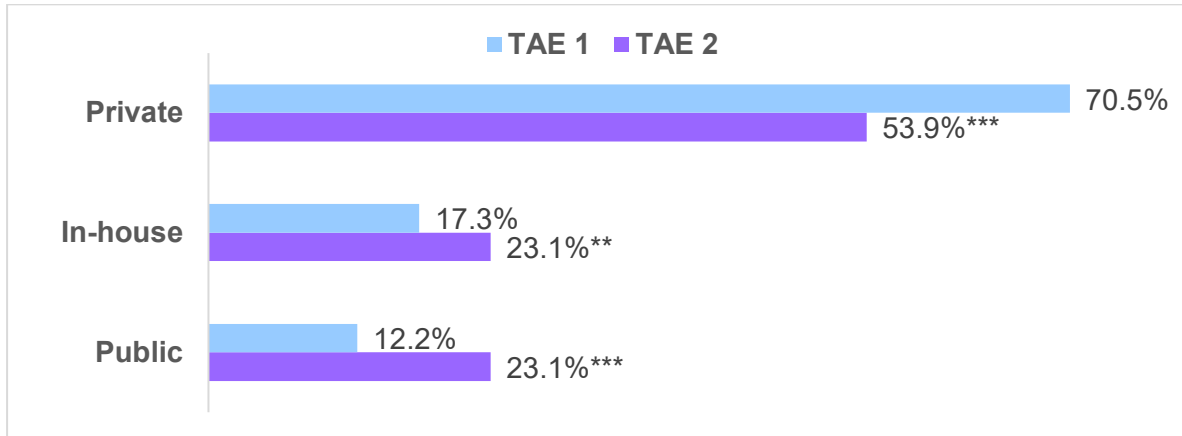
Note: \*p < .05.

#### 2.3.2 More AEs flowing into public and in-house providers, than into private providers

Since TAE1, there has been a significant shift in the distribution of AEs across provider types. As shown in figure 14, the proportion of AEs employed by private providers has significantly decreased, dropping from 70.5% in TAE1 to 53.9% in TAE2. In contrast, the percentage of

AEs working in public providers has nearly doubled, increasing from 12.2% to 23.1%. Additionally, the share of AEs in in-house training providers has risen from 17.3% to 23.1%. These changes suggest a substantial reallocation of the TAE workforce, which may indicate a growing emphasis on public and in-house training. These shifts align with broader trends observed earlier towards public provision, as well as an increased focus on integrating training within organizations.

**Figure 14: Distribution of adult educators across the providers**



Note: \*p < .05, \*\*p < .01. \*\*\*p < 0.001.

### 2.3.3 A greying workforce – AEs are older and more experienced

There are significant changes in the demographics of the AE workforce. The average age for TAE1 AEs was 44.5 years old and 48 years old in TAE2. This was higher than the Singapore labour force median age of 43 years old in 2018 and 44 in 2022 respectively (MOM, 2024). The shift indicates a greying TAE sector. As shown in Table 12, there is a significant increase in the proportion of AEs above 60 years old from 8.4% to 14.5% and a substantial drop in AEs under 30 years old from 11.4% to 2.6%.

**Table 12: Age and TAE experience of adult educators**

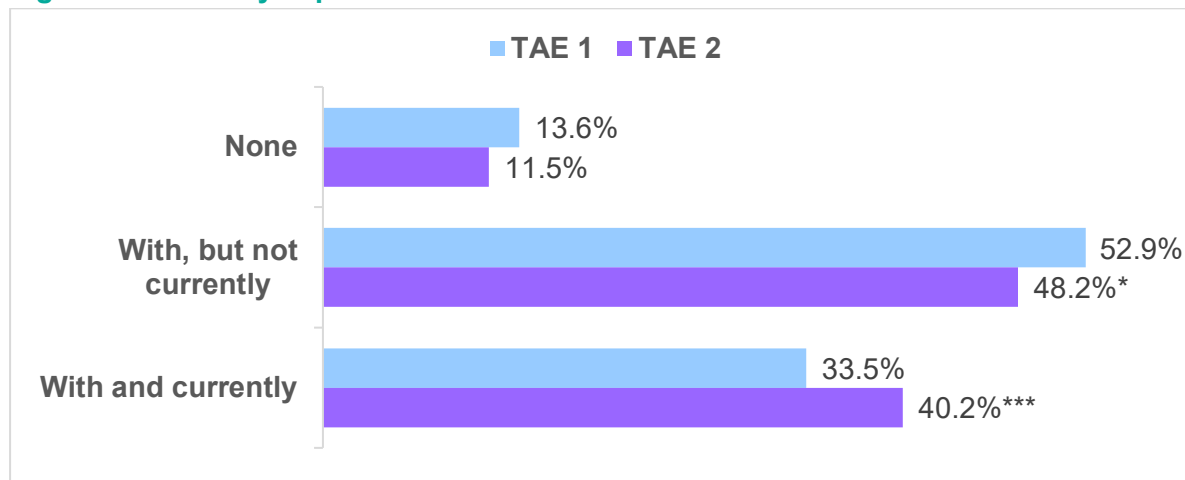
Profile	TAE1	TAE2	Change
<b>Age Group</b>			
Below 30	11.4%	2.6%	<b>-8.8% ***</b>
31 to 40	27.5%	22.9%	<b>-4.7% *</b>
41 to 50	27.5%	32.7%	<b>+5.20%</b>
51 to 60	25.1%	27.3%	<b>+2.20%</b>
Above 60	8.4%	14.5%	<b>+6.1% ***</b>
<b>TAE Experience</b>			
Less than 2 years	11.9%	4.2%	<b>-7.7% ***</b>
2 to 4 years	31.6%	23.2%	<b>-8.4% ***</b>
5 to 9 years	26.3%	29.4%	<b>+3.10%</b>
More than 10 years	30.2%	43.2%	<b>+13.1% ***</b>

Note: \*p < .05, \*\*\*p < 0.001.

AEs were also more experienced. In TAE1, over 56% of AEs had more than five years of TAE work related experience. On average, AEs reported 7.7 years of TAE-related working experience. In TAE2, these percentages have increased, on average, with AEs reporting 10 years of TAE-related working experience, and more than 4 in 10 reporting more than 10 years of TAE experience.

In addition to TAE experience, more AEs have current working experiences in other industries than TAE. As shown in the figure below, slightly less than half of AEs had worked in other industries before joining TAE sector, and about 4 in 10 AEs are still holding a permanent or contract position in other sectors, or work as a freelancer in other sectors, in addition to their work in TAE.

**Figure 15: Industry experience of AEs**



Note: \*p < .05, \*\*\*p < 0.001.

The findings imply an impending shift in the TAE workforce. An older and more experienced adult educator workforce brings a rich set of benefits in terms of stability in experience and expertise, but it also presents challenges around adapting to change and ensuring continuity for future generations of educators. Balancing these dynamics is key to fostering a resilient and effective adult education system. Thus, there is a need to harness the strengths of both highly experienced AEs and those newer to the profession to ensure continuity and vitality of the TAE sector.

AEs with experience in other industries bring diverse perspectives, skills, and knowledge into the TAE sector. This diversity enhances the richness and relevance of TAE programmes and services. This allows them to design curricula that are more aligned with current job market demands, providing learners with practical, real-world insights that are highly relevant across industries. Strengthening the industry and education nexus is essential for optimizing the contributions of AEs with dual roles.

**2.3.4 More AEs acquired degree/Master’s/PhD as well as ACTA/ACLP**

TAE workforce continues to be a highly educated sector. As shown in table 13, the proportion of AEs holding a degree or above has increased significantly from 70.3% in TAE1 to 78% in TAE2. In TAE1, approximately one-quarter of AEs had a master's degree or higher. By TAE2, this figure rose by 13%, with 4 in 10 AEs now holding a master's or doctoral degree.

With regards to training qualifications, since TAE1 there has been a marked increase in the number of training qualifications AEs hold. In TAE1, 84% of AEs held at least 1 training qualification. In TAE2, this has increased to 96%, with a sizeable percentage (just over 21%) holding two or more training qualifications.

Taking a closer look at the type of training qualifications AEs hold, there are some noticeable changes. As shown in the table below, almost 9 in 10 AEs are qualified at advanced certificate level, holding either the Advanced Certificate in Training and Assessment (ACTA) or the Advanced Certificate in Learning and Performance (ACLP). About 14% of AEs are qualified to Diploma level, (holding either the Diploma in Adult and Continuing Education/ DACE in short, or the Diploma in Design and Development of Learning Performance, DDDL in short). These overall findings suggest a positive trend towards a more qualified TAE workforce.

**Table 13: Qualifications of adult educators**

Qualifications	TAE1	TAE2	Change
<b>Possess Diploma or equivalent</b>	20.6%	17.7%	<b>-2.9%</b>
<b>Possess Degree &amp; above</b>	70.3%	78.0%	<b>+7.8% ***</b>
<b>Possess Master's &amp; above</b>	25.6%	38.6%	<b>+13.0% ***</b>
<b>Possess ACTA/ACLP</b>	70.8%	88.8%	<b>+18.0% ***</b>
<b>Possess DACE/DDDL</b>	16.9%	14.0%	<b>-2.8%</b>

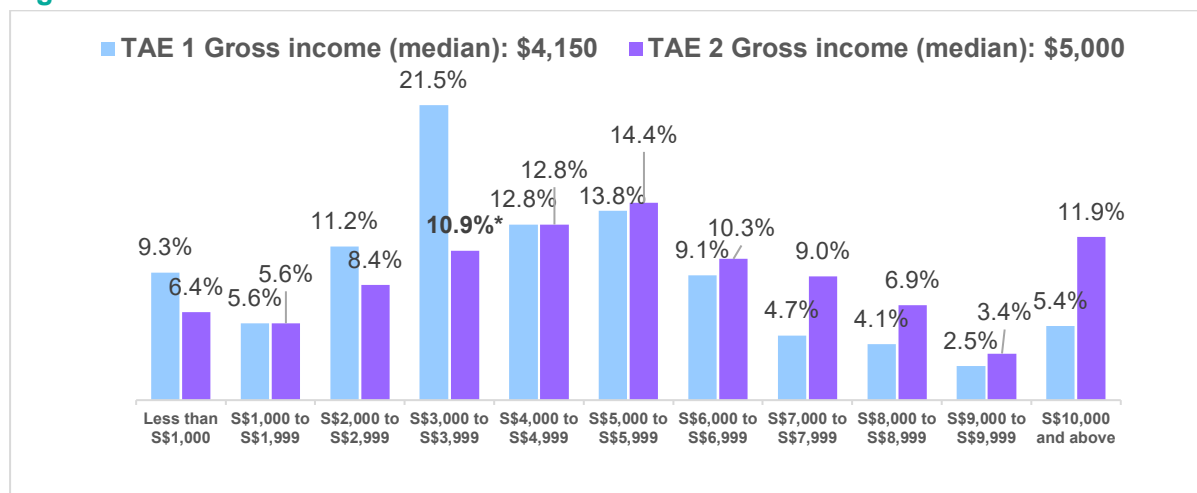
Note: \*\*\*p <0.001.

### 2.3.5 AE income rising, but surplus over national median narrowing

Monthly income refers to gross monthly (median) income, inclusive of the total income from both TAE related and non-TAE related work. Half of AEs (50.3%) have income from other sources, such as non-TAE work, rental etc.

Overall, gross monthly median income of AEs increased from \$4,150 in TAE1 to \$5,000 in TAE2. In 2022, this was higher than the national median of \$4,680 (MOM, 2022). But the income differences between AEs and the national median are getting smaller, the surplus went down from \$347 to \$320. This is worrying as the TAE sector is highly educated with a high percentage of high degree holders. We will discuss this further in the next section.

**Figure 16: AE income**



*Note:* For AEs that provided income in categories or ranges, the mid-point of that category or range is used.

### 2.3.6 Summary

Over time, the profile of Adult Educators (AEs) has undergone significant change. There has been an increase in the number of industry practitioners entering the TAE sector, particularly those for whom TAE-related work is a secondary role. The proportion of such practitioners grew from 21.5% in TAE1 to 25.5% in TAE2 and about 4 in 10 AEs have current industry experience in other sectors. This shift reflects a greater blending of industry and educational expertise within the sector. This trend may suggest that more professionals see value in contributing to adult education while maintaining their primary roles in other industries.

Another key shift is the movement of AEs into public and in-house training providers, as opposed to private providers. This reallocation suggests a growing emphasis on public provision of education and a stronger integration of training within organizations. The trend aligns with broader patterns in the education sector, where there is increased attention on aligning training with organizational needs and emphasizing skills development within the public domain.

The narrowing income surplus of the TAE sector over the national median is particularly concerning given the high level of education among Adult Educators. Despite the fact that 40% of AEs hold a master's or doctoral degree, and 96% possess a training qualification, AE income is rising at a slower rate than the national median. This suggests that the compensation for their advanced qualifications may not be keeping pace with broader economic trends. Additionally, the TAE workforce is aging, with fewer young people joining the sector. This could affect the sector's ability to attract and retain highly skilled educators, especially when they can command higher salaries in other industries or sectors that better recognize their expertise and educational background.



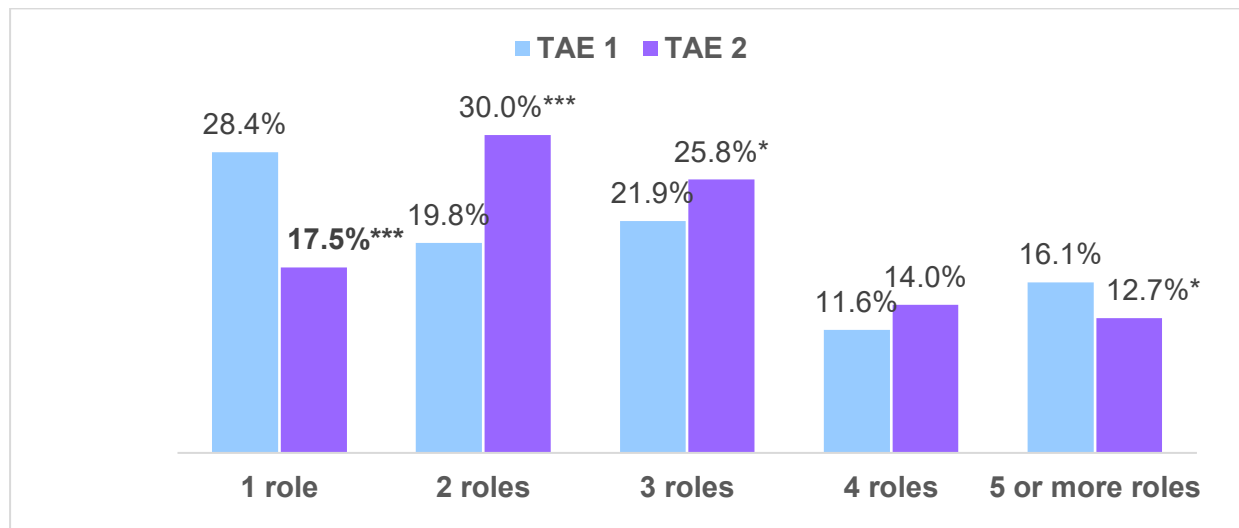
## 2.4 Deep Dive: Key shifts in AE jobs and skills

In this section, we deep dive into key shifts in AE roles, their jobs and skills between the first and second iterations of the TAE study (TAE1 and TAE2). We will analyse these shifts by examining variations within each study cycle and breaking down the data by different AE functional roles. This approach allows us to understand both the broader trends and gain deeper insights into specific dynamics affecting various roles.

### 2.4.1 Hybridity reshaping AE roles

The TAE Skills Framework (SkillsFuture Singapore, 2018) outlines six job roles for adult education. These are Learning Facilitator, Assessor, Courseware Developer, Learning Technology Designer, Learning Consultant/Learning Solutionist and Curriculum Lead. However, our data reveals a much more complex reality. Our survey findings show that only 17.5% of AEs perform one single major functional role, while the remaining 82.5% perform multiple roles. When compared against TAE1, Figure 17 shows a significant decline in single-role AEs, and substantial increase in the proportion of AEs with two or three roles.

**Figure 17: Number of functional roles AEs perform**










Note: \*p < .05 \*\*\*p < 0.001.

Across the various roles, our data reveals 63 different combinations of roles. To gain a more nuanced understanding of these roles, we conducted a cluster analysis on the time spent on each functional role; arriving at seven distinct AE profile types. These seven AE profile types fall into two main categories as shown in Figure 18 below.

We have identified four main types of AEs who spend a large proportion of their time (more than 75%) performing traditional TAE roles. This includes being a Trainer, who spends at least 89% of his / her time specifically on training, Trainer/Assessor, who spends 52% of his/ her time on training and 40% of his / her time on assessment, Courseware Developer who spends up to 78% of his/ her time on this role and an AE in Management who also spends most of his / her time on this role (80%).

**Figure 18: Seven main AE profile types**

	Traditional TAE Role				Hybrid Role		
Profile	<b>Trainer</b> n=368 (36.9%) 	<b>Trainer and Assessor</b> n=130 (13.0%) 	<b>Courseware Developer</b> n=30 (3.0%) 	<b>Management</b> n=39 (3.9%) 	<b>Learning Consultant</b> n=51 (5.1%) 	<b>Trainer Plus</b> n=263 (26.4%) 	<b>Polytasker</b> n=116 (11.6%) 
Major functional role(s) by proportion of time spent	100% perform the role of <u>Trainer</u> and spend <b>88.6% of their time</b> on this role.	100% perform the role of <u>Assessor</u> . Spend <b>51.7% of their time on training, 40.2% of their time on assessment.</b>	100% perform the role of <u>Courseware developer</u> and spend <b>77.5%</b> of their time on this role.	100% perform the role of <u>Management</u> and spend <b>79.9% of their time</b> on this role.	100% perform the role of <u>Learning Consultant</u> and spend <b>55% of their time</b> on this role.	99.6% perform role of <u>Trainer</u> . Spend <b>46.3% of their time on training</b> , and a <b>mixture</b> of others.	Takes on <b>multiple roles</b> and <b>time spent is well spread</b> across various roles.

We have also identified three types of AEs (40%) who perform more hybrid roles based on the combination and intensity of work carried out in certain functions. Firstly, ‘Learning Consultant’, who spends just over half of his/her time working on learning consultancy, combined with management and training functions. Next, there is the ‘Trainer Plus’, who spends just under half of his/her time training, and the other half split across courseware development and management functions. Lastly, we have identified the ‘Polytasker’, whose job roles are multifaceted, spread across various roles such as curriculum leadership, management, courseware development and training/learning consultancy. This shift toward hybridity reflects the increasing diversity of the AEs’ tasks, requiring a broader skill set and greater adaptability.

### 2.4.2 AE jobs improved between TAE1 and TAE2 for most dimensions, except task complexity and task discretion

Using IAL’s ‘Good Job Framework’ (Skills and Learning Study 2, 2021), we measure four components which are a combination of job quality and managerial / organizational practices as shown in Table 14 below.

The first component relates to payment (wage – monthly income) and three other non-payment components relate to a combination of job quality and managerial, organisational practices. The first non-pay component refers to ‘Job Content’ – in terms of AEs’ TAE domain and pedagogical knowledge; a ‘social’ aspect that considers the extent to which AEs engage in teamwork; task complexity that measures whether the nature of work tasks requires complex problem solving; and task discretion which refers to AEs having the autonomy to make decisions that affect their jobs. The second non-payment component refers to ‘Job Resources’. This component considers professional development support, characterised by setting aside the time during regular working hours for professional development, monetary support, and non-monetary support outside working hours (e.g., study leave, time off etc). The third and final non-payment component refers to ‘Job Prospects’ and this relates to internal aspects of the AE job role, in terms of expectations of increase in income, responsibilities/duties, autonomy, rewards and benefits.

**Table 14: The Good Job Framework**

WHAT IS A GOOD ADULT EDUCATION JOB?		The “Good Job” Framework	
<b>Pay Components</b>	<b>Pay</b>	• Wage	• Monthly Income
<b>Non-Pay Components</b>	<b>Job Content</b>	• TAE Knowledge	• Knowledge and understanding of subject field(s) • Knowledge and understanding about learners’ industry/industries • Pedagogical competencies in training in subject field(s)
(A combination of job quality dimensions and managerial / organizational practices)		• Social • Task complexity • Task discretion	Teamwork Complex problem solving Able to take part in making decisions that affect job
	<b>Job Resources</b>	• Professional development support	Given PD time during regular working hours, monetary support, non-monetary support
	<b>Work Prospects</b>	• Work prospects	Expectations of increase in income, responsibilities/duties, autonomy, rewards and benefits

As part of our ‘Good Job Framework’ analysis, we also measured the impact of good jobs on AE job outcomes, meaning the extent to which AEs experience motivation, work satisfaction, work effort and job security in their roles.

Overall, there has been significant improvements in the quality of AE jobs and AE job outcomes since TAE1. The data provided in the table below indicates an overall improvement, with progress seen across several key dimensions, including higher pay, enhanced domain knowledge, higher social dimension in job content, (working collaboratively and effectively with others to contribute to group efforts to achieve identified objectives), increased professional development support, and improved work prospects. This has led to greater job satisfaction and higher intrinsic motivation among AEs in TAE2 compared to TAE1.

**Table 15: “Good job” indicators and job outcomes from TAE1 to TAE2**

	“Good job” indicators	TAE1	TAE2	Change
<b>Wage</b>	Monthly Income (median)	\$4,150	\$5,000	<b>+\$850 ***</b>
<b>Job content</b>	High TAE Knowledge	20.6%	54.9%	<b>+34.3% ***</b>
	High Social Dimension	31.5%	51.7%	<b>+20.2% ***</b>
	High Task Complexity	30.7%	25.8%	<b>-4.9% *</b>
	High Work Autonomy	58.3%	49.7%	<b>-8.6% ***</b>
<b>Job resources</b>	Professional Development Support	15.7%	35.5%	<b>+19.9% ***</b>
<b>Job prospects</b>	Work Prospects	60.6%	67.7%	<b>+7.1% **</b>

Outcomes	TAE1	TAE2	Change
High Job Satisfaction	29.5%	46.6%	<b>+17.1% ***</b>
High Intrinsic Work Motivation	63.7%	80.1%	<b>+16.4% ***</b>

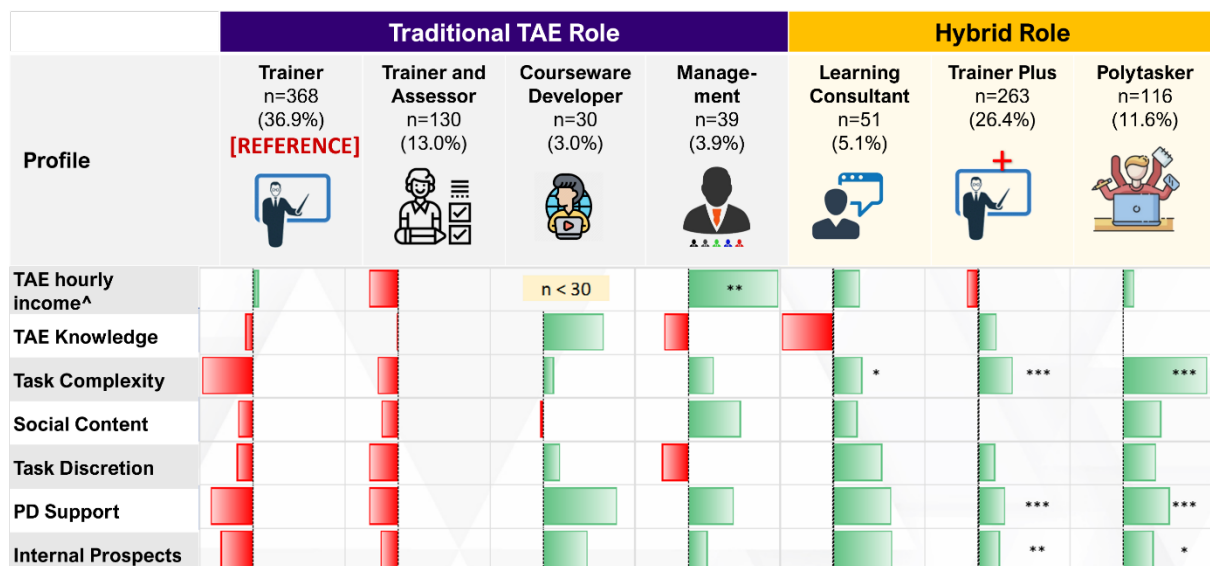
Note: \*p < .05, \*\*p < .01. \*\*\*p < 0.001.

However, the decline in the proportion of AEs reporting high task complexity (-4.9%) and task discretion (-8.6%) suggests that while AE jobs has generally improved, some AEs may feel that their roles have become more structured or less challenging. This reduction in complexity and discretion could potentially limit opportunities for creativity and decision-making, which may impact long-term engagement and motivation for some AEs.

### 2.4.3 AEs in hybrid roles tend to have better jobs

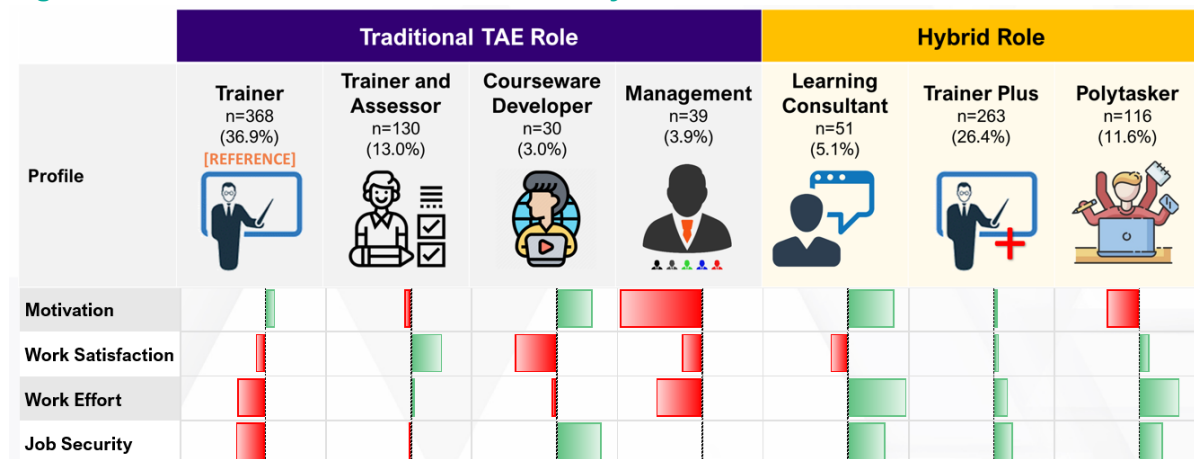
A closer examination of the seven AE types reveals stark differences in the jobs of AEs in traditional TAE roles compared to those in hybrid roles. As shown in Figure 19, AEs in hybrid roles tend to experience higher quality jobs compared to AEs in traditional TAE roles. Trainers and Trainer/Assessors experience lower quality jobs across all job components. This group represents almost 50% of the TAE workforce who are working in jobs they do not perceive to be of high quality. Comparatively, AEs that venture beyond traditional job roles into hybrid roles experience higher complex tasks, more support for professional development and better internal prospects.

Figure 19: Jobs of traditional vs hybrid roles



Note: \*p < .05, \*\*p < .01. \*\*\*p < 0.001.

Figure 20: Job outcomes of traditional vs hybrid roles



Correspondingly, AEs in hybrid roles tended to report better job outcomes such as higher work effort and job security (see Figure 20 above), although the differences were not statistically significant.

### 2.4.4 AEs in hybrid roles were more likely to be in permanent positions

A deeper investigation to the profile of AEs in traditional or hybrid roles revealed some interesting patterns. As shown in Figure 21, those taking on hybrid roles tend to be younger, working in non-public providers and more likely to be in full-time positions. For public providers, the findings seem to suggest a need to reconsider their strategies to engage younger talent and offer more hybrid roles to encourage innovation.

**Figure 21: Profile of AEs in traditional vs hybrid roles**








	Traditional TAE Role				Hybrid Role		
<b>Profile</b>	<b>Trainer</b> n=368 (36.9%) 	<b>Trainer and Assessor</b> n=130 (13.0%) 	<b>Courseware Developer</b> n=30 (3.0%) 	<b>Management</b> n=39 (3.9%) 	<b>Learning Consultant</b> n=51 (5.1%) 	<b>Trainer Plus</b> n=263 (26.4%) 	<b>Polytasker</b> n=116 (11.6%) 
<b>Average age</b>	50	50	48	47	43	48	46
<b>TAE experience</b>	8.9 years		10 years	9.3 years	9.6 years	11.3 years	10.1 years
<b>TP Profile</b>	Less In-House		Less Public		Less Public		
<b>Employment Type</b>	More Freelance			Less Freelance	Less Freelance	More Full-Time	
<b>Top 3 Sectors</b>	Education, ICT, Security	Education, Food Services, Healthcare	ICT, Construction, Environmental Services/Land Transport/Retail	Education, Healthcare, Energy & Chemicals, /ICT	Education, Professional Services, ICT	Education, Healthcare, Financial Services	Education, ICT, Healthcare








Figure 21 above illustrates the employment type by different AE types. Freelancers seem to be more likely in traditional roles, compared to those performing Trainer Plus and Polytasker roles who are more likely to be full-time staff. This reflects decisions made by TAE businesses to balance flexibility, cost, skill development, and operational needs. Freelancers in traditional TAE roles may be more involved in a transactional, task-oriented, project-based and short-term model, while the more complex Trainer Plus and Polytasker roles require stability and full-time commitment from staff with the necessary capabilities to perform a variety of tasks and adapt to changing demands of industries and learners.

### 2.4.5 AEs in hybrid roles and those in the Management group are most concerned about uncertain career trajectories. AEs in traditional roles were most concerned about insufficient access to continuous work.

Across the AE types, one of the biggest challenges faced in their TAE work is unclear career trajectories. Figure 22 presents the top three challenges reported by each type of AEs. For AEs in traditional TAE roles (except for those in management positions), their primary challenge is insufficient access to a continuous flow of work. This is more pronounced for

Trainers, Trainer/Assessor and Courseware Developers whose employment status is predominantly freelance (see Figure 22). In addition, about one third of Trainers (33.7%) lack bargaining power in terms of payment. Besides unclear career trajectories, those in Management positions experience insufficient access to specialised software or tools for work; and face difficulty in understanding and/or adapting to new policies/requirements.

**Figure 22: Top challenges reported by AEs in traditional vs hybrid roles**

	Traditional TAE Role				Hybrid Role		
Profile	<b>Trainer</b> n=368 (36.9%) 	<b>Trainer and Assessor</b> n=130 (13.0%) 	<b>Courseware Developer</b> n=30 (3.0%) 	<b>Management</b> n=39 (3.9%) 	<b>Learning Consultant</b> n=51 (5.1%) 	<b>Trainer Plus</b> n=263 (26.4%) 	<b>Polytasker</b> n=116 (11.6%) 
Top challenges	<ol style="list-style-type: none"> <li>1. Insufficient access to continuous flow of work (36.7%)</li> <li>2. Uncertain career trajectories (34.8%)</li> <li>3. Lack of bargaining power in payment (33.7%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Insufficient access to continuous flow of work (33.1%)</li> <li>2. Uncertain career trajectories (33.1%)</li> <li>3. Insufficient access to specialized software or tools for work (30.0%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Insufficient access to continuous flow of work (33.3%)</li> <li>2. Uncertain career trajectories (33.3%)</li> <li>3. mixed</li> </ol>	<ol style="list-style-type: none"> <li>1. Uncertain career trajectories (43.6%)</li> <li>2. Insufficient access to specialized software or tools for work (35.9%)</li> <li>3. Difficulty in understanding and /or adapting to new policies /requirements (33.3%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Uncertain career trajectories (39.2%)</li> <li>2. Difficulties in engaging learners in learning (33.3%)</li> <li>3. Difficulties in conducting training online (29.4%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Uncertain career trajectories (33.8%)</li> <li>2. Insufficient access to specialized software or tools for work (31.9%)</li> <li>3. Difficulties in conducting assessment online (30.0%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Uncertain career trajectories (32.8%)</li> <li>2. Difficulties in engaging learners in learning (29.3%)</li> <li>3. Lack of bargaining power in payment (28.4%)</li> </ol>

AEs in hybrid roles also face challenges in their roles. Both Learning Consultants and Polytaskers cite difficulties in engaging learners in learning as the second most challenging aspect of their role, with unclear career trajectories being the top challenge. Polytaskers also lack bargaining power in terms of payment, which may be a contributing factor to low levels of motivation they experience (see Figure 20).








**2.4.6 AEs in traditional TAE roles are less likely to use learning technologies, especially those in the trainer or trainer & assessor groups.**

Majority of AEs use learning technologies in their work. About 7 in 10 AEs currently use various types of tech-lite tools on a frequent basis, such as web-based seminars, e-assessments tools and asynchronous videos. However, less than a third of AEs use newer or more “tech-heavy” technologies such as gamification, mobile applications, simulations and AI frequently.

Figure 23 shows the percentage of use reported by AEs in different roles. AEs in traditional roles are less likely to use learning technologies, especially those in primary roles of trainer or trainer and assessor reporting less than average in almost all tools. Their lower usage of these tools could indicate a reluctance or lack of familiarity with digital platforms, which may hinder their ability to engage with technology-enhanced learning environments. This trend could limit the effectiveness of their TAE practices, potentially affecting the learning outcomes of their learners. The finding also highlights the need for targeted professional development to support these educators in incorporating technology into their work.



**Figure 23: Use of learning technology reported by AEs in traditional vs hybrid roles**

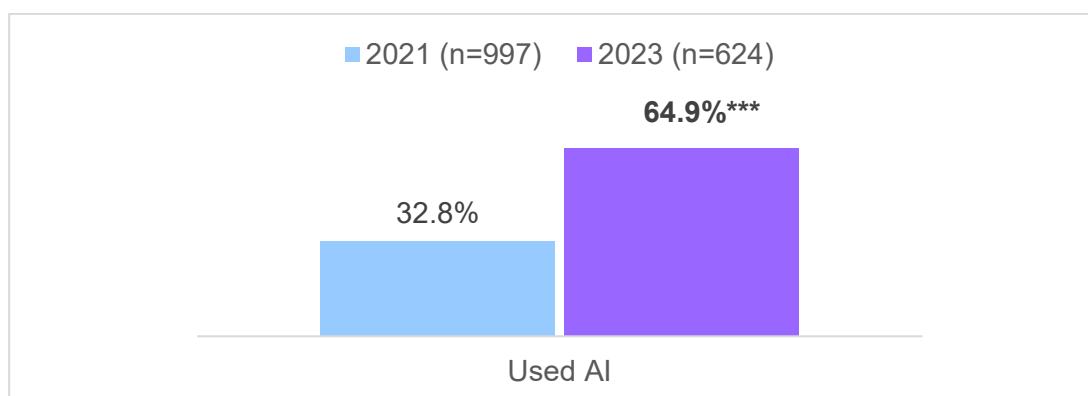
Profile	Traditional TAE Role				Hybrid Role		
	Trainer n=368 (36.9%) 	Trainer and Assessor n=130 (13.0%) 	Courseware Developer n=30 (3.0%) 	Management n=39 (3.9%) 	Learning Consultant n=51 (5.1%) 	Trainer Plus n=263 (26.4%) 	Polytasker n=116 (11.6%) 
Audio-visual training aids	71.2	68.5	63.3	79.5	70.6	<b>84.4</b>	76.7
Recorded videos	<b>81.8</b>	85.4	86.7	92.3	90.2	<b>92.4</b>	86.2
Learning Management Systems	<b>69.8</b>	76.9	76.7	71.8	<b>88.2</b>	<b>84.0</b>	73.3
Web-based seminars	87.2	<b>80.8</b>	<b>96.7</b>	94.9	<b>96.1</b>	<b>95.1</b>	91.4
Web-based forums etc	<b>73.6</b>	<b>70.0</b>	80.0	82.1	<b>90.2</b>	<b>84.8</b>	83.6
Collaboration platforms	<b>75.0</b>	<b>73.9</b>	83.3	76.9	<b>90.2</b>	<b>89.4</b>	84.5
Mobile applications for adult training	<b>37.0</b>	<b>34.6</b>	43.3	48.7	<b>54.9</b>	<b>50.6</b>	38.8
Gamification	<b>45.9</b>	<b>44.6</b>	60.0	59.0	62.8	<b>58.2</b>	56.9
Simulations	<b>34.2</b>	39.2	40.0	43.6	49.0	<b>48.3</b>	44.0
E-portfolios	<b>35.9</b>	43.1	50.0	48.7	45.1	<b>50.6</b>	39.7
E-assessment	<b>80.4</b>	<b>76.9</b>	<b>93.3</b>	89.7	84.3	<b>89.7</b>	88.8
Learning analytics	<b>56.5</b>	<b>53.9</b>	<b>80.0</b>	66.7	<b>74.5</b>	<b>71.9</b>	66.4
Artificial Intelligence	<b>27.7</b>	30.0	33.3	33.3	41.2	<b>39.5</b>	32.8

Note: Percentage bold in black means above average, percentage bold in red means below average.  $p < 0.05$ .

### 2.4.7 Increased AI use by AEs, but weak penetration of AI EdTech tools

The rapid rise of generative AI since November 2022 has shifted AEs' work. Figure 24 shows the increase in AI adoption within the TAE sector in the span of one year. The proportion of AEs using AI in their work has increased from 32.8% in 2021 to 64.9% in 2023. More AEs are also frequently using AI in their work, jumping from 5.4% in 2021 to 36.5% in 2023 (frequent use being defined as at least once a week in the 2023 survey). Additionally, 92.6% of AEs who have used AI in their work have also used generative AI.

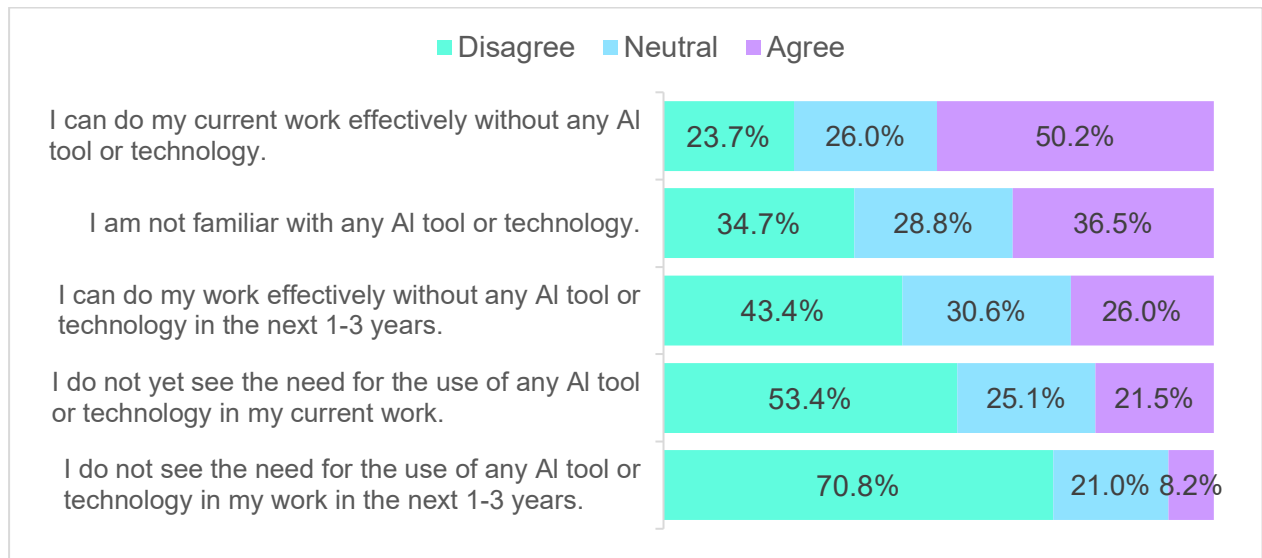
**Figure 24: AI adoption by AEs in training and adult education related work**



Note: \*\*\* $p < 0.001$ .

Among AEs that have not embraced AI, Figure 25 shows the predominant reason being that they can do their current work effectively without any AI tool or technology. About one third of AEs also reflected that they were not familiar with any AI tool or technology.

Figure 25: Reasons for not using AI for TAE work



Overall, approximately 7 in 10 AEs report that AI is essential for courseware development (76.8%) and curriculum design (74.7%). On the other hand, less than 6 in 10 believe AI is essential for course delivery (54.2%) or summative assessment (57.7%). These findings are generally consistent with our focus group discussions where AEs reported the main use of AI in their current work being to support content generation, curriculum design, activity ideas and setting assessment.

Figure 26: Top AI tools used by AEs



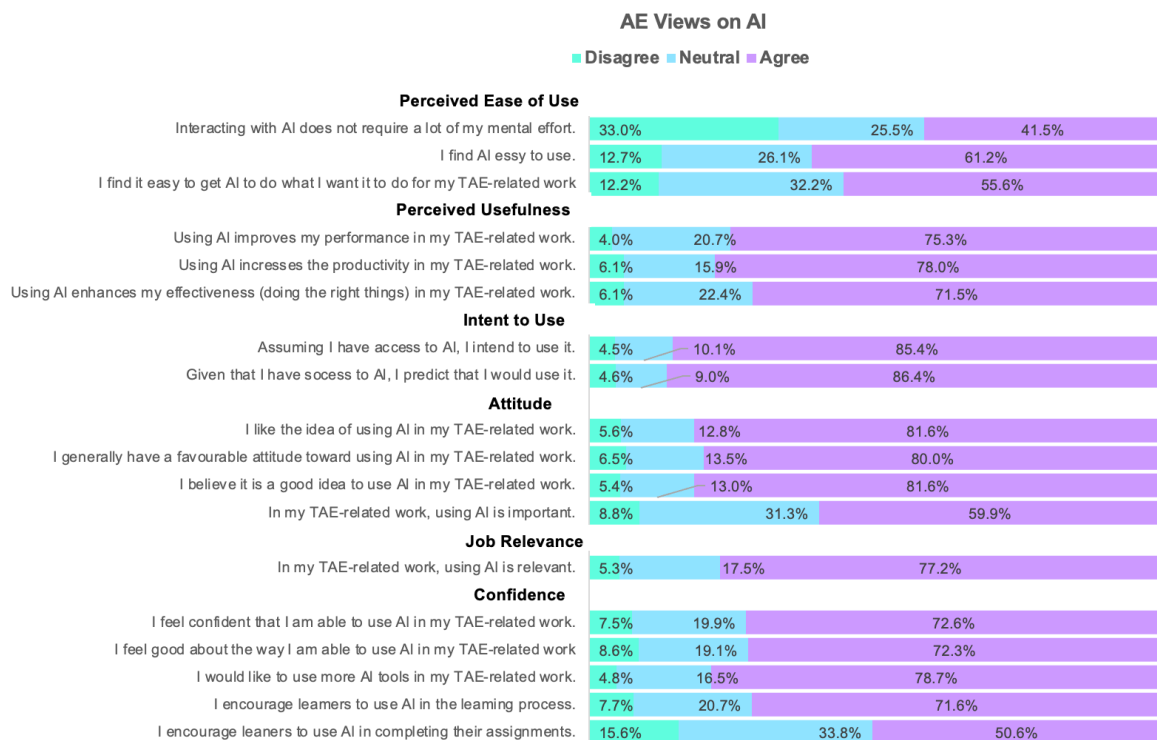
The analysis of AI tools commonly used by AEs reveals that AEs mainly rely on generative AI for Natural Language Processing (NLP) and text generation purposes, as well as a range of AI-enhanced tools, and visual AI and design tools to support their work (see Figure 26). The findings show that generic AI tools are most prevalent, while there is weak penetration of AI EdTech tools. In addition, some of the AEs reported very basic understanding or little understanding about AI, with misconceptions about email, augmented reality, and virtual reality as they classified these as AI tools.



## 2.4.8 AEs generally expressed positive views about the use of AI in TAE sector

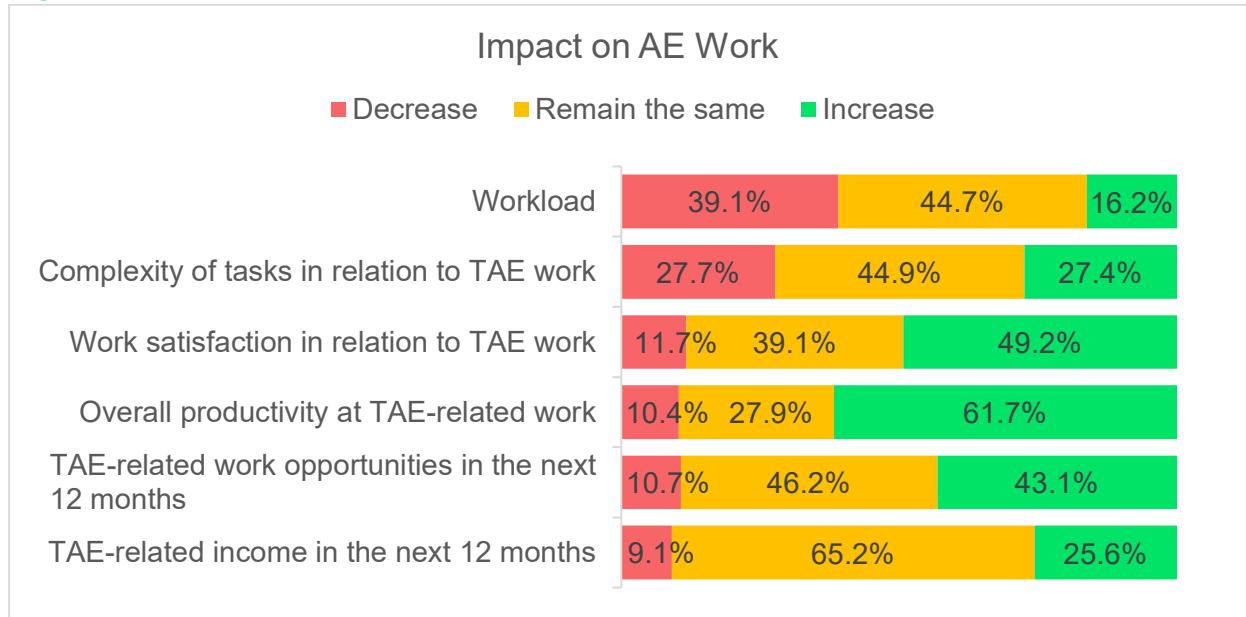
Overall, AEs are optimistic about the use of AI in their work, with 78% agreeing that AI enhances productivity in their TAE-related work, and more than 60% find AI tools easy to use. As shown in Figure 27 below, a large proportion of AEs (77.2%) agree that AI is relevant to their work, and nearly 60% view it as important. Additionally, almost 80% of AEs expressed a desire to incorporate more AI tools in their work, indicating a strong positive sentiment towards AI adoption and integration in the future.

**Figure 27: AEs' views on the use of AI in TAE work**



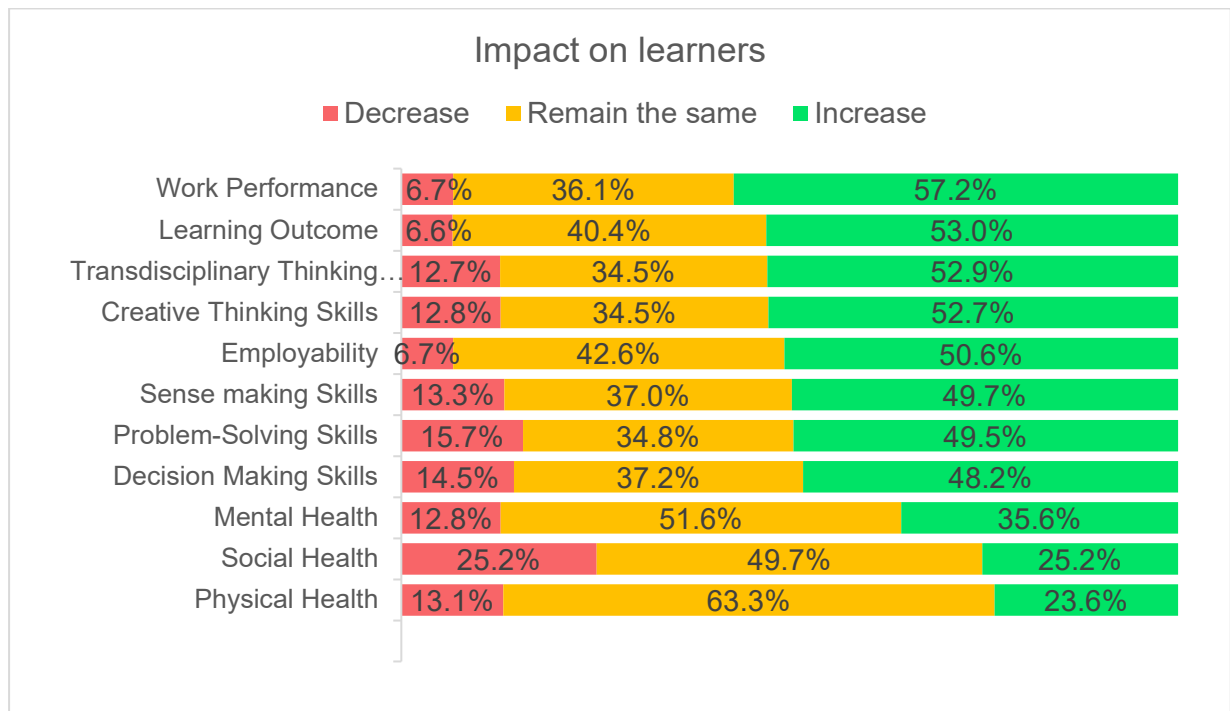
When it comes to the impact of AI, nearly half of AEs (49%) believe it has increased or will increase their work satisfaction (see figure 27). Even more AEs (62%) believe AI will improve their productivity. Additionally, around 39% expect AI to reduce their workload. Only a small minority of AEs are concerned about the negative impact of AI in relation to their work, with about 11% concerned that their job opportunities might decrease in the next year, and 9% who fear their income could drop due to AI. These findings indicate an overall positive outlook toward the use of AI among AEs and is consistent with the findings from our focus group discussions.

Figure 28: AEs' views on the impact of AI to their TAE work



The impact of AI on learners, as perceived by AEs, encompasses both positive and negative aspects. Figure 29 shows the mixed views.

Figure 29: AEs' views on the impact of AI on learners

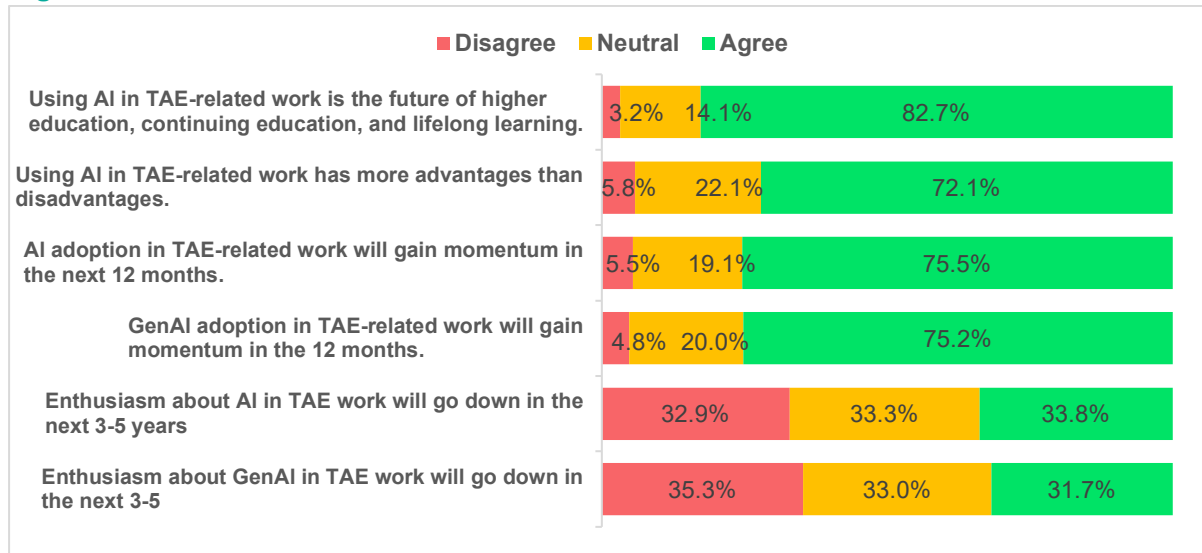


On the positive side, more than half of AEs believe AI will have a positive effect on learner's work performance (57.2%), employability (50.6%), as well as learning outcomes (53.0%), development of their transdisciplinary skills (52.9%) and creative thinking skills (52.7%). However, approximately 25% of AEs are concerned AI will have a negative effect on learner's social health. During focus group discussion, AEs were less positive about the impact of AI on learners, expressing concerns that reliance on AI might diminish critical thinking and problem-solving skills among learners. Nonetheless, they acknowledged that AI is here to stay and will

be integral to future learning, offering opportunities to personalise education and improve accessibility.

Figure 30 reports AEs’ views about the future use of AI in TAE work. Approximately 80% of AEs believe that the use of AI in learning is the future of the TAE sector. Additionally, 75% of AEs anticipate that the adoption of AI and GenAI will gain considerable momentum in the next 12 months. However one-third of AEs predict that this initial enthusiasm for AI in education will wane within the next 3-5 years (1 in 3 AEs).

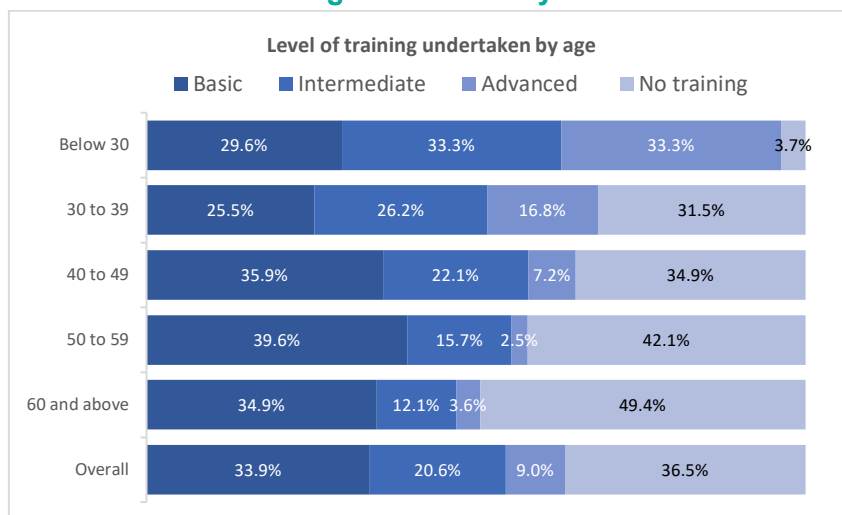
**Figure 30: AEs’ views on the future use of AI in TAE work**



### 2.4.9 Majority of AEs expressed a need for professional development in the use of AI

Overall, about one third of AEs have participated in some basic training related to the use of AI, as part of their upskilling and professional development, while more than a third of AEs have never received training related to the use of AI for education and training purposes. Figure 31 shows the results.

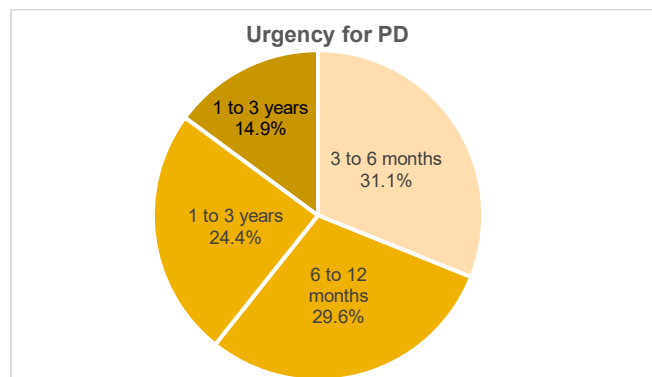
**Figure 31: Level of AI related training undertaken by AEs**



The figure also shows that younger AEs (below 30 and 30-39) tend to have more intermediate and advanced training compared to older AEs (50-59 and 60+), who have higher proportions of no training. This highlights a potential gap in AI proficiency among older AEs, potentially affecting their ability to fully leverage AI tools in their teaching and learning practices.

AEs seem to be aware of the importance of building up their AI capabilities. About 8 in 10 AEs expressed a need for training and professional development related to the use of AI tools for education and training purposes. Figure 32 below shows that among these AEs, about 3 in 10 expressed that they would need such training within the next 1 to 3 months.

**Figure 32: Urgency for PD expressed by AEs**



In addition to the capabilities related to the effective use of AI tools for their TAE work, some AEs also expressed concern over the ethics in the use of AI for training and adult education. Close to half of AEs reported limited understanding of the ethical implications of the use of AI in TAE. The main ethical concerns relate to accountability (e.g. academic rigor and integrity), data security and privacy, transparency and potential of AI to exacerbate inequalities. AEs participating in the focus group discussions emphasised the need for careful consideration and management of ethical issues as AI becomes more embedded in teaching and learning practices.

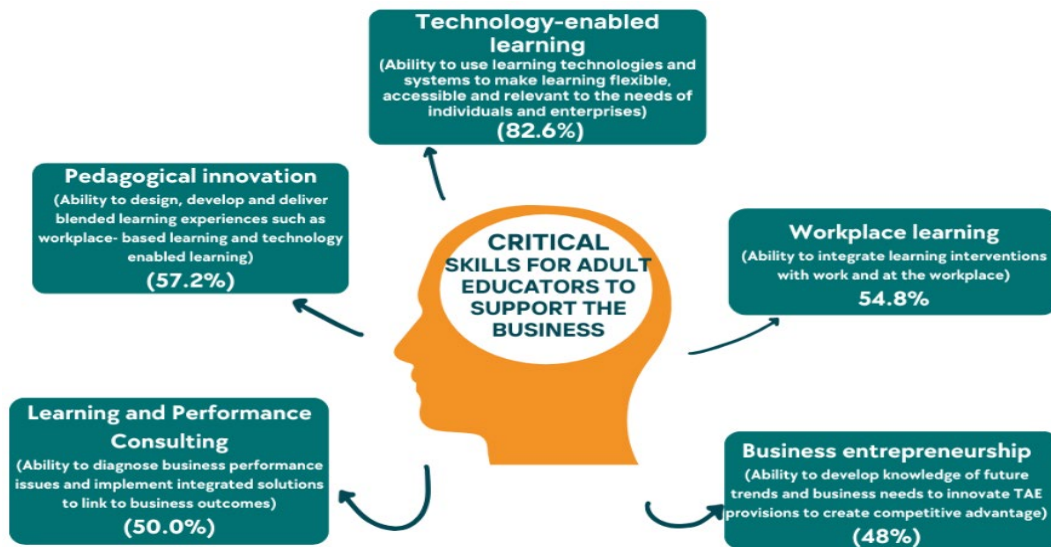
These findings suggest a need to build AE AI capabilities through prompt, tailored AI training programmes. Targeted support is needed for older AEs and those with basic training. The need and urgency of professional development in the use of AI is consistent with the findings from our focus group discussion, where AEs emphasised the urgent need to deepen their digital capabilities as generative technologies continue to reshape work and learning. They highlighted the importance of developing their ability to integrate technology into pedagogical practices to support future-oriented teaching and learning.

**2.4.10 TAE businesses need AEs with a blend of pedagogical, business, and industry expertise, plus relevant qualifications**

We surveyed TPs about their staff performance. The findings reveal that 22% of TPs reported that at least 10% of their staff were unable to cope with their existing duties. This, however, marks a notable improvement from TAE1 when TPs reported that 45% of their staff were struggling.

Regarding the essential skills TPs believe AEs need to support current business needs, technology-enabled learning skills were identified as the most critical (see Figure 33 below). These skills are key to creating flexible, accessible, and relevant learning experiences that align with the needs of both individuals and businesses. The second most important skill, according to TPs, is pedagogical innovation. Additionally, TPs highlighted the need for AEs to be equipped with stronger capabilities to integrate learning interventions with work and at the workplace, followed by skills related to business entrepreneurship and learning and performance consultancy.

**Figure 33: Skills need to support current TAE business needs reported by TPs**



Our findings show that 14% of TPs are concerned that their staff do not have the skills the organisation requires to remain competitive in the next 1-3 years. The top three skills AEs require to meet future business needs (within the next 1-3 years), as reported by TPs are critical core skills, such as communication, collaboration and problem solving; career pivoting acumen to remain relevant and up-to-date to the changing market; and learning technologies, including AI.








In addition to the skills in demand, TPs also share that when recruiting AEs, they will also consider relevant training qualifications (70.5%), current industry experience (50.8%), educational qualifications (50%), positive attitude, confidence and motivation (45.1%) and relevant TAE experience of 3-5 years (43.6%).

While employers prioritise relevant skills and to a lesser extent current industry experience, as outlined above, nearly half of the AEs (47%) reported need for development in their domain and/or pedagogical competencies. In addition, 87% of AEs believe their domain and/or pedagogical currency needs to be renewed. This discrepancy highlights a worrying gap between the current state of AE's competencies and the expectations of employers to meet future business needs. This emphasises a pressing need for the professional development of AEs to bridge this gap and ensure AEs can meet both current and future needs of the TP and learners.

### 2.4.11 AEs reported a high need for professional development in digital literacy, subject knowledge, virtual collaboration, learning technology design and implementation and learning analytics

Across the board AEs reported a high need for professional development in digital literacy, knowledge and understanding of subject field(s), virtual collaboration, learning technology design and implementation and learning analytics. The need for professional development in these areas is universally important but varies in priority across specific roles, as shown in Figure 34.

**Figure 34: Top needs for professional development reported by AEs**

	Traditional TAE Role				Hybrid Role		
Profile	<b>Trainer</b> n=368 (36.9%) 	<b>Trainer and Assessor</b> n=130 (13.0%) 	<b>Courseware Developer</b> n=30 (3.0%) 	<b>Management</b> n=39 (3.9%) 	<b>Learning Consultant</b> n=51 (5.1%) 	<b>Trainer Plus</b> n=263 (26.4%) 	<b>Polytasker</b> n=116 (11.6%) 
High need for PD (in descending order)	1. Digital literacy 2. Knowledge and understanding of subject field(s) 3. Virtual collaboration 4. Learning technology design and implementation 5. Learning Analytics	1. Knowledge and understanding of subject field(s) 2. Virtual collaboration 3. Learning Analytics 4. Curriculum design and development for blended-learning 5. Digital literacy	1. Digital literacy 2. Knowledge and understanding of subject field(s) 3. Learning technology design and implementation 4. Problem solving 5. Curriculum design and development for online learning	1. Digital literacy 2. Knowledge and understanding about learners' industries 3. Pedagogical competencies in training in subject field(s) 4. Curriculum design and development for online learning 5. Learning Analytics	1. Learning Analytics 2. Knowledge and understanding of my subject field(s) 3. Problem solving 4. Virtual collaboration 5. Learning/training needs analysis	1. Digital literacy 2. Knowledge and understanding about learners' industries 3. Curriculum design and development for online learning 4. Learning Analytics 5. Knowledge and understanding of subject field(s)	1. Learning technology design and implementation 2. Knowledge and understanding about learners' industries 3. Learning Analytics 4. Digital literacy 5. Knowledge and understanding of subject field(s)

AEs are responsible for their learning, actively engaging in activities that enhance their job performance. Over 9 in 10 AEs (92%) attended at least one professional development activity, such as attending a course, workshop, educational seminar or conference; studying for micro-credentials, participating in on-the-job-training or organised networking session, studying for higher-level qualification etc. AEs engage in professional development as 77% see it as part of their personal development plan, 70% consider it their responsibility for job proficiency, 67% have a genuine interest in learning, and 50% prioritise keeping their knowledge and skills current. The less common motivators include uncertainty and so 'just decide to do it' (1%), feeling pressured (1.8%), and participating out of a sense of obligation (4.9%).

These findings show that most AEs are highly driven by personal career goals, a commitment to job excellence, and commitment to learning. The high percentages suggest a workforce that values professional development. However, while most AEs seem highly motivated, there is a small minority of AEs who may not fully recognise or prioritise the value of their own professional development.

### 2.4.12 Summary

Hybridity is reshaping AE roles by blending traditional and multifaceted responsibilities, creating more dynamic and flexible job profiles. While some AEs, like Trainers, Trainer/Assessors, Courseware Developers, and those in Management roles, still dedicate most of their time to traditional functions, a growing number are taking on hybrid roles. These include the Learning Consultant, who combines consultancy with management and training; the Trainer Plus, who splits his/her time between training, courseware development, and management; and the Polytasker, whose responsibilities span multiple areas such as



curriculum leadership, management, courseware development, and learning consultancy. Hybridity is fundamentally reshaping the landscape of adult education by making AE roles more dynamic, complex, and integrated.

Overall, there have been significant improvements in AE jobs, including higher pay, better domain knowledge, enhanced social dimensions in job content requiring AEs working collaboratively and effectively with others to contribute to group efforts to achieve identified objectives, increased professional development, and improved work prospects, leading to greater job satisfaction and intrinsic motivation among AEs from TAE1 to TAE2. The findings further reveal a significant disparity in the jobs between AEs in traditional TAE roles and those in hybrid roles. AEs working in hybrid roles generally report better jobs, including more complex tasks, greater support for professional development, and better internal career prospects. In contrast, Trainers and Trainer/Assessors, who represent almost 50% of the TAE workforce, experience lower quality jobs across all components. This suggests that a large portion of the workforce may be working in roles they perceive as less fulfilling or lacking in opportunities for growth. AEs in hybrid roles having better jobs highlights the value of diversified and multifaceted job functions, indicating that expanding job responsibilities beyond traditional TAE roles can enhance job satisfaction and provide more engaging and rewarding work environments. This points to the need for targeted strategies to improve the job content and job resources of AE jobs, or redesign jobs for those in traditional roles, potentially through greater task variety, autonomy, and opportunities for professional development.

The findings also suggest that TAE businesses are making strategic decisions to balance flexibility, cost, and skill development by employing freelancers in more traditional, short-term roles, while reserving full-time positions for the more complex Trainer Plus and Polytasker roles. This highlights a shift towards a more tailored workforce structure, where flexibility is prioritized for simpler, task-oriented roles, and stability is necessary for roles that require a broader skill set and greater adaptability. TAE businesses may need to consider how to better support full-time staff in these roles, offering professional development and stability, while also evaluating how freelancers can contribute more effectively to dynamic and project-based environments.

Findings show that AEs generally have a positive view about the use of AI within the TAE sector. However, the majority of AEs also expressed a clear need for professional development to enhance their AI capabilities. In line with this, TPs identified technology-enabled learning skills, including AI, as the most crucial competencies AEs need to meet current and future business demands. These results highlight the importance of providing targeted, prompt AI training programs to strengthen AE capabilities. Additionally, AEs also reported a strong demand for professional development in areas such as digital literacy, subject knowledge, virtual collaboration, learning technology design and implementation, and learning analytics.

These findings emphasize the urgency of offering targeted, up-to-date professional development opportunities and programmes for AEs in AI and related digital skills to ensure they effectively and ethically engage with new technologies and pedagogical innovations. Professional development efforts should be inclusive, addressing the specific needs of older educators and those with limited prior knowledge. The focus on technology-enabled learning and AI in training programs is essential for educators to remain relevant and meet the evolving needs of learners and the evolving TAE businesses.

## 3. Conclusions and Recommendations

In this section we discuss main improvements and weaknesses observed across the two cycles between TAE1 and TAE2. This offers nuanced insights to inform our recommendations.

### 3.1 Significant improvements observed

Between 2018 and 2022, TAE businesses made strides in business practices, innovation, and technology strategies. Smaller private providers (micro and small) showed significant improvements in their business and innovation models, indicating a capacity for growth and adaptation. These businesses were better equipped to withstand crises, such as the Covid-19 pandemic, by focusing on client satisfaction, market expansion and adaptability. This resilience was reinforced by a strong correlation between client satisfaction and improved business performance. Medium-large private providers, while experiencing challenges, maintained an ability to improve operational efficiency. TAE businesses that leveraged new technologies, strong client relationships, and international partnerships were well-positioned to thrive. The sector's ability to adapt to changing circumstances highlights the strength of businesses that prioritize innovation, customer engagement, and global networking as key drivers of resilience and competitiveness.

Corresponding enhancements in AE jobs have been observed, including higher pay, better domain knowledge, enhanced social dimensions in job content requiring AEs working collaboratively and effectively with others to contribute to group efforts to achieve identified objectives, increased professional development, and increased professional development opportunities and support, leading to greater job satisfaction and intrinsic motivation from TAE1 to TAE2. Hybridity in job roles is also observed. AEs in hybrid roles report particularly better jobs, with more complex tasks, stronger support for professional development, and better career prospects. This suggests that diversified job roles contribute to more engaging and rewarding work environments, highlighting the value of expanding job responsibilities beyond traditional TAE roles to improve overall job satisfaction and enhance career growth opportunities.

### 3.2 Critical weaknesses observed

Despite improvements, TAE businesses also displayed significant weaknesses between 2018 and 2022. Larger private providers (medium-large) shifted their focus to efficiency, weakening their competitive edge in product innovation. Public providers experienced stagnation, signalling a need for renewed strategies. The overall business performance weakened, with declining returns and stagnant client satisfaction across the sector. These weaknesses suggest that further efforts are needed to boost quality, enhance client relationships, and rebalance the focus between operational efficiency and product innovation to ensure long-term competitiveness and growth.

In line with the declining TAE business performance, the income surplus of the TAE sector over national median is shrinking, despite a high level of educational attainment among Adult Educators. Notably, 40% of Adult Educators hold a master's or doctoral degree, and 96% possess a training qualification. However, their income growth is lagging the national median,



reflecting a slower rate of increase in earnings compared to the broader workforce. This trend highlights a growing disparity between the qualifications and the financial rewards of professionals in the TAE sector, suggesting a need to address the award mechanism despite the high levels of expertise within the field.

Despite enhancement in AE jobs in most dimensions, declines are observed in task complexity and discretion. The reduction in task complexity and task discretion could potentially pose risks to AEs' professional identity and agency, potentially leading to job dissatisfaction, lack of motivation, and lower performance and productivity.

### 3.3 Implications and Recommendations

The findings highlight the need to elevate TAE businesses, jobs and skills for a future-ready workforce. It is increasingly pressing to ensure the long-term relevance and sustainability of the TAE sector by adopting more forward-thinking and socially responsible approaches to education and training.

The rise in public training providers and the shift toward customized, non-WSQ offerings suggest a growing demand for training that is more tailored to specific business needs. To address this, providers should focus on creating flexible and context-specific training solutions that cater to diverse industry demands. Additionally, the increase in reliance on government funding calls for a closer examination of funding models and a balance between public support and sustainable revenue generation strategies.

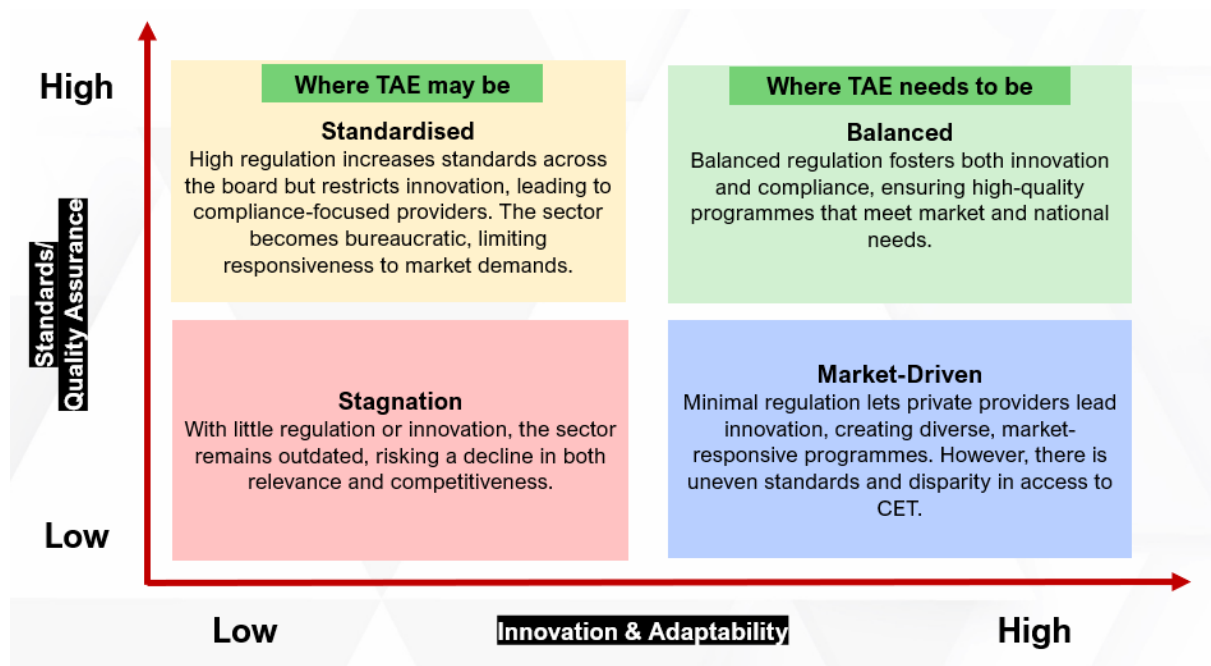
The significant decline in new entrants, coupled with the dominance of long-established businesses, points to a need for fostering innovation and reducing barriers to entry. This may require the introduction of policies that support new providers and encourage competition, ensuring that the industry remains dynamic. For existing providers, the shift towards operational efficiency at the cost of product innovation, especially among medium-large private providers, suggests a need to refocus on developing innovative, high-quality training programs. Public providers, facing stagnation, must invest in revitalizing their product offerings and embrace a culture of continuous innovation to remain competitive.

Importantly, the overall decline in business performance and client satisfaction highlights the need for ongoing improvements in quality assurance and innovation practices. Strengthening these areas will be crucial in ensuring long-term growth and relevance in the sector. This framework in Figure 35 assesses regulatory approaches along two essential dimensions: *Standards/Quality Assurance* and *Innovation & Adaptability*. This framework allows for a more nuanced understanding of how different regulatory models influence the sector's responsiveness and quality.

Our findings seem to suggest that Singapore's TAE sector currently sits within the *Standardised* category, where the regulatory focus prioritises quality assurance. This standardised approach has successfully ensured consistency and accountability across providers, particularly within public sector institutions, contributing to the sector's reputation for high standards. However, a strong focus on compliance can lead to a more conservative operating environment, where processes and offerings may be defined within fixed parameters (i.e. the Workforce Skills Qualification Framework). While this approach has been instrumental

in preserving quality, it may constrain the sector’s ability to adapt quickly to new industry demands and changing learner needs.

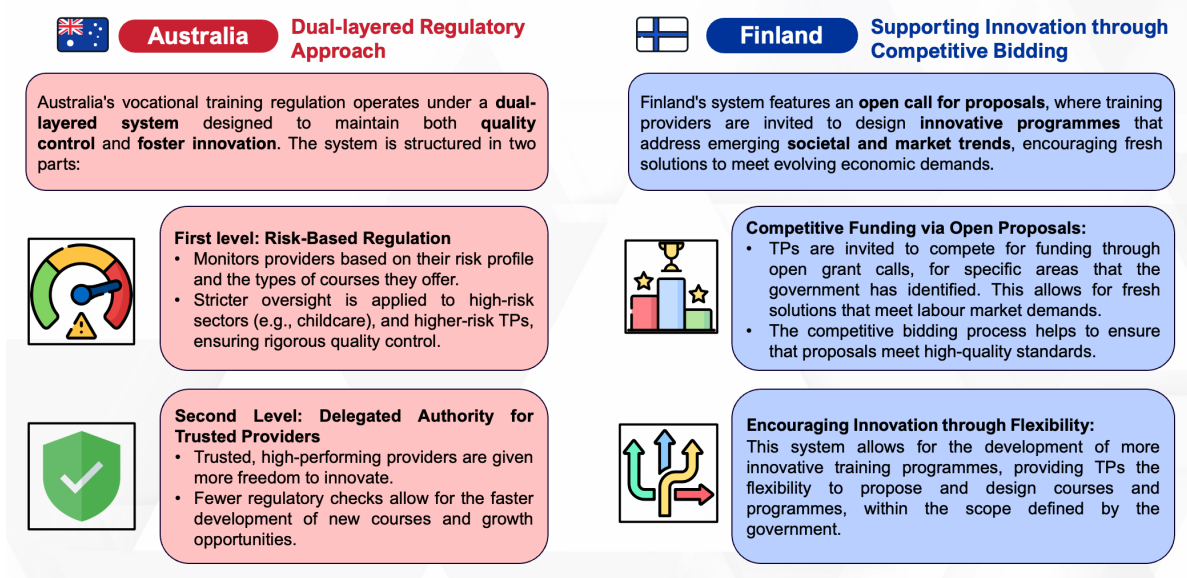
Figure 35: Regulatory framework for the TAE sector



A shift towards a *Balanced* regulatory model, which combines strong quality standards with adaptability, presents a promising direction. This more balanced regulatory approach presents a strategic pathway for advancing Singapore’s TAE sector, enhancing both its capacity for innovation and its commitment to quality standards. By fostering a regulatory environment that encourages adaptability without compromising rigor, the TAE sector would be better positioned to respond to evolving market demands and emerging skills needs. This realignment could also cultivate a more competitive and diverse provider landscape, where all providers can operate with the flexibility necessary to innovate and expand their offerings, enriching the sector’s resilience and adaptability. While the focus on quality has strengthened standards across the sector, the current emphasis may limit responsiveness to rapid shifts in industry requirements. A balanced regulatory framework, designed to uphold both compliance and adaptability, would empower providers to refine curricula, leverage advanced technologies and build strategic partnerships that align with Singapore’s workforce needs. This approach would not only expand the sector’s capacity to support lifelong learning but also reinforce its role as a vital contributor to national economic and workforce development objectives.

Examples from other countries that aim to support both high quality and innovation provide some insights on how a balanced approach could be achieved. In Australia, for example, a dual-layered regulatory approach balances quality assurance with flexibility, see Figure 36. This system adopts a risk-based regulation model, where oversight is applied more rigorously to high-risk areas, while trusted, high-performing providers are granted more autonomy to innovate with a self-assurance through standards (ASQA, 2024). This tiered system allows for strict quality control where necessary, without stifling the ability of reliable providers to adapt and develop new offerings.

**Figure 36: Lessons from other countries to support both quality and innovation**



Finland provides another example through its competitive bidding process, which encourages innovation within a quality-assured framework. Here, training providers can apply for funding through open grant calls focused on emerging societal and market needs. This approach not only promotes flexibility but also ensures that funded programmes align with current workforce demands, as proposals are selected based on both their innovative potential and their alignment with high standards. One potential area to implement this approach in Singapore is the development of green skills, in line with the Singapore Green Plan. This could involve providing grants to support the creation and delivery of green skills programs, alongside campaigns to raise awareness of the benefits of sustainable practices. Additionally, fostering partnerships between TPs and industry stakeholders could help assess green skills needs, identify skills gaps, and ensure that training programs are aligned with emerging green technologies. Such efforts could include joint curriculum development focused on sustainability and green technologies, as well as professional development opportunities for AEs, such as networking and collaboration in the area of green job skills.

Our findings highlight a need to support AEs for better jobs and skills. The changing trend of TPs in their shift towards offering more bespoke learning solutions and consultant services to support organisational transformation, necessitates a workforce with deep pedagogical and industry knowing. As AEs respond to the changing nature of work and learning, so too have their roles. Many AEs are taking on more complex and multiple roles. Recognising this diversity and encouraging their professional development along with recognition and reward for this diverse skill set among educators is key to developing a TAE workforce that is current, competent and motivated.

Strengthening the capability development of AEs in the TAE sector necessitates a strategic approach to improving the relationship between the TAE sector and industry. A pivotal element in this strategy involves creating multiple pathways for AEs and Industry practitioners. This includes fostering the growth of 'dual professionals' to strengthen workplace learning. 'Dual professionals' are industry practitioners, currently active in their respective fields, who are provided with opportunities to assume dual roles in both their industry and in training or

teaching capacities. Creating the space and opportunities for industry professionals to take on education and training roles apart from their day-to-day operational work will allow for more professional development opportunities, but also greatly benefit their companies. This innovative model proposes a new standard in businesses and industries; with the establishment of these structured dual roles, industry practitioners maintain their existing industry roles, but also take on training and development opportunities within their companies. By adopting this model, these individuals become valuable assets to their companies, with their ability to combine practical industry insights and pedagogical expertise. This enhances the organisation's training endeavours and contributes to its ongoing growth and competitiveness in a dynamic environment.

Other options include providing incentives for educators to pursue ongoing learning opportunities, fostering robust knowledge sharing networks to facilitate closer collaboration between industry players and educators. This includes inviting Industry Practitioners as guest speakers in TAE organisations, brokering opportunities for AEs to participate in industry learning and development/ consultancy projects. Another option would be to incorporate opportunities for AEs to take on 'practiceships' or industry attachments in the industry. These experiences enable AEs to gain hands-on experience, thereby facilitating meaningful partnerships with businesses. This approach allows for a deeper understanding of the relationship between industry and pedagogy, with the overall aim of enhancing the authenticity and quality of teaching and learning and supporting AEs for future 'hybrid' roles.

There is an increasing demand and opportunity for TAE professionals to use AI at work. Supporting and encouraging AI adoption through professional development opportunities and resources will build the AI capabilities of AEs, empowering them to confidently navigate the digital age and contribute productively.

Moving forward, prioritising the professional development of AEs in important and in-demand skills, together with strengthening the links between industry and pedagogy and building AI and EdTech capabilities of educators is necessary to empower them to navigate the changing, digitalised world of work and learning.

As the National Centre of Excellence for Adult Learning, the Institute for Adult Learning (IAL) is well positioned to support the growth and adaptability of the TAE sector and its professionals. IAL continues to drive pedagogical innovation and research and plays a leading role in empowering TAE professionals to innovate their training beyond the norm and to come together as a community to push boundaries on adult pedagogical innovation and research.

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## References

- ASQA. (2024). *Self-assurance through the Standards*. Australian Skills Quality Authority. <https://www.asqa.gov.au/how-we-regulate/self-assurance-0/self-assurance-through-standards>
- Chen, Z., Ramos, C., Pua, L.D., & Cheng, S. C. (2020). *Training and Adult Education Landscape in Singapore: characteristics, challenges and policies*. Singapore: Institute for Adult Learning. [https://www.ial.edu.sg/getmedia/fa78f92c-d856-41c6-acda-896e93967a52/TAE-Landscape-Report\\_Final1\\_1.pdf](https://www.ial.edu.sg/getmedia/fa78f92c-d856-41c6-acda-896e93967a52/TAE-Landscape-Report_Final1_1.pdf)
- Ministry of Manpower. (2024). Labour Market Statistics and Publications. <https://stats.mom.gov.sg/Pages/Labour-Force-Summary-Table.aspx>
- Ministry of Manpower. (2023). Comprehensive Labour Force Survey, Manpower Research & Statistics Department, MOM. <https://stats.mom.gov.sg/pages/income-summary-table.aspx>
- Singapore Parliament. *Parliamentary Debates*. House of Representatives. 2 October 2018. <https://sprs.parl.gov.sg/search/#/fullreport?sittingdate=02-10-2018>
- Singapore Parliament. *Parliamentary Debates*. House of Representatives. 7 March 2022. <https://sprs.parl.gov.sg/search/#/fullreport?sittingdate=07-03-2022>
- SkillsFuture Singapore. (2024). Skills Demand for the Future Economy Report 2023/24. <https://www.skillsfuture.gov.sg/docs/default-source/skills-report-2023/sdfe-2023.pdf>
- SkillsFuture Singapore. (2018). *Skills Framework for Training and Adult Education*. [https://www.skillsfuture.gov.sg/docs/default-source/skills-framework/sfw\\_tae\\_booklet\\_20181101\\_finalv01.pdf](https://www.skillsfuture.gov.sg/docs/default-source/skills-framework/sfw_tae_booklet_20181101_finalv01.pdf)