

STRATEGIC FORESIGHT:

Four Futures Scenarios for Training and Adult Education in Singapore

Horizon 2035

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At A Glance

What will training and adult education look like in Singapore in 2035?

This report does not try to predict the future. Instead, it presents four different scenarios — ways in which things could plausibly unfold — to help people think through the possibilities.

These scenarios were built through rigorous research: drawing on a review of more than 4,000 academic publications and recent news records from the past 18 months, as well as direct engagement with over 100 stakeholders through interviews, futures workshops, panel discussions and field visits.

Stakeholders include industry leaders, training providers, trade associations, professional bodies, futures experts, policy makers, and adult educators.

The four scenarios are deliberately constructed as distinct future logics rather than mutually exclusive outcomes. In practice, Singapore's TAE ecosystem may combine elements of several scenarios at the same time. Different industries, occupations and learner groups may also evolve in different directions. The scenarios should therefore be read as lenses for challenging assumptions and stress-testing choices, not as “all-or-nothing” forecasts.

Scenario 1

THE TRUSTED SYSTEM

National standards and skilled educators provide trusted, portable qualifications and structured support. The system is coherent and inclusive but can struggle to keep pace with changing work.

Scenario 3

THE REPUTATION ECONOMY

Trusted practitioners deliver highly contextual learning tied directly to workplace performance. Expertise and responsiveness flourish, but access to training and portability of qualifications depends on networks and reputation.

Scenario 2

THE AI SKILLS NETWORK

AI makes recognised learning personalised, continuous and available on a national scale. Access and consistency improve, but human support and accountability become harder to locate.

Scenario 4

THE SKILLS MARKET

People build capability directly through AI and prove it through performance. Learning becomes abundant and opportunity less credential-bound, but trusted visibility and access remain uneven.

SECTION A

Evidence Base

The scenarios are grounded in a multi-source evidence base spanning published literature and direct stakeholder engagement across the sector.

SOURCE TYPE	VOLUME	STAKEHOLDERS
LITERATURE AND MEDIA		
Academic literature, grey literature, and news articles	4,338 records	
STAKEHOLDER ENGAGEMENT		106 PAX
Individual interviews	30 interviews	5 adult educators · 12 training providers · 8 industry experts · 5 trade associations and professional bodies
Focus group discussions	2 groups	2 adult educators · 4 training providers
Futures workshops	3 workshops	18 adult educators · 9 training providers · 14 industry experts
Site visit	1 visit	6 individuals and a training provider
Expert panel discussion	1 panel	6 international and local experts
Policy reference group	1 group	18 individuals from 5 policy divisions

SECTION B

Methodology

This study seeks to explore how Singapore's training and adult education sector might plausibly evolve by 2035, and what structural forces would drive that change.

The study uses a structured foresight methodology grounded in a 2-by-2 futures matrix approach. Rather than forecasting a single predicted future, the aim was to construct a set of distinct, internally coherent scenarios that stakeholders can use to stress-test strategy and policy against a range of plausible futures.

01	02	03	04
Driving Force Identification Synthesised candidate driving forces from a large multi-source evidence base, refined through stakeholder interviews and focus groups, then scored each force for impact and uncertainty using a structured independent scoring exercise informed by Delphi principles.	Axis Selection Grouped the driving forces into two composite axes, each built from a cluster of related forces representing a critical uncertainty about who decides what learning is valued and how capability is formed. Remaining forces became contextual enrichers applied across all four scenarios.	Scenario Construction via CLA Built each quadrant using Inayatullah (2019)'s Causal Layered Analysis (CLA): worldview → myth/metaphor → litany → systemic causes. CLA ensures internal coherence across the four analytical layers rather than projecting trends forward.	Validation and Iteration Each worldview was treated as a hypothesis and tested against the litany. Where contrary evidence was both frequent and severe, the worldview was revised. Isolated contrary evidence was retained as tension within the scenario.

SECTION C

Driving Forces

Seven driving forces shaping the future of the training and adult education (TAE) sector were identified through the multi-stage process described in Section B. Before examining these forces, it is worth establishing the broader external environment within which the TAE sector operates, and the forces arising from it that can shape developments for the TAE sector.

External Forces: What capabilities will Singapore need?

Unlike sectors that directly shape consumer demand, the TAE sector is largely responsive to changes in the wider economy and society. Geopolitical shifts, technological change, economic restructuring, the green and energy transitions, and demographic change all influence what capabilities are needed, who requires reskilling, and how quickly the sector must respond. These external forces shape the demand environment for training and adult education.

External forces	What they may change for TAE
Geopolitics and global trade	New strategic industries, supply-chain restructuring, sovereign capability needs
Economic restructuring	Job displacement, sectoral growth/decline, changing employer demand
AI and technological change in industry	Job redesign, new human–AI capabilities, faster skill obsolescence
Green transition and sustainability	Green skills, carbon literacy, sustainability reporting, new technical capabilities
Energy transition	Renewables, storage, hydrogen and potentially nuclear-related technical, safety and regulatory skills
Demographic change	Longer working lives, mature-worker reskilling, different learner profiles
Changing nature of work	More fluid careers, platform work, hybrid jobs, workplace-based capability development
Social expectations and inclusion	Greater emphasis on equitable access, lifelong employability and differentiated learning support

TAE Driving Forces: How will the sector respond?

While the external environment shapes what capability demands emerge, the TAE driving forces determine how effectively the sector responds. These forces concern governance, institutions, technologies, providers, adult educators, credentials and learning arrangements through which changing workforce needs are translated into training and capability development.

Each driving force is expressed as an uncertainty rather than a predicted direction of change; the endpoints indicate contrasting ways in which the force could plausibly evolve towards 2035.

DF 01

TAE Ecosystem Governance and Coordination

How policy, funding, regulation, quality assurance and institutional arrangements shape the organisation and coordination of the TAE ecosystem.

Will the sector move towards stronger central coordination and oversight, or towards more decentralised, market-led provision with greater autonomy for employers, providers and other actors?

DF 02

Role of AI and Automation in the TAE Sector

How AI and automation reshape the design, delivery, assessment and administration of learning, and the division of roles between technology and human professionals.

Will AI primarily augment human educators and providers, or increasingly take primary responsibility for functions such as learning design, delivery, feedback and assessment?

DF 03

Credibility of Qualification

How capability is recognised, verified and trusted by employers, learners and other stakeholders.

Will institution-issued qualifications remain the dominant and portable signal of capability, or will trust increasingly shift towards alternative evidence such as skills records, portfolios, demonstrated performance and employer or industry validation?

DF 04

Basis for Measuring Value of Training

How the value and effectiveness of training are evidenced and judged.

Will accountability remain centred largely on participation, completion, certification and compliance, or shift towards evidence of workplace application, performance improvement, career outcomes and organisational impact?

DF 05

Role of Training Provider and Adult Educator

How the position and contribution of training providers and adult educators evolve within the capability-development ecosystem.

Will providers and educators remain the primary organisers, designers and facilitators of learning, or shift towards roles that encompass coaching, curation, capability diagnosis and workplace transformation, as more learning occurs through workplaces, platforms and self-directed pathways?

DF 06

Diversity of Learners' Profile and Motivation

How the growing diversity in learners' circumstances, capabilities, motivations and goals shapes access, participation and learning needs.

Can the sector maintain scalable, standardised provision while responding effectively to increasingly diverse learner needs?

DF 07

Speed and Format of Learning

How quickly learning provision responds to changing capability needs, and how learning is organised, delivered and accessed. s

Will provision remain predominantly structured, programme-based and cohort-scheduled, or shift towards more modular, just-in-time, on-demand and workplace-embedded forms of learning?

SECTION D

2-by-2 Futures Matrix

Rather than treating the axes as two isolated driving forces, each axis synthesises a broader cluster of interrelated forces that jointly shape the TAE system. This produces four futures that are more sectorally meaningful, allowing us to examine how different conditions could reshape the sector as a whole, the roles of adult educators, the strategies of training providers, and the experiences and choices of learners.

AXIS 1 Capability Validation: Who decides what capability is valued? The shared question is what confers value on learning, and who decides. This concerns legitimacy, authority, and the currency of trust in the labour market. <table><tr><td> CENTRALISED Value is conferred by institutions and the central authority. Qualification is the marker. The state, its frameworks, and its awarding bodies underwrite what counts. </td><td> DISTRIBUTED Value is established across employers, markets, professional communities and evidence of demonstrated performance, without a single central authority. </td></tr></table>	CENTRALISED Value is conferred by institutions and the central authority. Qualification is the marker. The state, its frameworks, and its awarding bodies underwrite what counts.	DISTRIBUTED Value is established across employers, markets, professional communities and evidence of demonstrated performance, without a single central authority.	AXIS 2 Capability Formation: How do people build capability? The shared question is how capability is formed, and through which pathways. This concerns the processes, environments, and actors through which people develop knowledge, skills, judgement, and adaptability over time. <table><tr><td> HUMAN-LED Capability is formed primarily through educators, structured programmes, workplace relationships, and human judgement. AI assists the process, but humans retain responsibility for designing learning, interpreting progress, and deciding what the learner needs next. </td><td> AI-LED Capability is formed primarily through AI, on-demand and personalised learning pathways, assembled by the learner. AI designs, delivers, adapts and provides feedback. The human role narrows to the edges. </td></tr></table>	HUMAN-LED Capability is formed primarily through educators, structured programmes, workplace relationships, and human judgement. AI assists the process, but humans retain responsibility for designing learning, interpreting progress, and deciding what the learner needs next.	AI-LED Capability is formed primarily through AI, on-demand and personalised learning pathways, assembled by the learner. AI designs, delivers, adapts and provides feedback. The human role narrows to the edges.
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SCENARIO 1 · CENTRAL VALUE + HUMAN FORMATION

The Trusted System

Everyone can trust what recognised learning represents, but the system struggles to keep pace as work and capability needs change.

Central tension

Trust and coherence vs currency and responsiveness. The system is reliable, but risks becoming slow to recognise what matters next.

SCENARIO 2 · CENTRAL VALUE + AI FORMATION

The AI Skills Network

Recognised learning can be delivered at scale through AI, but human guidance, judgement and accountability become increasingly thin.

Central tension

Scale and consistency vs human judgement and accountability. Learning reaches more people, but the educator's role and the safeguards it provides may erode.

SCENARIO 3 · DISTRIBUTED VALUE + HUMAN FORMATION

The Reputation Economy

Learning stays close to real work and human expertise, but access to the best opportunities depends increasingly on reputation, relationships and networks.

Central tension

Relevance and craft vs access and equity. Learning can be highly responsive, but advantage concentrates among those already connected to trusted networks.

SCENARIO 4 · DISTRIBUTED VALUE + AI FORMATION

The Skills Market

Anyone can assemble learning on demand from an abundant AI-enabled market, but proving which capabilities are valuable and trustworthy becomes harder.

Central tension

Abundance and autonomy vs visibility and trust. Learning is easy to access; credible recognition of what someone can actually do becomes scarce.

Human-led

← HOW DO PEOPLE BUILD CAPABILITY? →

AI-led

Singapore's Training and Adult Education in 2035: Four Future Scenarios

Scenario 1

The Trusted System

Everyone can trust what recognised learning represents, but the system struggles to keep pace as work and capability needs change.

A central national skills authority underwrites what counts as credible capability, while human educators remain central to how it is developed. National standards provide trust, portability and structured support, but the system can struggle to keep pace as jobs and capability needs change more rapidly.

CENTRALISED VALUE HUMAN-LED FORMATION

- CORE WORLDVIEW
- A qualification only carries weight because a central authority has set the standard and a human educator has delivered it. Remove either and the trust collapses.
 - Legitimacy requires someone who can be held responsible; which neither an algorithm nor an anonymous market can offer.
 - The state is responsible for holding the sector coherent. That coherence is what allows a small nation to signal the quality of its workforce to the world.
 - Human judgement cannot be replaced by a metric. The educator's ability to read the room, adapt to the learner and stretch the framework is what makes the national standard worth more than the paper it is printed on.

What Changes

Who decides what gets taught	What good is measured against	What a qualification means
The central national skills authority defines what counts as credible capability. Recognised providers retain freedom over how learning is designed and delivered, and the educator uses that	Success is defined by how precisely a provider delivers the national standard and demonstrates it through audit. An educator who teaches brilliantly and an	The national qualification is legible and trusted precisely because it is consistent. Every holder has been measured against the same bar, delivered through qualified human educators, in recognised institutions.

discretion extensively, contextualising and adapting to what the learner needs. But the boundary of what they teach toward is set centrally, and crossing it formally requires a curriculum review process that moves on its own timeline. AI runs the administrative machinery but never decides what good training looks like. That stays a human, central call.

educator who teaches adequately may produce very similar audit results if both deliver the framework as specified. The difference between them lives in the room and in the learner's experience.

That consistency has real value. But it also means that when the bar is set in the wrong place, or has not moved with the sector, the consistency amplifies the error at scale.

Who Wins, Who Is Exposed

POSITIONED TO WIN

Large, compliance-capable providers

Institutions built to handle audits and the forecast-and-quota cycle thrive. Providers that can demonstrate quality in the language of the system may gain an advantage over those whose quality is harder to codify or audit. (Role of Training Provider and Adult Educator)

Employers with strong HR and workforce-development capability

They can translate national frameworks into workforce plans, release workers for learning and demonstrate outcomes.

The educator, secure but bounded In this future, the adult educator has a real career with recognised pathways, professional standing and institutional support. The work is meaningful and the relationship with learners is where the value sits. The constraint is that the educator's expertise is channelled toward delivering the national standard rather than defining what the standard should be. However, more experienced and senior educators who know how to navigate the TAE system and are able to work within (or

AT RISK

Smaller and fast-moving providers Those who built their reputation tailoring training to a specific employer or trade struggle to fit a one-size curriculum and to absorb the compliance overhead. Anyone teaching a genuinely new skill waits for the curriculum to catch up. (TAE Ecosystem Governance and Coordination)

SMEs and employers with limited bandwidth They may struggle to navigate the system, articulate emerging needs quickly or convert formal training into workplace transformation.

Newer and less experienced educators Without the professional standing or institutional cover to exercise independent judgement, they teach the framework as written. The system produces what the framework specifies, not what the learner needs. (Role of Training Provider and Adult Educator)

Learners who don't fit the standard mould Career switchers, workers in niche or fast-moving trades, and those needing a

around) the bounds of the central framework are the ones who will succeed best.

different pace are first to fall through. The system is built for the average learner, not the specific one. While the human educator can adapt within the room, the curriculum is slower to adapt between review cycles. (Diversity of Learners' Profile and Motivation; Speed and Format of Learning)

What this scenario gets right

- Creates a trusted and portable standard of capability that employers can recognise across providers and industries;
- Provides learners with structured and supported pathways, reducing the burden of navigating training entirely on their own;
- Preserves human judgement and relational support, allowing educators to contextualise learning, respond to individual needs and support application at work;
- Strengthens professional standards and accountability, giving adult educators recognised roles and helping to protect learners and employers from poor-quality provision.

THE FAULT LINE

The Trusted System depends on two things simultaneously holding firm: the state's ability to define quality at the right level, and the educator's ability to deliver it with enough professional judgement to make it real for each learner. When both hold, the system produces something genuinely valuable, a nationally trusted qualification delivered by skilled humans who know how to make it land.

The vulnerability is that these two sources of authority are not always aligned. The state needs consistency and legibility. The educator needs discretion and responsiveness.

In this future, that tension is managed but never resolved. The faster the world changes, the more the educator's judgement is asked to compensate for a framework that cannot keep up, and the more the system depends on discretion it was not designed to accommodate.



The question this scenario leaves us with is

How much responsiveness are we willing to sacrifice for trust?

Early Signals to Watch

Domains	Early Signals
Governance	Expansion of national qualification frameworks into emerging sectors
Regulation	Stronger quality assurance and provider accreditation
Credentials	Continued employer trust in nationally recognised qualifications
AI	AI augments educators rather than replacing them
Adult educators	Increased professionalisation and career pathways
Employers	Greater alignment between corporate learning and national competency standards
Learners	Continued demand for recognised qualifications alongside flexible learning
System	Faster curriculum updates while retaining central oversight

Counter-signals

- Employers increasingly ignore formal qualifications in favour of portfolios or skills tests.
- AI systems gain regulatory approval to independently assess and certify learners.
- Micro-credentials become more trusted than national qualifications.
- Public funding shifts away from accredited providers towards individual learning accounts with minimal oversight.
- Large firms develop proprietary credentials that become more influential than national standards.

How to interpret early signals and counter-signals:

Early signals are developments that would indicate that the underlying logic of this scenario is becoming more prominent. Counter-signals are developments that would weaken, constrain or redirect movement towards that scenario. They are not necessarily the opposite of current practice, nor do they imply that the scenario is undesirable. Some may reflect the persistence or strengthening of existing arrangements.

Vignette: A Day in the Life

Vignette · Rashid, Adult Educator

A Day in the Life of Rashid (2035)

7:45 am

Rashid arrives at the training centre before the first learners. Overnight, the national learning platform has already generated attendance forecasts, highlighted learners who may require additional support, and flagged assessment submissions that need his review.

Administrative work that once occupied hours now takes minutes.

He spends the extra time reviewing the profiles of today's class instead. Today's cohort is unusually diverse: a logistics supervisor displaced by automation, two mid-career switchers, several younger technicians entering advanced manufacturing, and a sixty-year-old returning to formal learning for the first time in decades.

What reassures Rashid is that none of them has had to work out the system alone. Their funding, learning pathway and qualification are already connected. If they complete the programme, employers across Singapore will understand what their qualification means.

9:00 am

Today's nationally approved lesson covers digital supply-chain analytics.

Twenty minutes in, Rashid realises the prescribed case assumes experience that half the class does not have. He closes the case. Instead, he describes an automated warehouse breakdown he encountered six months earlier. The room changes immediately. Questions come. Learners challenge one another. Someone relates the situation to her own workplace.

The learning outcomes have not changed. The route towards them has.

The AI teaching assistant records which examples generated the strongest engagement and suggests adaptations for the afternoon class. Rashid accepts two suggestions and rejects another.

The machine helps. He decides.

11:30 am

Mei Ling, one of Rashid's learners, stays behind after class.

She has completed every assessment successfully. On paper, she is progressing well. But she tells Rashid that she does not understand how any of this applies to the AI-enabled inventory system her company just rolled out, which is nothing like the systems the curriculum describes.

The national framework does not cover the system she is using. It was designed around an earlier generation of technology. Rashid knows this.

He explains the underlying principles as best as he can and tells her the concepts will transfer. He believes this is probably true. He is not certain.

She thanks him and leaves.

Rashid knows that much of his value lies in helping learners make sense of what the curriculum cannot fully anticipate, and finds this part of his work deeply rewarding.

2:00 pm

Then comes the uncomfortable part of the day.

At an employer advisory meeting, three companies demonstrate a new generation of AI-enabled logistics systems. One of the capabilities they now expect from supervisors does not appear anywhere in the current national qualification.

Rashid submits a curriculum-change request. The portal estimates that the next formal review will take four months. One employer laughs: "Four months? We're deploying next month."

Nobody in the meeting argues that national standards are unnecessary. The same employers rely on those standards when recruiting thousands of workers they have never met.

But everyone can see the gap opening.

4:30 pm

Quality assurance reviews begin.

Rashid opens the review dashboard. Most assessments have already been cleared automatically. A handful are waiting for him.

One case catches his attention. The scores are technically consistent, but something about the pattern does not look right. He pulls up the assessment records, reads through the evidence, and decides the case needs a closer look.

The AI has done what it does best: scan thousands of assessments and flag what is unusual. What happens next still depends on Rashid's judgement.

6:00 pm

Before leaving, Rashid approves the final assessment decision for one learner. Tomorrow, that learner's qualification will appear in the national record and will mean the same thing whether she applies to a multinational, an SME or a company across the island.

Rashid is proud of that. Then he adds tomorrow's unofficial case study to his lesson plan: the new warehouse system that technically does not belong in the curriculum yet.

The national standard gives his learners something his judgement alone never could: trust that travels. His judgement gives the standard something the system cannot produce quickly enough: currency.

For now, the two still fit together.

Rashid wonders how much longer experienced educators can keep closing the gap.

The AI Skills Network

Recognised learning can be delivered at scale through AI, but human guidance, judgement and accountability become increasingly thin.

The central national skills authority continues to define and underwrite capability standards, while AI increasingly designs, delivers and assesses learning. This makes recognised learning personalised, continuous and available at national scale, but raises questions about human support, professional judgement and who is accountable when the system gets it wrong.

CENTRALISED VALUE AI-LED FORMATION

CORE WORLDVIEW

- Quality assurance and instruction are separable: the state retains the high-leverage function of certifying capability while AI takes over the costly and uneven work of forming it.
- Legitimacy lives in the standard, not the method of teaching it.
- Machine consistency, underwritten by the state, is fairer than the lottery of which human trainer you happened to get.
- A skills record that every employer can read and every worker can carry is a public good. The machine makes that possible at a scale no human system ever could.

What Changes

Who decides what gets taught

The state sets the framework, defining what competencies matter and what assessed performance looks like. That authority has not moved. What has changed is that the entity executing that framework is no longer a human educator who reads the room and flags when something is not working. The framework is now implemented by AI systems that shape capability and verify it against the specification as

How capability is formed

Learners no longer need a provider, a cohort, or a scheduled programme. AI systems deliver instruction adaptively, at any time and in any location. For the learner who previously could not access formal provision, this is a genuine transformation. The question is not whether the machine can shape capability effectively against the specification it has been given — it is

What a qualification means

The national skills record is trusted precisely because it is machine-verified, comprehensive, and consistent. Employers hire off it with confidence. But the more trusted the ledger, the more consequential it becomes when the ledger is measuring the wrong things. A human educator working inside a slow curriculum could at least see when something was off. The machine certifies what it was asked to certify — accurately

written — at scale, without friction, and without discretion.

whether the specification keeps pace with the work.

and at scale — regardless of whether the ask was right.

Who Wins, Who Is Exposed

POSITIONED TO WIN

Learners previously locked out Shift workers, caregivers, remote workers — those who could never fit a structured programme into their lives now have genuine access.

Large employers with high-volume needs They can integrate the national skills ledger directly into recruitment and workforce planning.

Providers with system integration capability Those that manage AI learning infrastructure and handle exception processing at scale hold the position that course delivery providers once did.

AT RISK

The adult educator The role that remains is narrow: exception handling and appeals. A generation of practitioner knowledge about how people actually learn is being retired without a mechanism to capture it.

Learners who need human support Adaptive systems adjust content. They do not respond to anxiety, or the learner whose barrier is motivational rather than informational.

The system itself, when specification drifts With no human inside the capability formation process, the only signal that the curriculum has become obsolete comes from the labour market — by which point the ledger has certified thousands against the wrong standard.

What this scenario gets right

- Expands access to recognised learning for shift workers, caregivers and others who struggle to attend scheduled programmes;
- Improves consistency in learning and assessment, reducing variability across providers and instructors;
- Keeps skills records current and portable, allowing capability updates to be reflected quickly in employment and workforce systems;
- Enables national-scale reskilling, reaching far more learners than a human-delivered system could support alone.

THE FAULT LINE

The **AI Skills Network** is a closed loop. The state specifies what capability looks like. AI shapes it and verifies it. Both are doing exactly what they were designed to do, and

doing it well. The system does not need a human in the middle because the state and the machine between them cover the full process from specification to certification.

That is also the problem. No actor sits at the boundary between the state's specification and the real world of work. Nobody inside the system notices when what the ledger measures and what employers actually need have quietly diverged. The gap does not announce itself. It accumulates. The machine keeps forming and certifying.

The ledger keeps updating. Everything inside the system looks correct. The signal that something is wrong only arrives from outside, when employers start seeing it in their own workforce, by which point the system has already certified the gap at scale.



The question this scenario leaves us with is

How long before the ledger and the labour market are measuring different things, and who is responsible for noticing?

Early Signals to Watch

Domains	Early Signals
Governance	National framework authority begins publishing real-time competency revision cycles
Regulation	AI assessment systems receive formal regulatory recognition for certification purposes
Credentials	Employer recruitment platforms integrate national skills ledger APIs directly
AI	Adaptive learning systems demonstrate measurable completion gains for previously excluded learner groups
Adult educators	TAE workforce data shows contraction in delivery roles alongside growth in system administration roles
Employers	Large firms begin workforce planning off ledger data rather than qualifications held
Learners	Completion rates rise but learner-reported confidence in applying skills remains flat

System	Framework revision cycles shorten from years to months under AI-assisted curriculum mapping
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Counter-signals

- Employers begin noting mismatches between ledger certifications and on-the-job capability, particularly in fast-moving sectors.
- Regulatory bodies resist granting AI assessment systems full certification authority without human review.
- Policymakers and providers deliberately require meaningful human oversight at key points in AI-led learning, including capability diagnosis, high-stakes assessment, learner support and appeals.
- Learner dropout rates for self-directed AI pathways remain high among lower-confidence and lower-literacy populations.
- Trade unions push back on the removal of human educators from capability formation processes, citing welfare and safeguarding concerns.
- Independent audits find that competency frameworks have not kept pace with actual job requirements in key growth sectors.

Vignette: A Day in the Life

Vignette · Jamal, Shift Worker

A Day in the Life of Jamal, Shift Worker

5:45 am

Jamal's learning system wakes before he does.

A notification tells him that he is ready for the final process-safety simulation. For three weeks, the AI has adjusted examples, language and difficulty around his mistakes. It knows he understands fault isolation well but still hesitates when several alarms occur simultaneously.

He has forty minutes before his shift.

Ten years ago, training meant swapping shifts, travelling to a training centre and sitting through material he already knew. Now the simulation begins where yesterday's learning ended.

At 6:18, he passes.

By the time he leaves home, the result has been verified against the national competency standard and added to his skills record. His children are still asleep.

For Jamal, this is what access looks like.

8:30 am

At the plant, a new control system is being introduced. The workforce platform has already compared the new work requirements with employees' skills records.

By lunchtime, Jamal receives a new six-week module containing only the competencies he lacks.

His colleague, Siti, receives a different one, based on her own learning records.

Two hundred workers are being reskilled simultaneously. Nobody is waiting for a class to fill or hoping that the trainer is good. Everyone is assessed against the same standard, but nobody is required to learn in exactly the same way.

Jamal remembers training rooms where the fastest learners were bored and the slowest stopped asking questions.

He does not miss them.

12:15 pm

Siti is staring at her screen.

She has been stuck on the same diagnostic module for eleven days. The system has tried shorter explanations, simulations, translated explanations and additional practice. Every adaptation generates another variation of the thing she still does not understand.

"What does it say you're doing wrong?" Jamal asks.

Siti shrugs. "Apparently I should know."

The platform shows a support button. She presses it. The system offers another diagnostic.

The system assumes that if one explanation fails, a better-tailored one will eventually work. But Siti's problem is not simply the content. A past workplace mistake has left her second-guessing herself whenever several alarms appear at once.

The AI sees the hesitation and responds with more practice. It cannot see that the real problem may be confidence, not competence.

There is no educator in her pathway to notice the difference.

3:00 pm

Jamal receives an update. Because thousands of learners using the new control-system simulations have begun displaying the same emerging error pattern, the national AI network has identified a capability gap and updated tomorrow's learning sequence nationwide.

The change took days, not months. Jamal is impressed.

Siti looks at the update. "But how do we know the new sequence is right?"

Jamal does not have an answer. The national authority set the framework. The AI applied it. Somewhere in that chain, it was decided the updated module was right for a process safety worker at a petrochemical plant.

Jamal does not know who made the decision. No one asked a process safety worker whether it was right.

6:00 pm

Jamal checks his national skills record before going home.

Two years ago, he thought his shift pattern and family responsibilities would prevent him from ever completing another qualification. Now he is four modules from one.

Across Singapore, hundreds of thousands of workers are learning in the same way: continuously, cheaply and around their lives.

The system has made recognised learning available to people the old model struggled to reach.

Jamal has never had this much access to learning.

However, across the table, Siti closes the module she still cannot pass. Without a trainer in the room, there is no one to see that Siti is stuck.

That is the trade-off. The same system that gives Jamal unprecedented access leaves Siti without the human support needed to move forward. The gain in scale and flexibility is real, but so is the risk that learners whose barriers cannot be diagnosed through performance data alone become increasingly difficult to see.

The Reputation Economy

Learning stays close to real work and human expertise, but access to the best opportunities depends increasingly on reputation, relationships and networks.

Capability is developed through trusted practitioners rather than centrally prescribed programmes, while employers and markets determine what capabilities are valued. Learning becomes highly contextual, responsive and grounded in professional expertise, but reputation travels unevenly and capability may be difficult to recognise beyond the networks in which it was developed.

DISTRIBUTED VALUE HUMAN-LED FORMATION

CORE WORLDVIEW

- Value is earned through demonstrated work and relationships, not conferred by a certificate. A practitioner's reputation is the only qualification that matters, because it is built on whether their learners actually perform.
- What a practitioner forms in a learner is not transferable to a machine. The judgement, the reading of the room, the decision about what someone is ready for next, these require a human who has done the work.
- Capability is a craft transmitted between people, and buyers will pay a premium for a trusted human whose judgement they know.
- The market does not need a regulator to define the quality of learning. When a practitioner's learners perform, word spreads. When they do not, the work dries up. That accountability is faster and more direct than any audit cycle.

What Changes

Who decides what gets taught	How capability is formed	What a qualification means
There is no central curriculum. Each practitioner designs for the employer in front of them, drawing on their own	Capability formation is relational and contextual. The practitioner knows the industry, knows the learner's workplace, and shapes the learning around both. Al	Formal qualifications have not disappeared but they are no longer the primary signal. What matters is whether the practitioner is trusted and whether their learners

expertise. Different employers value different things, and what counts as capable in one context does not automatically transfer to another. AI accelerates the design process, but the decisions about what matters and what counts as good enough remain with the human.

tools extend what a single practitioner can do — allowing them to personalise at a scale that would previously have required a team. But the relationship is the vehicle. The practitioner's ability to read a learner is what the employer is paying for.

perform. Reputation is the credential. Track record is the verification mechanism. An employer who has worked with Faridah three times does not need a certificate to tell them what her learners can do. An employer who has never heard of her has no way to evaluate her at all.

Who Wins, Who Is Exposed

POSITIONED TO WIN

Employers who know what they need and can pay They commission exactly what they need, assessed against their own criteria, delivered by a practitioner who knows their industry.

Experienced practitioners with deep industry knowledge Those who have spent years building expertise in a specific sector can now operate at their full capability without the constraints of a national framework.

Learners in fast-moving or highly specialised sectors Workers in industries where the national curriculum was always eighteen months behind now have access to capability formation that reflects what their sector needs today.

AT RISK

Workers who need to move between employers or sectors What a learner has built in one practitioner's context is not legible outside it. Every move requires rebuilding trust from scratch.

SME employers without budgets or referrals: They cannot pay practitioner rates and have no referral route to the people who could help them, and the funded system no longer offers an alternative that matches their needs.

Workers in sectors without strong practitioner networks In sectors where no practitioner has built a reputation and no employer has the budget to commission bespoke development, the market simply does not show up.

Newer practitioners trying to enter the market The entry barrier is not competence. It is the reputation that can only be built through work that can only be obtained through reputation.

What this scenario gets right

- Makes learning highly responsive to real workplace needs, with practitioners able to design around emerging problems rather than wait for formal curricula to catch up;
- Places professional expertise and judgement at the centre of capability development, particularly for complex, contextual and tacit forms of learning;
- Gives educators greater professional autonomy, allowing experienced practitioners to work at the full extent of their expertise rather than primarily deliver prescribed programmes;
- Creates direct accountability for outcomes, as practitioners build their reputation through whether learners and employers see real performance improvements rather than through compliance with formal requirements.

THE FAULT LINE

In the **Reputation Economy** scenario, capability formation is current, contextual, and genuinely responsive to what employers and learners need. The problem is not with what the system produces but with who can reach it and whether what they gain can travel beyond the networks in which it was developed. Reputation travels through networks, and networks have edges. The practitioner who is fully booked and deeply trusted by three anchor clients is not available to the SME that cannot get a referral, the learner who changes employer and cannot carry what they built, or the newer practitioner who cannot get a first client without a track record she cannot build without a first client.

The system produces excellent outcomes for those already connected to it. It produces no outcomes at all for those who are not. That is not a market failure in the usual sense. The market is working exactly as markets work.

The question is whether a workforce development system that serves the already-connected is sufficient for a society that has always premised its social compact on something broader.



The question this scenario leaves us with is

Can a reputation-led market scale excellence without reproducing exclusion?

Early Signals to Watch

Domains	Early Signals
Governance	National qualification frameworks fail to keep pace with emerging job roles, leaving gaps that employers and industry bodies begin filling

	with their own standards
Funding	Employer-commissioned, non-funded interventions grow faster than accredited open-enrolment programmes
Credentials	Employers place increasing weight on practitioner track records, referrals and demonstrated workplace outcomes over programme accreditation
AI	Practitioners use AI to generate contextualised materials and analyse cohort performance while retaining final judgement on content and assessment
Adult educators	Experienced practitioners establish independent or fractional practices, with word-of-mouth referral as the primary route to new work
Employers	Firms commission capability development directly from practitioners they know or who come recommended, bypassing the funded system when it cannot match their needs
Learners	Access to high-quality development increasingly depends on who a learner knows rather than what programmes are available to them
System	Practitioner communities, peer referral networks and sector-based learning circles grow as the primary infrastructure through which quality is recognised and work is sourced

Counter-signals

- Government reintroduces or strengthens funding incentives that make accredited provision more attractive to employers, slowing the shift to non-funded commissioning.
- A high-profile failure of quality in an unaccredited bespoke programme triggers regulatory tightening of the independent practitioner market.
- Digital platforms emerge that aggregate practitioner reputation signals and learner outcome data, making quality visible to buyers without an existing network connection.
- Larger institutions begin acquiring or partnering with well-regarded independent practitioners, absorbing the reputation economy back into structured provision.
- Employers in regulated industries maintain strong preference for nationally recognised qualifications regardless of broader market trends.

Vignette: A Day in the Life

A Day in the Life of Faridah, Independent Practitioner

7:30 am

Faridah's first client has a problem no course catalogue has a name for.

The supervisors in a precision-engineering plant know how to operate the line. What they cannot do consistently is notice the weak signals that tell them a team is drifting towards a production failure.

Faridah knows the problem immediately. She has spent eleven years working with plants like this.

Before leaving home, she runs the previous cohort's performance data through an AI analysis tool. It finds a pattern she had half-noticed. She changes the morning exercise.

The AI found the pattern.

What it means, and what to do next, is Faridah's judgement.

9:30 am

The session has moved far beyond the original plan.

Faridah introduces a simulated incident drawn from a real plant failure. One supervisor spots the operational problem. Another notices that the real failure began fifteen minutes earlier, when nobody challenged a rushed decision.

Faridah stops the simulation there.

That conversation becomes the lesson.

Afterwards, the operations director tells her that the group has surfaced a problem he has been trying to address for two years. He asks when she can return for a follow up session.

By lunchtime, another plant manager has messaged Faridah after hearing about the session from him.

This is how quality moves in this economy.

12:00 pm

Over lunch, Faridah receives an email from a trade association.

They know of four SMEs with almost exactly the same problem. They have been searching for help for months. One has obtained an introduction to a practitioner Faridah trusts. The other three have not, and the trade association has requested for Faridah's help.

She reads the message twice. She does not have the capacity to take them on. Faridah could recommend someone, but attaching her name to another practitioner's work is not something she does lightly. Her reputation took a decade to build and can be damaged by one bad referral.

3:30 pm

A former learner calls.

He has moved to a new employer whose operations director knows Faridah's work. Before their conversation ends, the director accepts Faridah's assessment of what the learner can do and agrees that he does not need to repeat six months of development.

His capability travels instantly because her reputation does.

An hour later, another former learner calls from a different sector. Her new employer has never heard of Faridah. The same assessment carries almost no weight.

Faridah realises that the difference between the two learners has nothing to do with what either of them knows.

It is where her name has travelled.

7:00 pm

Faridah checks her email before ending her day.

Her three anchor clients are renewing. The waiting list is full. Learners tell her the work changes what they actually do, not merely what they know. She earns more than she ever did with a large provider and has complete freedom to design around the problem in front of her.

On her screen is a message from a talented practitioner she has been mentoring. The younger woman cannot get her first major client because nobody with enough standing has vouched for her.

Faridah could make one introduction. She has six people she could introduce, and she chooses one.

In this Reputation Economy, the work is good. The relationships are strong. Learning is deeply relevant. Quality travels through trust, but trust does not travel equally.

Scenario 4

The Skills Market

*Abundance and autonomy vs visibility and trust.
Learning is easy to access; credible recognition of what
someone can actually do becomes scarce.*

Individuals increasingly build capability directly through AI-enabled, self-directed pathways, while employers judge value through demonstrated performance rather than formal qualifications.

Learning becomes affordable, continuous and less constrained by institutions, but trust fragments and new platform gatekeepers may determine whose capabilities become visible and recognised.

DISTRIBUTED VALUE AI-LED FORMATION

CORE WORLDVIEW

— No central body can know what employers need before employers themselves do. A standard is always a lagging signal. What someone can do today is the only current signal needed.

— What you can demonstrably do is all that matters: who taught you and what certificate you hold are legacy signals.

— Capability and its recognition are only trustworthy if they are continuously verifiable. Not a credential issued once and trusted forever, but one that reflects current performance.

— With AI universally available, preparation becomes a matter of individual ownership rather than institutional access.

What Changes

How people build capability

Nobody now holds the role of deciding what gets taught. Learning is self-assembled rather than delivered. AI puts the means of forming capability in the individual's hands, on demand and at near-zero cost, so a learner no longer needs a provider or an educator standing between them and the skill.

What a qualification means

Demonstrated performance becomes the currency. A portable, machine-verifiable record of what someone has actually done carries more weight than a certificate for what they once studied, and hiring follows the proof.

Where the sector goes

In a world of abundant AI-generated learning, some institutions may disappear. But others may become more important precisely because abundance creates a trust problem: who verifies that what the machine formed is real? Value moves from forming capability to confirming it.

Who Wins, Who Is Exposed

POSITIONED TO WIN

The self-directed learner Anyone with capability, confidence, and access can build and prove skills on their own terms, moving through work without waiting for permission or a place in a programme.

Employers hiring inside trusted ecosystems: Screening is fast, cheap, and largely accurate for firms whose roles are covered by the platforms they trust. It reaches talent the credential system failed to identify.

Verification platforms and services As proof becomes the currency, the platforms and services that authenticate it take the position awarding bodies once held. Value moves from forming capability to confirming it.

AT RISK

The adult educator With capability formed by AI and assembled by the learner, the TAE roles that focus on delivery and facilitation contract sharply. A smaller tier of human specialists survives where trust, judgement, motivation, and complex capability cannot be reliably automated.

Employers at the edge of the trusted ecosystem: Firms seeking capability the recognised platforms do not cover are blind outside their verification ecosystem, and roles remain open while the talent that exists is invisible to them.

Those without the means to take part The same self-direction that frees the capable learner leaves behind the one without the digital confidence, networks, or support to build and prove capability alone — because the institutions that used to carry them are gone.

What this scenario gets right

- Removes unnecessary credential barriers, allowing people to prove what they can do without relying on formal qualifications;
- Creates faster routes into work, particularly for capable individuals with non-traditional learning and career pathways;
- Makes learning affordable and continuously available, allowing people to build capability on demand and at their own pace;
- Rewards current demonstrated performance, rather than relying mainly on qualifications earned earlier in a person's career.

THE FAULT LINE

In the **Skills Market**, the means of building and proving capability sits in the individual's hands. For those with digital confidence, self-direction and access to the informal networks that make the path legible, this is a genuine expansion of who gets to prepare and progress. The problem is not with the system in principle. It is with what the system asks each person to supply for themselves.

The same openness that removes traditional gatekeepers creates new ones. Capability may be built anywhere, but whether it is recognised depends on which platforms can verify it, which signals employers trust, and how visible an individual is across competing ecosystems. A person may be highly capable yet remain overlooked because their evidence sits outside the recognised networks or cannot travel easily between them. Learning is abundant, but trusted visibility is not, and the ability to turn capability into opportunity is unevenly distributed.



The question this scenario leaves us with is

Learning is abundant, but trusted visibility is scarce. Who controls that visibility, and on what terms?

Early Signals to Watch

Domains	Early Signals
Governance	National qualification frameworks lose coverage of fast-growing job categories, with no accredited provision available in emerging technical fields
Funding	Individual learning accounts and self-directed subsidies grow as a share of public spending on adult learning, shifting responsibility for learning choices to individuals
Credentials	A growing number of employers in technology and knowledge-intensive sectors accept portfolio evidence and task-based assessment in place of formal qualifications during hiring
AI	AI platforms become capable of assessing and certifying capability directly from work outputs, without requiring a human assessor or an accredited programme
Adult educators	TAE delivery and facilitation roles contract as AI tools take over content generation and adaptive instruction, with human specialists surviving in narrow high-complexity niches

Employers	Hiring processes shorten and shift towards task-based assessment and live skills records, with formal credential screening reduced to a secondary check or dropped entirely
Learners	Participation rates rise among digitally confident, self-directed learners and fall among those without established networks or the means to build a verifiable record independently
System	The gap widens between learners who can navigate self-directed pathways and those who cannot, with no institutional provision remaining to bridge it

Counter-signals

- A tightening labour market prompts employers to revert to formal credentials as a defensible and lower-cost screening mechanism, reducing appetite for portfolio-based hiring.
- Concerns about AI-generated work samples and fraudulent skills records trigger demand for human-verified or institutionally anchored certification.
- The absence of cross-platform standards creates enough friction in hiring so that industry bodies or government intervene to establish a common verification layer.
- Government reintroduces structured funded provision in response to growing evidence of capability gaps among lower-confidence and lower-literacy learner groups.
- Employers in regulated sectors maintain mandatory qualification requirements regardless of broader market trends, preserving a floor of demand for accredited provision.

Vignette: A Day in the Life

A Day in the Life of Priya, Talent Acquisition Lead

8:30 am

Priya opens the first candidate record.

No degree. No recognised qualification in data engineering. Three years earlier, that would probably have ended the review.

Today the record shows something more useful: verified project outputs, performance in two live technical challenges and a continuously updated skills profile assembled across several AI-learning and work platforms.

The candidate changed careers from retail operations eighteen months ago. He learnt most of what he knows through an AI tutor costing less per month than his old gym membership.

Priya sends him directly to the final task assessment.

At 9:10, he passes.

By 9:15, the system recommends an offer.

The old labour market would barely have seen him.

This one does.

11:00 am

Another candidate completes exactly the same task.

Her performance is slightly better. But her skills record is difficult to verify. Much of her learning happened through a small open-source community whose records do not integrate with the three platforms Priya's firm recognises. The system gives her a low-confidence visibility score.

Priya overrides it and sends her forward.

Most recruiters would not have opened the file.

Priya wonders how many similar candidates never reach a human screen.

12:30 pm

Over lunch, she talks with a colleague about recruitment costs. They have fallen dramatically.

Candidates no longer need the "right" educational history. People move across occupations much faster. Skills acquired last month can appear in a record today rather than waiting for a new qualification. For several hard-to-fill roles, the talent pool has doubled.

The problem is no longer whether people can learn. There is more learning available than anyone can consume.

The problem is deciding which evidence to trust.

2:30 pm

A candidate appeals a rejection.

His record had been highly ranked the previous week. Then one verification platform changed how it weights project provenance. Several of his strongest outputs now count less because they were completed on an ecosystem that the platform regards as weakly verified.

He has not become less capable. His visibility has changed.

Priya asks the platform to explain the new ranking. It provides a technical assurance statement. She reads it twice.

It is not an explanation she could give the candidate.

5:00 pm

The morning candidate accepts the offer.

Eighteen months ago, he was working in a different occupation. No institution admitted him. No educator decided he was ready. No qualification authority approved his pathway. He learnt, built, demonstrated and moved.

Priya thinks that is extraordinary.

Then she looks again at the candidate whose stronger performance almost disappeared behind a weak visibility score.

In this world, learning is no longer the scarce resource.

Neither, necessarily, is talent.

What is scarce is trusted attention. And increasingly, the organisations that decide who gets that attention are not schools, employers or governments.

They are the platforms that make capability visible.

SECTION F

Cross-Scenario Implications: What Matters Across the Futures

The four scenarios present very different futures for how capability is developed, recognised and valued. Yet looking across them also reveals a number of recurring issues. These are not prescriptions for a preferred future. Instead, they represent cross-scenario implications, areas that remain strategically important across multiple plausible futures and therefore warrant attention as the TAE sector prepares for 2035.

1

Build stronger mechanisms for sensing changing capability demand

Across all four futures, the TAE system becomes vulnerable when it loses touch with changes in work. As occupations, technologies and business models evolve more quickly, stronger feedback loops will be needed between employers, workers, adult educators, training providers and system-level institutions to detect emerging capability needs and translate them rapidly into learning provision.

2

Preserve access to meaningful human support

The role of the adult educator changes substantially across the scenarios, but the need for human support does not disappear. Learners will continue to need motivation, interpretation, confidence-building, contextual judgement and help transferring learning into practice. The strategic question may therefore shift from whether humans remain involved to where human involvement adds the greatest value.

3

Make capability evidence portable across systems and contexts

Each future relies on a different currency of trust, from national qualifications and AI-verified skills records to practitioner reputation and demonstrated performance. Across all four, however, workers benefit when evidence of capability can travel across employers, industries and learning systems. Portability and interoperability may therefore become increasingly important as credential and verification systems diversify.

4**Reposition adult educator expertise beyond content delivery**

Routine content production and delivery become increasingly exposed across the futures, particularly as AI capabilities expand. More enduring sources of professional value lie in areas such as coaching, contextualisation, capability diagnosis, assessment judgement, workplace facilitation, learning design and supporting effective human–AI learning. This suggests that the future-readiness of the TAE workforce will depend increasingly on professional depth rather than delivery alone.

5**Strengthen evidence of workplace and capability outcomes**

Across all four futures, a recurring question is whether learning produces capability that matters in practice. As traditional indicators such as participation, completion and certification become less sufficient on their own, greater attention will be needed to workplace application, performance improvement, career mobility and organisational outcomes, regardless of who delivers the learning or how capability is recognised.

6**Anticipate new forms of inequality and exclusion**

The sources of inequality differ across the four futures. In one, learners may struggle because standardised pathways do not fit their needs; in another, because they lack human support; elsewhere, because they lack networks, reputation, digital confidence or visibility on trusted platforms. Future inclusion will therefore require attention not only to affordability and access to training, but also to learners' ability to navigate, sustain and translate learning into recognised opportunity.

Taken together, these implications suggest that future-readiness may depend less on preserving any particular institutional model than on maintaining a set of underlying system capabilities: the ability to sense changing demand, support diverse learners, recognise capability credibly, mobilise professional expertise, demonstrate outcomes and adapt without widening exclusion. The particular configuration of providers, educators, technologies and credentials may change substantially by 2035; these underlying capabilities are likely to remain important across very different futures.

SECTION G

How to Use the Scenarios

As noted at the start of the report, these scenarios are structured thinking tools rather than predictions of what Singapore's TAE sector will look like in 2035. This section explains how stakeholders can use the four future logics to challenge assumptions, stress-test choices and monitor whether emerging developments are shifting the sector towards one or more of these possible configurations.

Each scenario represents a deliberately distinct future logic:

The Trusted System	Prioritises nationally underwritten standards and human-led capability formation
The AI Skills Network	Combines central standards with AI-led learning and verification
The Reputation Economy	Relies on trusted practitioners, employer judgement and relational learning
The Skills Market	Places capability formation and proof increasingly in the hands of individuals, AI systems and private platforms

In practice, Singapore may not move wholly into any one of these futures. Different sectors, occupations and learner groups may exhibit features of several scenarios at the same time. Regulated industries may remain closer to The Trusted System, while technology-intensive fields may move towards The Skills Market. Large employers may develop elements of The AI Skills Network, while specialised professional communities may operate through The Reputation Economy.

The value of the scenarios therefore lies not in choosing which one will occur, but in using all four to test assumptions, expose vulnerabilities and identify choices that remain robust across different futures.

Challenge Current Assumptions

The scenarios can be used to surface assumptions that are often treated as fixed. These may include beliefs that:

- Nationally recognised qualifications will remain the primary signal of capability
- Adult educators will continue to be central to how learning is designed and delivered

- Public funding will continue to flow mainly through accredited programmes and providers
- Employers will continue to rely on qualifications when hiring
- AI will remain a supporting tool rather than a recognised instructor or assessor
- Learners will have the motivation and confidence to navigate increasingly self-directed pathways

Stakeholders could ask:

- Which assumptions underpin our current strategies, policies and business models?
- In which scenarios do those assumptions remain valid?
- What happens if they no longer hold?

The aim is not to decide whether an assumption is right or wrong, but to understand how dependent current plans are on a particular view of the future.

Stress-Test Policies, Strategies and Business Models

Each scenario can be treated as a different operating environment against which current and proposed initiatives are tested.

For every policy, programme or organisational strategy, stakeholders can ask:

- Would it still be relevant in this future?
- Which groups would benefit?
- Which groups might be excluded?
- What new risks would emerge?
- What capabilities would organisations need?
- Which parts of the existing model would become obsolete?
- What would need to be redesigned?

For example, a training provider might examine whether its current model remains viable if:

- Accredited qualifications continue to dominate
- AI delivers most routine instruction
- Employers increasingly commission trusted practitioners directly
- Learners assemble their own learning through AI platforms

Similarly, policymakers might test whether current funding and quality-assurance arrangements remain effective when capability is increasingly formed outside accredited institutions.

Use the Scenarios to Inform Strategic Choices

The scenarios can support decisions at several levels.

Policymakers and system stewards The scenarios can be used to examine: ➤ The future role of public funding ➤ The appropriate balance between central standards and market responsiveness ➤ The regulation of AI-led instruction and assessment ➤ The future of national qualifications and skills records ➤ Safeguards for learners facing exclusion ➤ The professional role of adult educators ➤ The governance of private verification platforms	Training providers Providers can use the scenarios to test: ➤ Whether their business models depend too heavily on funded provision ➤ Which services remain valuable if content and delivery are automated ➤ Whether they have sufficient employer and industry relationships ➤ How they might shift towards system integration, workplace transformation, coaching or trusted verification ➤ Which organisational capabilities are needed across multiple futures
Adult educators Educators can reflect on: ➤ Which parts of their current work are most exposed to automation ➤ What forms of judgement and relational expertise remain distinctive ➤ How their role may shift towards coaching, diagnosis, facilitation and workplace application ➤ How they can make their expertise visible and portable ➤ How they may work effectively with AI while retaining professional responsibility	Employers Employers can examine: ➤ How they will determine which capabilities matter ➤ Which signals they will trust when hiring and promoting ➤ Whether they will rely on national standards, platforms, practitioners or internal academies ➤ How they will support workers who cannot navigate self-directed learning ➤ What responsibilities they may assume if the state or training-provider role diminishes

Researchers and sector intermediaries

The scenarios can guide:

- Design of future research questions
- Identification of emerging indicators
- Comparative studies across industries and learner groups

-
- Evaluation of policies against different future conditions
 - Monitoring of tensions that cut across multiple scenarios
-

For example, a facilitated session could ask participants to work through one or more of the following questions:

Looking across all four future scenarios

- Which scenario feels closest to the direction the sector is currently moving?
- Which scenario is most challenging to our current assumptions?
- Which future would create the greatest opportunity for our organisation?
- Which would expose our greatest weakness?
- Which learner groups benefit or struggle in each future?
- What actions would remain valuable regardless of which future emerges?

Looking within one scenario

- What would have to happen for this future to become plausible?
- Who would actively support this system, and why?
- Who would resist it?
- What new institutions or roles would emerge?
- What would become obsolete?
- What unintended consequences might follow?
- What early signs would tell us that this future is beginning to take shape?

The objective is not to secure agreement on a preferred scenario, but to broaden the range of possibilities considered before decisions are made.

Monitor Early Signals and Counter-Signals

Each scenario includes early signals that suggest its underlying logic may be strengthening, as well as counter-signals that would weaken, constrain or redirect movement towards that scenario. Counter-signals should not be read as simple opposites of current practice or as evidence that a scenario is undesirable; in some cases, they may indicate the persistence or strengthening of existing arrangements.

These should not be read individually as proof that a scenario is unfolding. Their value lies in identifying patterns across multiple domains, including:

- | | |
|-----------------------------|------------------------|
| ➤ Regulation and governance | ➤ Credential use |
| ➤ Public funding | ➤ AI adoption |
| ➤ Employer hiring practices | ➤ Adult educator roles |

- Learner participation
- Platform development
- Curriculum-review cycles
- Workforce outcomes

A practical monitoring process could involve:

1	Selecting a small number of indicators for each scenario
2	Assigning responsibility for tracking them
3	Reviewing them at regular intervals
4	Identifying clusters of reinforcing signals
5	Revisiting strategic assumptions when the balance of evidence shifts

This would allow the scenarios to function as a living foresight framework beyond a one-time report.

Examples of signals and indicators

Signal	Possible Indicator
Employer trust in national qualifications	Percentage of job advertisements requiring or preferring nationally recognised credentials
AI augments rather than replaces educators	Share of AI use cases classified as educator-support versus autonomous instruction or assessment
Stronger central oversight	Growth in accreditation, audit and reporting requirements
Faster curriculum updates	Median time from industry need identification to curriculum refresh
Educator professionalisation	Proportion of active educators holding recognised professional status
Alignment with national standards	Percentage of corporate academy programmes mapped to national competency frameworks

Avoid Treating the Scenarios as Fixed

The four scenarios deliberately emphasise contrasting future logics so that their implications can be examined clearly.

Actual developments are likely to be more mixed. A central skills authority may continue to regulate qualifications while employers increasingly use portfolios. AI may take over routine instruction while human practitioners remain central to complex and relational learning. National systems may coexist with private platforms and reputation-based networks.

The scenarios should therefore be revisited and adapted as new evidence emerges. Their purpose is not to create a permanent map of the future, but to provide a disciplined way of questioning how the TAE sector may evolve and what choices stakeholders face along the way.

The four future scenarios invite a broader strategic question:

What must Singapore preserve, build or redesign today so that the TAE ecosystem remains trusted, responsive and inclusive across very different futures?

About This Report

This document is an output of the TAE3 (Training and Adult Education Landscape Study 3), Singapore's third national study of the TAE sector. It was commissioned by the Singapore Skills and Workforce Development Agency (SWDA) and conducted by the Research Division (RD) of the Institute for Adult Learning (IAL), Singapore University of Social Sciences.

The scenarios presented are plausible futures constructed for strategic dialogue and stress-testing, not forecasts or policy prescriptions. They are intended to be used as thinking tools by stakeholders to examine assumptions, identify exposures, and surface choices, not to predict which future will arrive.

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