

Education and training



Education and skills hold the key to future wellbeing and will be **critical to supporting long-term growth, tackling unemployment, promoting competitiveness and nurturing more inclusive and cohesive societies.**¹



What IWA heard

During consultation on the draft strategy, stakeholders highlighted the need to better plan for future education infrastructure to accommodate growing populations. This has been addressed through inclusion of a recommendation to prepare a program-level business case to support school site acquisition. This chapter also links to relevant Planning and coordination chapter recommendations that support improved planning.

Some stakeholders were concerned with the use of transportable school buildings, particularly where they are becoming permanent assets or delivered without consideration of wider school needs. Relevant recommendations now refer to the retirement of transportable school buildings where they no longer meet contemporary requirements, and the consideration of offsite and modular construction techniques.

The importance of digital connectivity and online delivery of education and training related services as an alternative method to physical collocation at schools was raised. The importance of science, technology, engineering and mathematics (STEM) skills was also highlighted. Opportunities for online delivery, STEM and recent related investments have been further elaborated on in the Strategy. The extension of industry engagement in curriculum development and delivery to all levels of education and training was supported.

The education and training sector is a major contributor to WA's prosperity and growth and is vital in ensuring the community is well skilled.

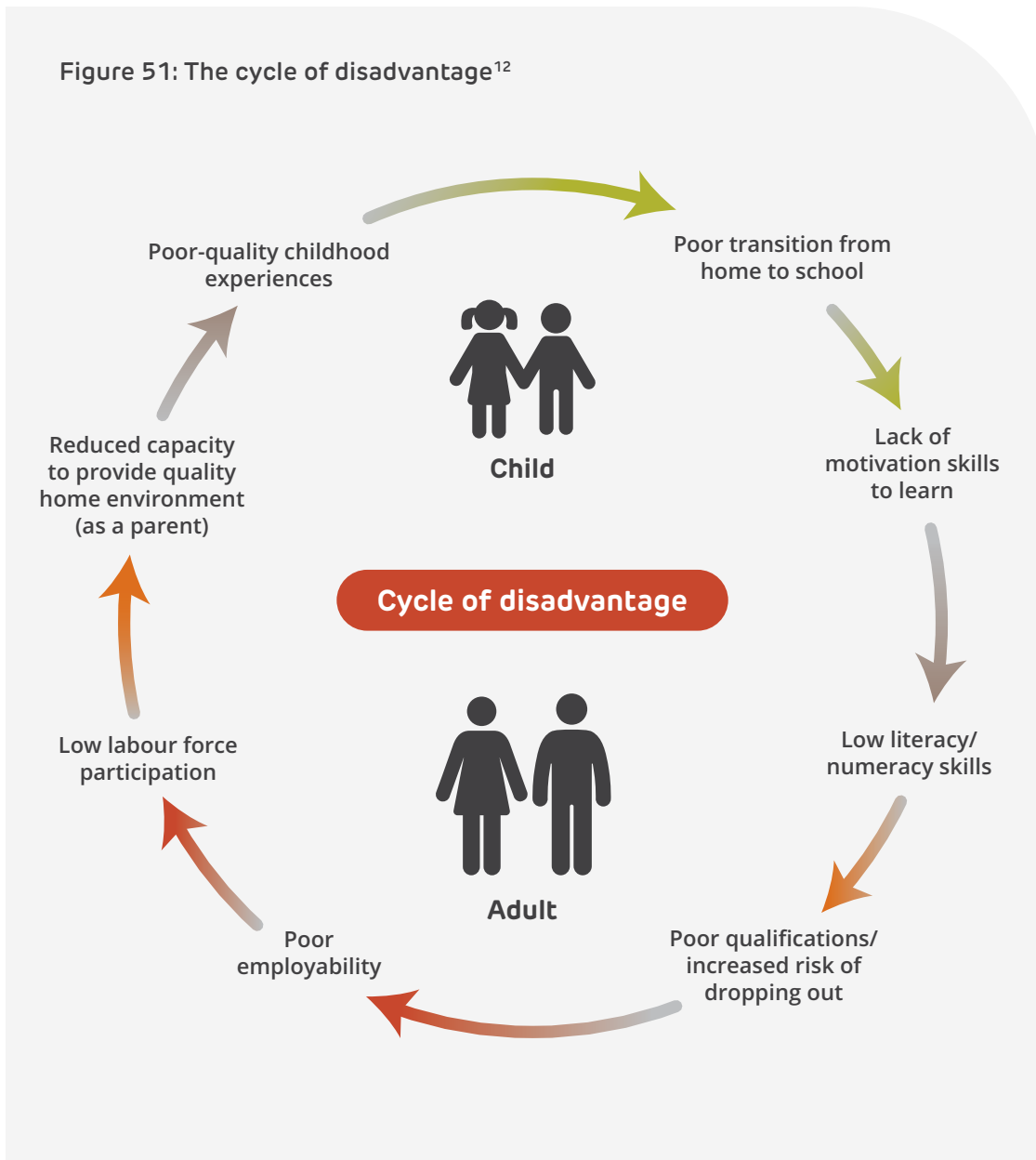
Today's students are facing a rapidly changing future and technological change will continue to be a driving influence. Automation will replace some jobs that rely on routine tasks, and the demand for skills that are difficult to automate will increase.² A growing proportion of jobs will need people who can interact with and coordinate people, as well as solve complex problems, think creatively and use technological tools.³ WA's schools, TAFEs, colleges and universities are working to keep pace with this change by ensuring future workforce capabilities and skills match future need.

To adapt to this future, the sector will increasingly adopt new technologies in the classroom. Technology will see more students learning online, particularly at secondary and higher education levels. Recently, the WA Government invested in significant bandwidth increases to meet the growing demand for students to access online learning materials. The WA Government also continues to provide specialist technology and equipment at vocational education levels. However, due to the rapidly changing nature of this technology, this is becoming increasingly expensive to fund.

Models of teaching and learning (also known as pedagogies) have been evolving with changing needs.⁴ Contemporary teaching methods are progressively being tailored to individual learning styles.⁵ Small collaborative group learning is increasingly being used in classrooms to encourage skills such as creative and critical thinking.⁶ These new methods require schools and classrooms that are designed differently.⁷ Flexible classrooms and breakout spaces support these teaching and learning approaches while providing spaces that match an individual's learning needs, style and pace.⁸

The education and training sector also seeks to address inequities in society by providing educational resources to all students, regardless of their circumstances. Education throughout life can help address entrenched intergenerational disadvantage.⁹ Challenges faced by children early in their lives can have negative consequences later, hindering their capacity to give their own children a better start (Figure 51).¹⁰ The education and training sector is particularly important for Aboriginal people in helping to meet Closing the Gap targets.¹¹

Figure 51: The cycle of disadvantage¹²



A cooperative effort between government agencies responsible for health, welfare, housing and education is particularly beneficial for vulnerable children as they face the greatest risk of falling behind when transitioning to school.¹³ For children from disadvantaged backgrounds, or those who are developmentally vulnerable, high-quality early learning in the year before full-time school is particularly important.¹⁴ The collocation of health, community support services and high-quality early learning can increase access to these services and help intervene in the cycle of disadvantage.¹⁵ There is also an opportunity to provide online delivery of wraparound services at schools as non-build alternatives to physical collocation, subject to the availability of high-speed internet. These may include allied health services, for example, speech and occupational therapy. Collaborative, place-based approaches can also be used in disadvantaged areas to align complex needs with infrastructure solutions. Recommendation 6 in the Aboriginal cultural heritage, wellbeing and enterprise chapter recommends community-led processes and place-based infrastructure outcomes for Aboriginal communities.

Population change is also impacting the education and training sector. Many of Perth's new and existing suburbs are experiencing high rates of population growth, resulting in a number of schools being at capacity or expected to reach capacity soon.¹⁶ Conversely, education and training facilities in some regional and remote locations in WA are facing reduced demand as populations decline. Families and individuals often move to larger cities due to limited quality education and training in these locations. Smaller school sizes, particularly in secondary schools, reduce the breadth of the education curriculum available.¹⁷

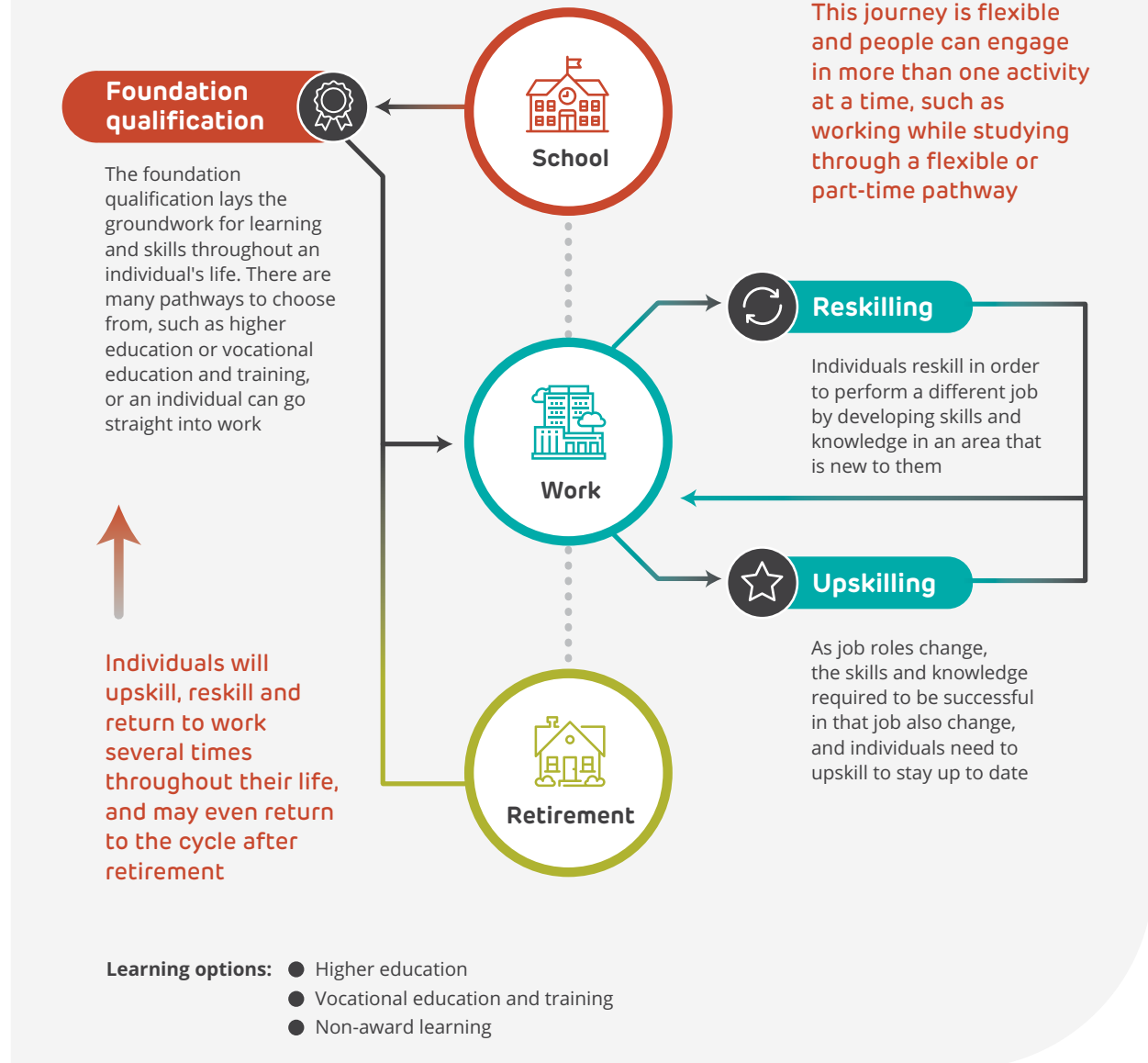
If this trend continues, it will impact regional and remote WA's liveability, and some regional and remote students may be further disadvantaged compared to their city counterparts.¹⁸

In particular, Aboriginal people in regional and remote areas are disproportionately impacted by these challenges. These issues are highlighted in the Regional development chapter, with Recommendation 21 seeking to develop regional services and infrastructure models that apply place-based approaches that allow social service agencies, such as education, to better coordinate and co-locate services.

At the vocational and tertiary education levels, lifelong learning trends are increasing the frequency and demand for training and higher education.¹⁹ To keep pace with technology and other changes, there is an ongoing need to upskill, reskill and build knowledge multiple times throughout our lives (Figure 52).²⁰ To ensure training services are easily accessible by a broader range of the population, vocational training facilities are increasingly being built close to public transport nodes and activity centres.²¹ The challenge of identifying and securing sites for this purpose is addressed by Recommendation 33 in the Planning and coordination chapter.

A thriving higher education and university sector is critical to WA's economic diversification and is synonymous with a prosperous economy and the state's growth.²² WA has an opportunity to serve the emerging consumer class through growth in international education.

Figure 52: The lifelong learning cycle²³





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International education is a major economic contributor to WA, contributing approximately **\$2.1 billion in export income and 12,000 full-time jobs** (1 full-time job for every 5 international students).²⁴

For this to occur, highly visible, renowned universities that can compete in a global higher education marketplace are needed. While each of WA's universities has strengths, their rankings against other Australian jurisdictions that attract a higher proportion of international students suggests that there is room for improvement.

Challenges have been heightened by the impact of the COVID-19 pandemic. Faced with declining enrolments and rapid deployment and delivery of online courses, WA's universities have had to reconsider business and teaching models to ensure they remain viable. With digital-based learning likely to continue and increase, the role of physical assets and campuses will change. A more collaborative approach across WA's universities, including potential consolidation in part or whole across public universities, could reduce unnecessary duplication, increase international rankings, unlock new opportunities for campus infrastructure and bring greater administrative efficiencies.

The science, innovation and technology opportunity for WA

STEM skills are increasingly being recognised as crucial to prepare WA's future workforce for a technologically advanced and automated world.²⁵ Growing scientific, research and technological capability contributes to WA's business productivity, efficiency and competitiveness. More effective collaboration between industry (particularly those involved in STEM) and all levels of education and training can ensure the community benefits and is workforce ready.

Science excellence begins early, and the WA Government has increasingly invested in STEM education. The Department of Jobs, Tourism, Science and Innovation has released the *Future jobs, future skills* strategy to provide a framework for building the state's STEM skills.²⁶ In the recent 2021–22 State Budget, a number of STEM resources and facilities were funded to boost science in schools. There is also an opportunity to leverage and grow STEM culture and skills throughout the state through Scitech. With the importance of diversity in teams, leadership and learning, broadening the focus of STEM to include the arts (also referred to as 'STEAM') is becoming more common. Discipline-specific skills in STEM remain important and are supported by higher-order skills used in STEM, such as communication and problem-solving, as well as creativity through the arts.



Governance

Primary and secondary schools

Under the *School Education Act 1999*, the Department of Education is required to provide educational opportunities to all students throughout WA, regardless of where they live or their circumstances. The Department of Education is responsible for the strategic planning, operation and curriculum of WA Government primary and secondary schools. Strategic documents that provide guidance include:

- *Every student, every classroom, every day: strategic directions for public schools 2020–2024*, which articulates the aspirations, improvement drivers and success measures for the WA public school system²⁷
- *Building on strength: future directions for the Western Australian public school system*, which details the rationale behind the commitments outlined in the strategic directions for public schools.²⁸

These key strategic publications articulate the importance of collaboration with other state agencies, families and the wider community to help support student wellbeing. They also highlight the importance of intervention in the early years and facilitating creativity, collaboration and critical thinking.

To predict future school demand, the Department of Education uses spatial data from Perth and Peel @ 3.5 million, other regional plans, the Urban Land Development Outlook, structure plans and local planning strategies. Population data and development rates are also used in this process. Past trends and other forecasting methods are used to establish a final forecast of student demand for each individual school and assessment is made against the school's current and future capacity.

In conjunction with the Department of Finance, the Department of Education has developed the Secondary School Planning Guide and Primary School Standard Pattern Design Brief. The Secondary School Planning Guide provides scope to develop individual designs for each location, catering for the mix of curriculum delivered across secondary schools.

In the case of primary schools, the Department of Education uses a Standard Pattern Design Brief for new construction and refurbishment. The objectives for developing a standard pattern design are to achieve cost benefits, consistency of facilities across all locations and a rapid turnaround driven by 2-year delivery timelines. It is understood that the Department of Education reviews the Primary School Standard Pattern Design Brief twice a year in consultation with both internal and external stakeholders to ensure that the design reflects the needs for individual schools and contemporary pedagogies.



Vocational education and training

The Department of Training and Workforce Development is responsible for planning, designing and maintaining metropolitan and regional TAFEs and Jobs and Skills centres. Five TAFEs, including North Metropolitan TAFE, South Metropolitan TAFE, North Regional TAFE, Central Regional TAFE and South Regional TAFE, operate and deliver vocational education courses across 60 locations.

Unlike some other jurisdictions, which have transferred much of their vocational training to registered training providers, WA's TAFE system largely remains a provider of choice.



Strategic documents published by the Department of Training and Workforce Development include:

- *Report on the review of skills, training and workforce development*, which sets out a targeted training and skills roadmap for WA's economic recovery²⁹
- *Strategic plan 2019–2023*, which sets out a high-level vision and priorities for the vocational education and training sector.³⁰

The WA State Training Board, established under the *Vocational Education and Training Act 1996*, undertakes strategic activities, tasks and projects to improve the links between specific industry developments and the vocational education and training sector. The *WA State Training Plan 2021–2022* sets out the training needs of the state's industries, including 8 strategic priorities, and provides direction on investment in vocational education and training.

The Department of Finance is responsible for managing both school and TAFE infrastructure project delivery and maintenance activities, with funding through the departments of Education, and Training and Workforce Development.

Higher education and universities

While the Australian Government is responsible for university funding arrangements, the WA Government provides land and contributes funding to support capital investment. International education is identified in Diversify WA as an industry sector that presents a significant growth and diversification opportunity for the state.³¹

Private sector education and training providers

A range of private sector and not-for-profit organisations provide education and training options for individuals across primary, secondary, vocational and higher education levels. The departments of Education, and Training and Workforce Development play a role in regulating, reviewing and funding the private education and training providers.



Recommendations

School infrastructure planning and delivery

Planning

Population, demographic, land development and dwelling data sources are used by the Department of Education to predict the future demand on schools. While the projections for individual schools have a good degree of accuracy, the format that the Department of Education receives this underlying information in results in a manual and resource-intensive demand forecasting process. Data owned by entities should be current, digitised and automated to enable the Department of Education to move from individual school demand forecasts to whole-of-network school planning. Once this data is available in appropriate formats, it can be used in software that models a range of scenarios for the network of school sites and investment options. This would inform where and when to acquire new sites or amend school intake boundaries, and test the impact of non-government school demand and opportunities for shared use. Scenario modelling can also visualise the impact of infrastructure responses on the broader network of schools and calculate projected costs.

New school sites have traditionally been secured through district and local structure planning and subdivision processes. For schools in new suburbs, the planning process remains effective, but some challenges remain with unexpected demographic profiles and the timely availability of school sites. For existing suburbs, where urban infill is occurring, matching school capacity to increasing demand is more difficult. The Department of Education must seek government-owned sites that are surplus to requirements (which are rare at the scale required) or compete on the open market for suitable sites. The funding approval processes for government agencies are lengthy, making it difficult for the Department of Education to purchase privately owned sites that meet its needs in a timely manner.

Schools in inner and middle suburbs experiencing ongoing, increased enrolment demand often have several site constraints. For these schools, design solutions are increasingly required that go beyond the typical low-rise building format. Multistorey or high-rise buildings should be more widely considered and tested with the community. Modular offsite construction techniques should also be considered for the delivery of permanent facilities and learning spaces. Offsite construction methods can result in significant benefits that enable permanent, contemporary classrooms and complementary buildings to be added over time at lower cost and with minimal disruption.³² Modular construction techniques are highlighted in Recommendation 38f within the Infrastructure delivery chapter and can better use limited land supply and address changing educational classroom requirements while also meeting constrained delivery time frames.

Schools are increasingly managing a wide range of complex social issues and can be an important conduit to families accessing other social services and infrastructure, such as health care and childcare, particularly in disadvantaged areas.³³ This infrastructure needs to be planned and designed in a way that integrates with the wider community. Co-locating education facilities with other community support and health services can make them as accessible as possible. Place-based approaches to infrastructure planning should occur to ensure local community characteristics and circumstances inform holistic and integrated decision-making and guide locally tailored infrastructure and service solutions.

A number of recommendations contained in other chapters within the Strategy, as outlined in the following, relate to planning for education infrastructure across the state.

Regional development chapter:

- Recommendation 21 (develop regional social services and infrastructure models) proposes application of a place-based approach to allow social service agencies, such as education, to better coordinate and co-locate services to ensure the service mix is tailored to changing community needs.

Planning and coordination chapter:

- Recommendation 25 (urban consolidation action program) proposes the adjustment of policy settings in infill locations to improve amenity and liveability, including those applying to schools. This should include further review of the WA Planning Commission's draft Operational Policy 2.4 – Planning for school sites to better consider school site planning in infill areas.
- Recommendation 27 (city opportunity plan) proposes a roadmap to better plan for growth and change in the Perth CBD and surrounds. There are currently no public schools operating in the Perth CBD and a limited number in surrounding areas, which are under growth pressure. Infrastructure benchmarking suggests that both primary and secondary schools will be needed in the short to medium term. The city opportunity plan should consider potential locations for education and training facilities to address this demand.

- Recommendation 28 (integrated regional plans) proposes long-term plans for land use, infrastructure and environmental needs for each region. These will consider regional infrastructure needs, including education and training requirements.
- Recommendation 33 (identify and secure strategic sites) relates to securing land for strategic infrastructure in regional locations by establishing a dedicated and recurrent fund for land acquisition. Future education and training facilities will also benefit from centrally coordinated strategic infrastructure site identification, matching state agency needs with government landholdings and enabling better use of the existing land asset base.

Delivery and maintenance

Transportable school buildings are temporary, relocatable buildings that can be used as an effective way to add capacity and cater for fluctuating enrolment demand over time. However, transportable buildings were originally meant to be used for short periods to deal with temporary demand. Permanent built facilities should be used where demand is expected over an extended time. Where possible, older transportable school buildings that no longer meet contemporary teaching and learning methods should be retired. Transportable school buildings should not restrict students' access to open sport and recreation space.

Asset management is an ongoing challenge for any government agency that has a large portfolio of facilities. The Department of Education is implementing improvements to asset management systems and practices through its pilot with the Department of Finance on the Building Asset Management Framework. Many ageing school facilities need upgrades to address functionality. As detailed in the Asset management chapter, Recommendation 42 seeks to incentivise improvements in asset management across the public sector by creating a new budget allocation to undertake fit for purpose asset management planning. This is particularly relevant in the case of ageing school infrastructure.





Recommendation 84

Improve school infrastructure planning and delivery that meets student needs by:

- a. reviewing data formats, sources, accessibility and assumptions to ensure they are timely and functional for planning school demand, greenfield and infill areas
- b. applying software and systems that use new methodologies (such as scenario modelling) to test innovative solutions for government schools in the context of the public and private school assets
- c. preparing a program-level business case for site acquisition in inner and middle suburbs, aligned with school network planning needs
- d. enabling the use of medium-rise to high-rise public vertical schools in appropriate locations, particularly engaging with stakeholders to foster broader community acceptance of this model
- e. using transportable school buildings only as a temporary demand solution and not where enrolment growth is expected to continue
- f. consistent with Recommendation 38f in the Infrastructure delivery chapter, considering offsite and modular construction that enables a contemporary teaching and learning environment
- g. progressively retiring transportable school buildings where they no longer meet contemporary teaching and learning environment requirements
- h. implementing collocation and shared use with childcare, health and community support services where possible, particularly in areas of disadvantage
- i. consistent with Recommendation 42a in the Asset management chapter, allocating budget to implement fit for purpose asset management planning to ensure ageing school assets are functionally fit for purpose.

Future skills, training and funding

Training and skills are important elements for growth and development in a rapidly changing world.³⁴ Fostering knowledge, talent and skills is an important ingredient in WA's prosperity. To ensure WA is resilient to a more technologically complex and automated environment, and sufficiently skilled to respond to industry growth opportunities, vocational training and higher education need to be accessible and evolve.³⁵

Partnerships and collaboration between state government, industry, schools, TAFEs, universities and private training providers are key to driving innovation and training that meets changing workforce needs. Early engagement between these participants is required to plan for this change and understand the associated infrastructure requirements. Greater recognition of the value of early engagement is required to build talent and a cohesive and competitive sector. The growing role of industry in curriculum development and delivery is a strong step in ensuring up-to-date, fit for purpose course content and (in some cases) equipment, which helps increase training and participation rates.

Rapidly changing technologies and innovation are impacting the facility and equipment needs of the vocational education and training sector.³⁶ Equipment and software are becoming increasingly technical and complex, resulting in increased costs. The sector will need to be resourced and funded to respond to different industry and sector requirements with the specialist equipment, software and curriculums it needs to keep pace with change.

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Early and ongoing alignment between future workforce demand, emerging industry needs and required changes to training curriculums is critical to ensure adequate lead time is allocated for changes.³⁷
This is typically between 1 and 4 years.³⁸

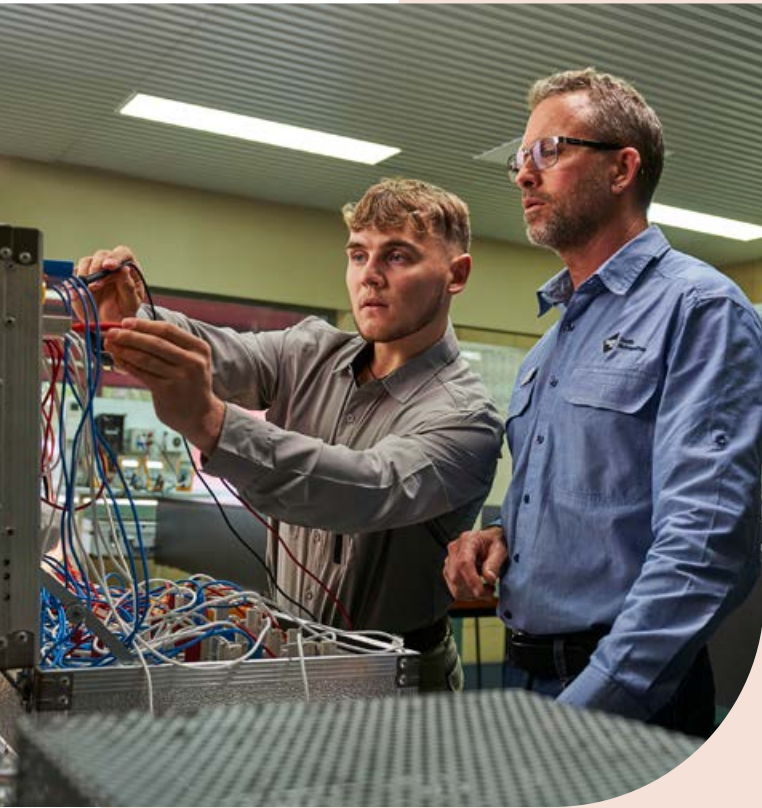
Case study

Defence industry workforce planning

Planning for future skills and qualifications in the defence industry requires consideration of extended lead times for federal defence contracts and the impact of rapid technological change. To plan for a pipeline of skilled workers to meet the changing needs of WA's defence industries, the WA Defence Industry Workforce Office was established as part of the commitment made by the WA Government in its Western Australian Defence and Defence Industries Strategic Plan.³⁹

The WA Defence Industry Workforce Office leads the development and implementation of workforce development plans to support the WA defence industry, which includes close engagement with the defence industry to understand industry needs, developments and future trends. Supported by the departments of Training and Workforce Development, and Jobs, Tourism, Science and Innovation, the office works closely with a range of education and training providers, including relevant universities, to ensure that skills, education and training curriculum, equipment and infrastructure needs are met. The office's work includes formulating trades workforce strategies for the maritime defence industry. This includes boosting financial support for apprenticeship training, upskilling trade workers for defence, implementing an overarching marketing campaign to build greater awareness of defence industry career opportunities and creating specialised career guidance services at the Rockingham Jobs and Skills Centre.⁴⁰ The planning focuses on priority projects that align with the Australian Government's *2020 Force Structure Plan* and WA's defence industry capabilities.⁴¹ Short-term to medium-term workforce requirements include occupations for structural steel and welding, metal fitters and machinists, electricians, engineers and project managers to assist with the delivery of defence sustainment and acquisition programs in WA.

For further information, refer to www.southmetrotafe.wa.edu.au.





Crucially, this investment must respond to place-based training needs with a focus on alignment with a region's major employment industries and competitive advantages. However, it must also be recognised that investment in skills and training infrastructure, equipment and staff in these dispersed regional locations can come at a higher cost. Following an inaugural skills summit in 2021, the WA Government has provided a number of skills-related investments as part of the 2021–22 State Budget, including apprenticeship incentives, increased migration and more-targeted regional skills summits.

The capability and capacity of the private sector is critical for infrastructure project delivery. WA, like other jurisdictions, is experiencing a significant increase in infrastructure activity.⁴² This has recently been driven by increased public infrastructure investment and economic growth in the resources and housing industries. Skills shortages due to migration limitations are driving up costs and impacting project time frames.⁴³

A mechanism that assists private infrastructure sector skills shortages is the provision of incentives for apprenticeships and traineeships in trades and office-based roles. The WA Government's Priority Start Policy aims to develop a sustainable construction workforce by setting benchmarks for the

number of apprentices and trainees employed by companies working on state government infrastructure projects. Although the obligation is on head contractors to comply with the policy, it is often subcontractors that employ most apprentices and trainees.

Some companies are still reluctant to take on apprentices and trainees due to the cyclic infrastructure market and future uncertainty. Group training organisations (GTOs) address this issue by employing apprentices and trainees and placing them with host employers, such as contractors, who are engaged to deliver projects. GTOs carry out many of the trainee management functions required in training contracts, reducing the burden on the host. Benefits include creating more employment opportunities, employment continuity and improving the quality and range of training available to apprentices and trainees.⁴⁴ Under the Western Australian Group Training Program, GTOs are partially funded by the WA Government if they employ apprentices or trainees from under-represented groups, including Aboriginal people, people with a disability and women. However, despite the numerous incentives in place and opportunities for GTOs they currently represent less than 10% of the apprenticeship and trainee market.⁴⁵

Recommendation 85

Better plan for and invest in future skills and training by:

- a. involving the Department of Training and Workforce Development, TAFEs and relevant private training organisations when strategies or plans are developed for new or existing industry sectors, to ensure future curriculum is planned in a timely manner
- b. establishing a dedicated and ongoing funding program for TAFE training equipment and software and facilitating industry co-contributions where appropriate
- c. further encouraging apprenticeships and traineeships on public infrastructure projects by expanding the use of group training organisations, including the use of incentives and promoting the use of group training organisations
- d. updating the Strategic Asset Management Framework's Strategic Asset Plan and Business Case guidelines to require projects and programs with a capital cost of \$100 million or more to consider the availability of, and/or need for, skills and training.