Australian Government
Productivity Commission

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Building a skilled and adaptable workforce

Inquiry report

No. 110 | 10 December 2025

Acknowledgement of Country

The Productivity Commission acknowledges the Traditional Owners of Country throughout Australia and their continuing connection to land, waters and community. We pay our respects to their Cultures, Country and Elders past and present.

About us

The Productivity Commission (PC) is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long-term interest of the Australian community.

The PC's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

For more information, visit the PC's website: www.pc.gov.au

ISSN 1447-1337 (online)
ISSN 1447-1329 (print)
ISBN 978-1-74037-825-3 (online)
ISBN 978-1-74037-824-6 (print)

An appropriate reference for this publication is:
Productivity Commission 2025, *Building a skilled and adaptable workforce*, Inquiry report no. 110, Canberra

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10 December 2025

The Hon Dr Jim Chalmers MP
Treasurer
Parliament House
CANBERRA ACT 2600

Dear Treasurer

In accordance with section 11 of the *Productivity Commission Act 1998*, we have pleasure in submitting to you the PC's final report for the *Building a skilled and adaptable workforce* inquiry.

Yours sincerely

Alex Robson
Deputy Chair

Catherine de Fontenay
Commissioner

Terms of reference

I, Jim Chalmers, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby request that the Productivity Commission ('the Commission') undertake five inquiries to identify priority reforms under each of the five pillars of the Government's productivity growth agenda and formulate actionable recommendations to assist governments to make meaningful and measurable productivity-enhancing reforms.

Background

Productivity growth is the key driver of real wage growth and rising living standards over the long term but has been slowing around the world since the mid-2000s. Australia's productivity growth in the decade to 2020 was the slowest in 60 years.

Several long-standing factors have contributed to the productivity slowdown, including reduced dynamism and competitive pressures, and slower diffusion of technological innovations. Australia also faces new and emerging opportunities and challenges from the changing nature of our economy, including population ageing, rising demand for care and support services, technological and digital transformation, climate change and the net zero transformation, and geopolitical risk and fragmentation. How well we position for and respond to these changes will have a significant impact on our future productivity.

In 2023, the Government set out five pillars for a broad and ambitious productivity growth agenda, and it has already progressed significant reforms under each pillar of this agenda. It is now tasking the Productivity Commission to identify the highest priority reform areas under each of the five pillars which have potential to materially boost Australia's productivity growth going forward, and the measurable impact of these reforms where possible.

Scope of the inquiries

The Commission will conduct five inquiries to identify and report on priority reforms in each of the areas under the Government's five pillar productivity growth agenda. Specifically, these are priority reforms which enhance productivity through:

a. Creating a more dynamic and resilient economy
b. Building a skilled and adaptable workforce
c. Harnessing data and digital technology
d. Delivering quality care more efficiently
e. Investing in cheaper, cleaner energy and the net zero transformation

The Commission should have regard to other current and recent reviews of relevance to Australia's productivity performance including the Treasury Competition Taskforce, the National Competition Review and the House Economics Committee inquiry into promoting economic dynamism, competition and business formation; and the objectives and priorities outlined in the Intergenerational Report, the Employment White Paper, the Economic and Fiscal Strategy, the Measuring What Matters statement, and the Government's legislated emissions reduction targets.

The inquiries should identify prospective areas for reform in the coming years, recognising the findings of recent reviews and taking into account Government reforms and reform directions.

Process

The Commission should engage widely and undertake appropriate public consultation processes, including inviting public submissions. The Commission should engage actively with Commonwealth, and state and territory governments.

The Commission's advice should clearly convey the importance of the reform opportunities identified, including quantitative analysis of the measurable benefits of the priority reforms where possible. This could include the long-run economic impacts on GDP and other measures of economic progress and national prosperity, the benefits accruing to Australian households including distributional impacts where possible, or other outcomes such as improved quality of services or living standards. This analysis should be presented in a way which acknowledges and manages the measurement challenges impacting some important reform areas.

The Commission should publish an interim report for each inquiry in the middle of 2025 that includes preliminary actionable recommendations for productivity-enhancing reforms under the relevant pillar. The final reports for these inquiries should include advice on reform implementation, including implementation feasibility and risks, and be provided to Government within 12 months of receipt of this request.

The Hon Jim Chalmers MP
Treasurer

[Received 13 December 2024]

Disclosure of interests

The *Productivity Commission Act 1998* (Cth) specifies that where Commissioners have or acquire interests, pecuniary or otherwise, that could conflict with the proper performance of their functions they must disclose those interests. The Commissioners working on this report have no interests requiring disclosure.

Acknowledgments

The Commissioners express their appreciation to the staff who worked on the report – Assistant Commissioner Jessica Read, who led the inquiry, and other team members including Rebecca Chin, Danielle Venn, Peter Bon, Elizabeth Penm, Cameron Van-Lane, Rachel Burgess, Jared Claxton, Zac Duretto, James Smith, and Aaron Korczak-Krzeczowski. Our thanks are also extended to Anna Heaney, Paul Gardner, Carmela Chivers, Cristy Alevizos, Matthew Muir, and Yvette Goss for project support.

The Commissioners also extend their appreciation to the staff at NSW Treasury and the Reserve Bank of Australia for their valuable technical guidance and advice on the development of the occupational entry regulation stringency index, and to the Department of Education's Economic Analysis Team for sharing their work on modelling the impact of achieving the Universities Accord targets.

The quantitative analysis in this inquiry is based, in part, on data supplied to the ABS under the *Taxation Administration Act 1953* (Cth), *A New Tax System (Australian Business Number) Act 1999* (Cth), *Australian Border Force Act 2015* (Cth)*, Social Security (Administration) Act 1999* (Cth)*, A New Tax System (Family Assistance) (Administration) Act 1999* (Cth)*, Paid Parental Leave Act 2010* (Cth) and/or the *Student Assistance Act 1973* (Cth). Such data may only be used for the purpose of administering the *Census and Statistics Act 1905* (Cth) or performance of functions of the ABS as set out in section 6 of the *Australian Bureau of Statistics Act 1975* (Cth) (ABS Act). No individual information collected under the Census and Statistics Act is provided back to custodians for administrative or regulatory purposes. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes and is not related to the ability of the data to support the Australian Taxation Office, Australian Business Register, Department of Social Services and/or Department of Home Affairs' core operational requirements.

Legislative requirements to ensure privacy and secrecy of these data have been followed. For access to the Person Level Integrated Data Asset (PLIDA) and/or the Business Longitudinal Analysis Data Environment (BLADE) data under section 16A of the ABS Act or enabled by section 15 of the Census and Statistics (Information Release and Access) Determination 2018, source data are de-identified and so data about specific individuals has not been viewed in conducting this analysis. In accordance with the Census and Statistics Act, results have been treated where necessary to ensure that they are not likely to enable identification of a particular person or organisation.

This report was prepared using the assistance of AI tools for the purposes of general research, summarising material from consultations, refining text and generating alternative text for figures. PC staff reviewed all AI-generated outputs for accuracy and quality.

Contents

Appendices

Executive summary

A skilled and adaptable workforce is a core driver of productivity. In this inquiry, the Productivity Commission has focused on recommendations to enhance the productive capacity of the workforce by providing more Australians with opportunities to learn and work.

Strong foundation skills allow workers to learn new skills, improving their productivity and employability. Yet the share of students leaving school with strong foundation skills is not improving. Teachers are expected to spend substantial time producing or quality checking instructional materials. These challenges are more acute for teachers in remote areas or who teach out of their field. A national focus on quality assurance of instructional materials, and a single national platform hosting a baseline set of curriculum-aligned instructional materials, would ensure that more students receive high-quality teaching.

Well-implemented generative artificial intelligence (GenAI) and other technologies have tremendous potential to support students who are falling behind, and to challenge those who are ahead. Digital literacy, including the skills to use GenAI and other emerging technology, will also be increasingly required as students transition into work. We propose a national approach to advanced educational technology, including GenAI, to reduce costs, aid innovation and support better access to high-quality, safe educational tools.

People of all ages and backgrounds need smoother entry pathways to vocational education and training and universities and better transitions between these two sectors. Better arrangements for credit transfer (including information for students about credit for prior study) could make it easier for workers to access learning and build their skills over time, with less duplication. Better recognition of existing skills – including those gained outside of formal education – would support more Australians to use their skills, including in sectors where demand is growing.

Australia's low rates of work-related training mean too many workers are missing out on building work-relevant skills, including using new technologies. Targeting incentives at the barriers faced by small and medium enterprises – the majority of employers – can support workers in these businesses to engage in lifelong skill development. Piloting a program of training support vouchers, accompanied by advisory services, could help build an evidence base for what works in this area.

Yet improving our education systems will not be enough; we must make the best use of existing skills and not create excessive occupational entry requirements for workers. About one in five workers in Australia are subject to occupational entry regulations (OERs) – requirements to meet minimum conditions such as completing a degree, obtaining a licence or passing an exam. Evidence suggests that OERs worsen worker shortages.

Governments can reduce unduly restrictive regulations while ensuring that consumers and workers are protected. Governments should focus on occupations with excessive entry regulations and replace them with less burdensome alternatives. A logical starting point is occupations which have OERs in some, but not all, jurisdictions. More flexible entry pathways to trades can also be created and qualification requirements for some occupations better aligned with risks, without compromising on the competency of workers.

Recommendations

Equitable access to the best teaching resources to improve school student outcomes

Recommendation 1.1
Establish national frameworks to assess the quality of teaching resources

The Australian Government should task a national education body with developing quality frameworks and assessment processes for both instructional materials and educational technology (edtech) tools.

- The quality framework for instructional materials should be used to assess alignment with evidence-based education standards and teaching practices that support how students learn.
- The quality framework for edtech tools should be an extension of Education Services Australia's Safer Technologies for Schools framework and consider quality, alignment with evidence-based practices and degree of accessibility and age-appropriateness.

The body developing the quality frameworks should also consider developing evidence-based standards for professional development.

Recommendation 1.2
Improve student outcomes by providing equal access to high-quality instructional materials

To improve student outcomes, the Australian Government should support all schools and teachers to access high-quality teaching resources, regardless of their jurisdiction or sector. To achieve this, the Australian Government should:

- procure a baseline set of high-quality, fully sequenced instructional materials that aligns with and covers all components in Foundation to year 10 of the current endorsed version of the Australian Curriculum. The materials should build on existing expertise, comply with the national quality framework and be updated regularly to ensure they remain fit-for-purpose
- for the major curriculum variants, seek co-funding from relevant states to cover the additional cost of adapting those materials
- establish and promote a national platform to provide free access to the procured baseline set of instructional materials and any associated professional development, making these available for all Australian teachers and schools
- assess market- or government-provided instructional materials against the standards in the quality framework and publish a list of resources that meet these standards. This list should be regularly updated.

Recommendation 1.3
Improve student outcomes by providing better access to educational technology

The Australian Government should provide national leadership on educational technology (edtech) in schools, including artificial intelligence, and work to make the best available tools available to all teachers, regardless of their jurisdiction or sector. To achieve this, the Australian Government should:

- create a national edtech marketplace that takes advantage of the combined purchasing power of all schools in the country to provide more affordable access to edtech tools
- ensure the marketplace only supports the provision of edtech tools that meet the standards of the expanded Safer Technologies for Schools framework
- continue funding trials of new edtech and work with state and territory governments to rollout successes nationwide.

Recommendation 1.4
Provide professional development to support teachers to implement best practice

To support teachers to implement new educational technology (edtech) tools and instructional materials, a national education body should be responsible for coordinating the procurement or provision of appropriate and evidence-based professional development. Professional development programs should be designed to be consistent with the principles underlying the quality frameworks for both instructional materials and edtech, as well as any additional standards for professional development created through those processes.

Enabling tertiary education pathways

Recommendation 2.1
Ensure students have credit transfer assessed before the deadline for accepting an offer

The Australian Government should develop effective governance arrangements to ensure students can have credit transfer assessed before the deadline for accepting an offer. This requirement should apply to universities in the first instance, before expanding to other higher education providers. Students should not be precluded from applying for credit transfer at a later point in their studies.

Recommendation 2.2
Increase transparency of credit transfer decisions in higher education

The Australian Government and the higher education sector should work towards making credit transfer decisions more transparent.

As a first step, all universities should have a clear, comprehensive and easily accessible source of information about likely credit outcomes so that prospective students can understand what credit they are likely to receive and compare credit across institutions.

The Australian Tertiary Education Commission, as steward of the tertiary education system, should play a role in driving higher data quality standards and better information about credit transfer decisions across universities to support tertiary harmonisation.

Recommendation 2.3
Improve the quality and integrity of recognition of prior learning to boost skills recognition and productivity

To encourage the growth of high-quality recognition of prior learning (RPL), Jobs and Skills Councils should lead work on developing toolkits to support consistency and streamlining of RPL assessment practices in high-priority and high-volume pathways (where appropriate). In the longer term, improved assessor training and assessment-only approaches could be trialled in high-priority occupations to enable more RPL assessment to be done efficiently, with integrity.

To improve trust in RPL, the Australian Skills Quality Authority should consider measures to further reduce the risk of RPL fraud in vocational education and training; these might include expanding independent validation or requiring registered training organisations to be accredited to provide RPL assessments.

Boosting work-related training to build skills and adaptability

Recommendation 3.1
Improve the recognition of work-related training

The Australian Government should look for ways to improve the recognition of work-related training such as through further development of a National Skills Passport. Microcredentials and other alternative credentials should be included in the passport model. Mechanisms for recognising other types of high-quality work-related training (such as verification and endorsement by Jobs and Skills Councils) should be developed to maximise the value of a National Skills Passport and encourage lifelong learning.

Recommendation 3.2
Pilot co-funded training vouchers and advisory supports to encourage small and medium enterprises to increase work-related training

The Australian Government should run a pilot that provides small and medium enterprises (SMEs) with a co-funded package of:

- vouchers to provide work-related training, with a focus on courses that address skills gaps such as management or digital skills, while allowing other forms of training where appropriate
- advisory support through a consultation to diagnose skills needs, co-design a short training plan, and disseminate materials that include training course recommendations and tools to help SMEs measure the impact of training over time.

The pilot should not subsidise compliance training that is required to meet regulatory or licensing obligations. Support should be provided through employers rather than directly to individuals.

The measures should be rigorously evaluated to determine cost-effectiveness and provide a disciplined basis for expanding, redesigning or ceasing the program. The program design should include data collection to establish a baseline and evaluate the measures. A randomised controlled trial is the preferred option for evaluating the pilot. If a randomised controlled trial is found to be unfeasible, quasi-experimental methods of evaluation should be used.

Fit-for-purpose occupational entry regulations

Recommendation 4.1
Replace excessive occupational entry regulations with less burdensome alternatives

State and territory regulators should replace excessive occupational entry regulations with more efficient alternatives that continue to protect workers and consumers. Regulators should focus particularly on occupational entry regulations that exist in their jurisdiction but not in others. As a start, they should consider reforms for:

- motor vehicle repairers in New South Wales, Western Australia and the Australian Capital Territory
- hairdressers in New South Wales and South Australia
- painters and decorators in New South Wales, Victoria, Queensland, Western Australia and South Australia.

Recommendation 4.2
Better target qualification requirements to risk

Australian, state and territory governments should assess whether current regulated qualification requirements for occupations are proportionate to risks, and identify opportunities to streamline qualification requirements or use more modular or tiered licensing systems to target risk.

To begin, revised qualification requirements should be considered:

- by the Australian Government for registered company auditors by creating a simpler requirement for lower-risk assurance activities
- by the New South Wales Government for air conditioning and refrigeration mechanics by introducing a restricted licence for installing and decommissioning split systems.

Recommendation 4.3
Expand entry pathways into trades

Jobs and Skills Councils, in consultation with the Australian Government Department of Employment and Workplace Relations and state and territory governments, should identify trade-based occupations that are most suitable for alternative entry pathways such as accelerated apprenticeships or expanded non-apprentice pathways and undertake projects to develop and pilot alternative entry pathways in these areas.

Jobs and Skills Councils should use existing collaborative forums to share information and evidence on alternative entry pathways among themselves and across the broader Vocational Education and Training system.

Recommendation 4.4
Incentivise occupational entry regulation reform through National Competition Policy

The Australian Government should use the National Competition Policy process to incentivise reform of occupational entry regulations (OERs) at the state and territory level. The process should seek to:

1. improve the regulatory systems that administer OERs, including by enhancing data collection to establish a stronger evidence base for decision making
2. review OERs and remove any that are not fit for purpose. Any remaining requirements should be commensurate with identified risks
3. look for opportunities to expand entry pathways to regulated occupations.

State and territory treasury departments, or other government authorities responsible for regulatory policy advice, should work with licensing regulators to jointly review OERs in their jurisdictions. These reviews should remove regulations deemed to be excessive and not proportional to risk. They should draw on joint expertise on industry and licensing, as well as principles for best practice regulation, and data to inform the costs and benefits of the regulations.

Licensing regulators and treasury departments should undertake sunset reviews of OERs on a scheduled basis. State and territory governments should also perform independent reviews to identify OERs that are no longer fit for purpose.

About this inquiry

Investing in people brings productivity dividends.

When people, no matter their background, can access education, work and business opportunities that match their abilities and interests, they thrive, and the country thrives. Their new ideas, skills and ongoing engagement make the economy more productive. But we don't all reach our potential through the formal education system, and many of us experience setbacks or changes of circumstances, so opportunities to continue to learn and build skills need to be available throughout a person's life.

Australia has offered more equal access to opportunities than many countries, although structural barriers persist for some. Australia stands in stark contrast to countries with limited economic and social mobility, where many motivated young people cannot get ahead. Those countries miss out on the innovations those young people could have pioneered, the value created by companies they could have founded and the trades they could have mastered and shared. For the most part, Australia has benefited from its rich pool of talent. But there are worrying signs that access to opportunities may be more limited than it used to be, especially for low-skilled workers.

Because more jobs will require formal qualifications in the future, education is more important than ever. But under-achievement in some areas and for some groups continues. We need to make sure our education system and the labour market allow all Australians to reach their potential and contribute their skills and capabilities where they can be best used.

In this inquiry, we identify several important barriers to opportunity and suggest solutions to break them down.

The most important enabler is foundation skills. Strong foundation skills allow students to succeed at school and post-secondary education and to be highly productive at work. They allow workers to continue learning and adapting to new technologies, such as Generative AI (GenAI), throughout their career. Yet there is inequality in school student outcomes, some of which can be mitigated under the right policy settings. Evidence suggests that better access to tools, resources and high-quality teacher training can help teachers to deliver an excellent educational experience and meet the broad range of needs in their classroom. We propose a national approach to sourcing high-quality curriculum-aligned instructional materials and educational technology (including GenAI), along with support for teachers to use these materials effectively.

Another vital piece is an open and accessible approach to formal education, so that whatever the setbacks or changes in goals people might experience, they can continue to engage and achieve in the education system. This is already an important part of Australia's approach, where requirements for undertaking vocational education and training (VET) are relatively open, and no age restrictions apply in either VET or higher education. But Australia's tertiary education system is disjointed. Many who change course of study or return to post-secondary study after time out of education or at work face unnecessary costs and barriers. Credit processes often do not recognise earlier study, which can raise the costs of returning to study and discourage some from re-engaging.

Similarly, our formal education systems do not easily recognise existing skills and capabilities, meaning they can be under-valued in the workplace. Workers who leave formal education early may not be able to access

the career they aspire to, even though they are amply suited to that career. A more structured approach to recognising prior learning that increases access to high-integrity competency-based assessments would open doors for many.

Education and skills can come from outside the formal education system too. In fact, work-related training that does not lead to a formal qualification is the most common form of mid-career learning for Australians. But Australia's work-related training rates have stagnated and are low by international standards, especially for small businesses and their workers. Well-designed financial incentives, coupled with advice on the benefits and availability of training, could help small businesses boost training rates and productivity.

For workers, entering some occupations can be time consuming and costly, even when the jobs they seek are in high demand. While licensing and regulated qualification requirements are important to ensure safety and quality, these entry regulations can be better aligned with risk in some occupations. Replacing excessive regulations with less burdensome alternatives and expanding occupational entry pathways could allow more people to work in jobs for which they have the skills and experience, helping to address workforce shortages without reducing the competency of workers.

Consistent with our terms of reference to 'formulate actionable recommendations to assist governments to make meaningful and measurable productivity enhancing reforms', we have focused on recommendations that are achievable in the short to medium term, with a clear implementation pathway.

Australia needs a skilled and adaptable workforce. Giving workers better access to skills development opportunities and allowing them to adapt to their circumstances will enable them to achieve their potential, and help Australia to achieve its productivity goals.

1. Equitable access to the best teaching resources to improve school student outcomes

Summary

- **School education provides children with the foundation skills they need to undertake further education or training, enter the workforce, and participate fully in society as adults. But delivering equitable, high-quality education in Australia faces several challenges:**
  - Student ability in Australian classrooms varies significantly.
  - Outcomes are stagnating and some students are being left behind.
  - Too many teachers, especially in more remote schools, are having to teach out of their field.
  - Access to the highest-quality teaching resources – such as educational technology (edtech) tools and instructional materials – is not equal across all school systems and sectors.
  - Teachers spend much of their time on activities other than lesson delivery and are working long hours to finish all required tasks.
- **The Productivity Commission has focused on reforms that can be implemented in the short-term to improve access to high-quality school education. The recommendations aim to complement any broader reforms of Australia's school system by diffusing best-practice innovations and pursuing national investments to ensure high-quality resources are available to all teachers.**
  - A national platform hosting a baseline set of quality-assessed, fully sequenced and curriculum-aligned instructional materials would provide teachers and schools with a foundation to adapt to their local context and student learning needs. The platform could also direct teachers to other quality-assessed resources.
  - A national approach to advanced edtech would improve equity of access to quality tools and spread the benefits of advanced edtech to students in all Australian schools.
- **The PC's recommendations seek to improve student school outcomes, and future engagement in education, work and society, by supporting teachers and schools to deliver high-quality education.**
  - Previous studies suggest that providing access to high-quality resources and related teacher professional development can improve student outcomes by exposing students to evidence-backed practices that enhance their learning experiences. Applying these findings to the Australian context suggests that the estimated lift in student outcomes could be equivalent to a 2% increase in NAPLAN scores.
  - As these students enter the labour market, better student outcomes could translate to higher productivity, with wages increasing by 1.6% and a lift in annual real GDP of 0.4% after a 20-year period.

Australia's education challenge

When students realise their full potential through education, national productivity grows. School education provides the foundation skills required to participate in further education or training, enter the workforce, and participate fully in society as adults. At school, students acquire the traditional foundation skills of language, literacy and numeracy. Increasingly, digital skills are considered foundational – inquiry participants noted that students are expected to have high levels of digital literacy and capability to use advanced technology or artificial intelligence (AI) tools as they enter the workplace (Loble, qr. 23; ADIA, sub. 58).

Jobs and Skills Australia's 2025 report on Generative AI (GenAI) recommends that 'foundational digital skills and AI literacy are included in foundation skills initiatives, while acknowledging that GenAI will raise the importance of all foundational skills including literacy and numeracy' (JSA 2025g, p. 12).

> The adaptation of education and training to GenAI requirements – including digital skills and literacy – through schools, VET, higher education and other forms of training will be critical to how the economy responds to the opportunities and challenges of the transition (JSA 2025g, p. 25).

A high-quality education system lifts student achievement across these domains and helps more students reach their potential. And since retraining and upskilling is likely to be a feature of the future job market, adults with strong foundation skills will find it easier to acquire new skills so they are not left behind as the economy changes.

While many factors contribute to a high-quality school system, teachers are its most powerful resource. However, their job is challenging and complex, and they face many constraints within and outside the classroom. Teachers have limited time to design and deliver individually tailored learning programs and ensure the resources they are using to supplement their teaching are of the highest quality. Getting the balance right is difficult, and workload pressures, including the weight of administration, are commonly cited as reasons for teachers leaving the profession early (AITSL 2025; Rasanen et al. 2020; AEU Federal Office, sub. 119; ASPA, sub. 82; C4IE, sub. 143). Most teachers are women (78% in 2023) (AITSL 2025), and high exit rates could mean these women are going on to work below their skill level or exiting the labour force.

Delivering high-quality education means providing students of all backgrounds with the opportunity to reach their potential. Poor educational quality and lack of access should not hold back young people's learning pathways and future career opportunities. The equity challenge is particularly pertinent for Aboriginal and Torres Strait Islander students.[1] Under the target set by the National Agreement on Closing the Gap, 96% of Aboriginal and Torres Strait Islander people between the ages of 20 and 24 would attain a year 12 or equivalent qualification by 2031. Year 12 completion rates have improved from 39.4% in 2001 to 68.1% in 2021, but progress is not on track to meet the 2031 target (PC 2025d).[2]

Using computable general equilibrium modelling, the PC estimates that providing teachers with a defined set of high-quality, sequenced instructional materials (rather than their having to choose and mix options from what is publicly available) and related professional development can potentially lift students' future wages, productivity and GDP.

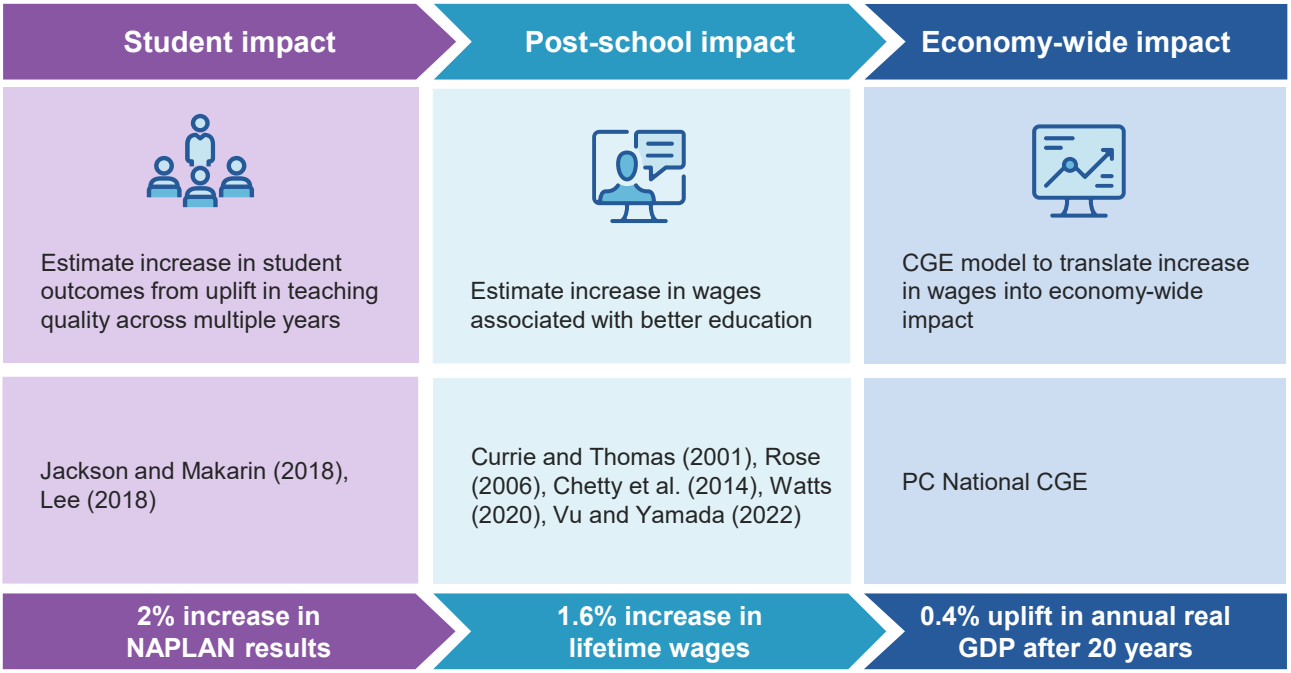
[1] References to 'Aboriginal and Torres Strait Islander' people are taken to include *either or both* Aboriginal or Torres Strait Islander people.

[2] Closing this gap could have flow on effects – completing year 12 has been linked to an increased life expectancy of 5.1 years for males and 3.2 years for females (Welsh et al. 2021). Life expectancy gains are for Australian men and women aged 25 in 2016, comparing people who have completed year 12 and no post-secondary studies with people who have not completed year 12 and no post-secondary studies.

The inputs into the model are based on the work done by Jackson and Makarin (2018) who found that the provision of higher-quality instructional materials and supporting professional development lifts outcomes for students taught by the bottom 60% of teachers.[3] This was combined with work done by Lee (2018), who examined the cumulative impacts on student outcomes of teaching quality from multiple teachers during their time in primary and secondary schooling (figure 1.1).

The estimated increase in outcomes is equivalent to a 2% increase in average NAPLAN scores.[4] As these students enter the labour market, their stronger school outcomes translate to higher productivity, with wages increasing by 1.6% and a lift in annual real GDP of 0.4% after a 20-year period (appendix C, section C.1).

Figure 1.1 – Estimating the cumulative impact of increased teacher effectiveness



Stagnating outcomes, and students falling and staying behind, limit future generations' productivity potential

Across school systems, overall NAPLAN scores for each grade level have grown only modestly since 2008, despite significant financial investment. Between 2008 and 2022, results for year 9 students have not improved, while growth in average scores for students in years 3, 5 and 7 was less than 5%. At the international level, Australia's performance has declined in all three literacy domains in the Programme for International Student Assessment. Between 2003 and 2022, science, reading and mathematics literacy fell respectively by an equivalent of one, one and half and almost two years of schooling (Cassidy 2023; De Bortoli et al. 2023).

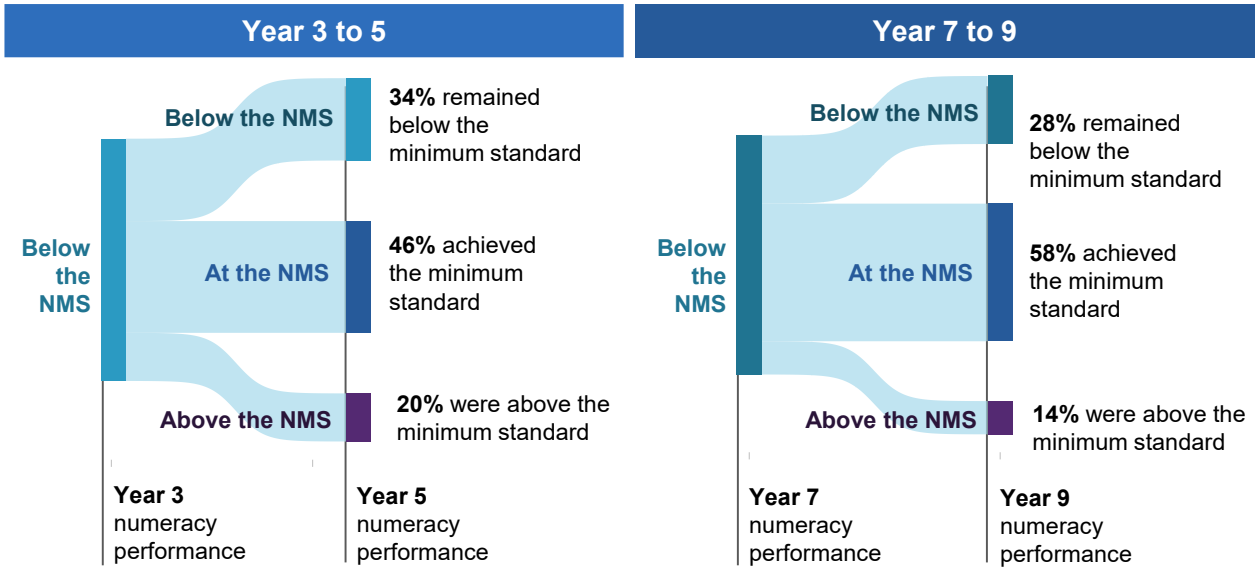
At an individual level, many students are not meeting minimum expected standards for reading, writing and numeracy. When they fall behind, many struggle to catch back up. In 2021, between 5 and 9% of Australian students did not meet NAPLAN minimum standards in reading or numeracy. About a third of the students

[3] The bottom 60% of teachers is identified based on measures of teaching quality.

[4] NAPLAN stands for National Assessment Program – Literacy and Numeracy. The equivalent range of score increases is calculated using standard deviations in the 2025 National NAPLAN results by calculating the average percentage lift of a 0.12 standard deviation increase in NAPLAN scores across all year levels and domains (appendix C, section C.1).

who do not meet minimum numeracy standards in year 3 also do not meet minimum standards in year 5, with similar patterns evident in years 7 and 9 (figure 1.2).

Figure 1.2 – Share of students not meeting minimum NAPLAN standards



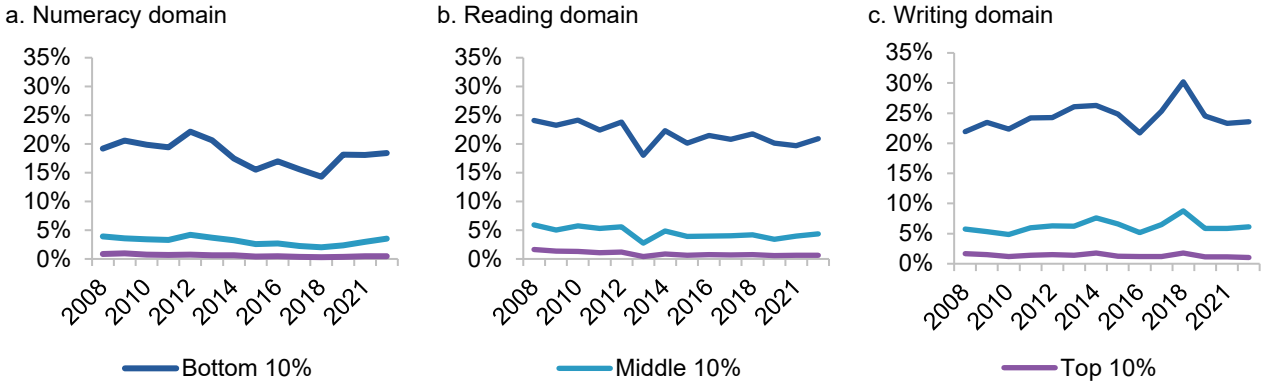
PC estimates from the 2022 Review of the National School Reform Agreement. NMS stands for national minimum standard.

Source: PC (2022a).

Another concern is that differences in outcomes between advantaged and disadvantaged students have not improved over time. Research shows a link between students' level of social and economic advantage and their outcomes (De Bortoli et al. 2023; Owens 2018; Perry et al. 2022; Willms 1986). The average share of students below the national minimum standards for a given NAPLAN domain is significantly higher in schools in the bottom 10% of socio-educational advantage than in more advantaged schools (figure 1.3).

Figure 1.3 – Disadvantages flow on to outcomes

Average share of students below the national minimum standard by socio-educational status band and NAPLAN domain, 2008–2022 (%)



Socio-economic status is defined by the Index of Community Socio-educational Advantage which captures a school's relative level of advantage through a combination of variables relating to a student cohort's background that are known to impact student achievement.

Source: PC analysis of NAPLAN data.

While disadvantaged students have made some improvements in some domains (such as reading) since 2008, other domains had a similar or greater share of students falling below national minimum standards. At the same time, more advantaged schools have consistently seen a considerably smaller share of students below minimum standards across all NAPLAN domains.

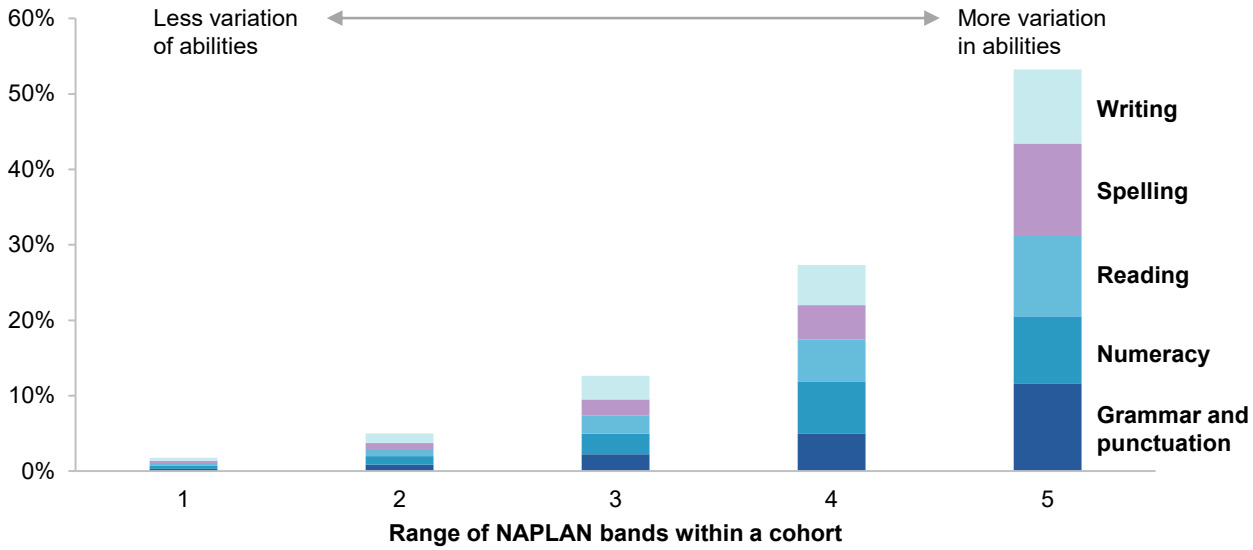
Ultimately, the lack of improvement in student achievement limits growth in future generations' productivity potential.

The range of student abilities in each classroom is wide

The Australian Professional Standards for Teachers require teachers to 'differentiate teaching to meet the specific learning needs of students across the full range of abilities' (AITSL 2022). PC analysis of NAPLAN data identifies a wide range of abilities within most year levels in Australia (figure 1.4).

Figure 1.4 – Spread of abilities within a year level, 2022

Share of all school-year-level-domain groups (%)



Some schools will have multiple classes per year level. A given year level at a school could be represented in different range groups for different NAPLAN domains. For example, a year 3 cohort could have a NAPLAN band range of five in numeracy but a range of four in reading.

Source: PC analysis of NAPLAN data.

Prior to 2023, each student's NAPLAN results were grouped into one of six possible achievement bands for their year level. A student in the maximum band was performing at the highest level while a student in the minimum band is 'below the national minimum standard' for that domain (ACARA 2023).

Analysis of 2022 results across all five NAPLAN domains for each year level within each school (a total of over 90,000 school-year-level-domain groups) shows that more than half (53%) of the groups had the highest possible range of abilities.[5] That is, within a particular year level, groups had at least one student below the minimum standard and one student in the maximum band for a particular domain (such as numeracy). Only 7% of groups had students concentrated within two NAPLAN bands or less.

[5] The majority of schools (86%) have at least one school-year-level-domain group with the highest possible range of abilities.

In other words, most teachers must account for a wide range of abilities when planning lessons. They must prepare for those falling behind, those at or around expectations for a specific grade level, and those who are well ahead. While this diversity of abilities is challenging, the PC notes that many schools find the alternative – streamed classes – impractical from a resourcing perspective, and that streaming may be more likely to create and perpetuate gaps in learning between high and low achieving students (Siemon 2022).[6]

Teachers face many constraints and not all have access to high-quality resources

The time a teacher spends planning is essential for delivering an effective and sequenced lesson that meets the needs of each student in their class (NSW DoE 2025c). In 2023, full-time teachers spent an average of 15 hours a week on planning or preparing for lessons and marking or assessing student work. Even teachers with access to high-quality instructional materials will need to spend time ensuring that the lesson is adapted to their classroom's context, abilities and prior learning (AERO 2025).

While lesson preparation is seen as a core part of a teacher's job, the time taken to complete it can create workload pressures for time-poor teachers. More than 90% of teachers, and especially those who are early in their career or are under-resourced, have said they do not have enough time to effectively prepare for the classroom (Hunter et al. 2022b, p. 13). These teachers are disproportionately employed in remote or very remote schools and in schools with higher proportions of disadvantaged and higher-need student cohorts (AITSL 2025; Regional, Rural and Remote and Unique Settings Directorate 2025).

The resources teachers have at their disposal vary according to the jurisdiction or school sector they work in. While some state and territory education departments have developed curriculum-aligned instructional materials[7] and made them available through centralised platforms, others have not, and some are incomplete (PC 2025a). Traditional publishers and education resource providers produce a diverse range of curriculum-aligned materials (APA, sub. 141), including digital textbooks and other online resources. However, teachers and school leaders often find it difficult to assess the quality of all products on the market (Grattan Institute, sub. 159, p. 6). Compounding this challenge, resources deemed higher quality may be more costly to develop and more expensive, potentially excluding less well-resourced schools or sectors.

Without ready access to quality-assessed materials, teachers can spend a considerable amount of time searching for and creating their own. The typical full-time teacher spends six hours a week sourcing and creating instructional materials, and some teachers spend a lot longer (Hunter et al. 2022a, p. 29). Being forced to search for instructional materials creates unnecessary burden, particularly for inexperienced teachers and those teaching out-of-field. Teachers that source materials that fail to meet the standards set in the Australian Curriculum will place their students at a disadvantage, which can be compounded when materials are not adapted for local contexts or do not provide additional guidance or scaffolding[8] (ACER 2023; AERO 2023).

[6] The maximum band range is less prevalent in schools with 30 or less students though the majority of cohorts in smaller schools have a NAPLAN band range of 4 or 5. Larger schools may have the option to stream their classes to reduce the range within a given class, however evidence recommends inclusive, mixed-ability classes and use of within-class groupings over between-class grouping (Evidence for Learning 2021b, 2021a; Siemon 2022).

[7] Instructional materials refer to structured classroom supports deployed by teachers to deliver the curriculum and contribute to student learning, such as lesson plans, classroom activities and worksheets.

[8] 'Scaffolding' refers to additional supports for struggling students to build their understanding and extensions to encourage deeper learning, meeting the needs of students of diverse abilities within a single class (AERO 2023).

Finally, out-of-field teaching is a persistent problem, caused by teacher shortages and uneven distribution of teachers with specific specialisations, particularly in remote areas with small populations.[9] It can lead to students experiencing ineffective learning environments, increasing teachers' workload as a result (Luft 2020). In 2023, nearly half of secondary school teachers were teaching at least some out-of-field subjects, which includes 7% of teachers who only taught out-of-field subjects. In remote and very remote schools, 65% of secondary school teachers taught out-of-field subjects, compared with 46% of teachers in schools in major cities (AITSL 2025). While some inquiry participants argued this issue should be addressed through other mechanisms (Science and Technology Australia, sub. 202; Nash, sub. 70), access to high-quality resources can provide short-term support to these teachers.

Governments' role in providing teaching resources

State and territory governments are responsible for ensuring the delivery and regulation of schooling to all school-age children in their jurisdiction. They have major financial responsibility for government schools, administered under their legislation. They also determine curricula, register schools, regulate school activities, oversee administration of government schools and provide support services used by all school sectors (PC 2025j).

At the national level, four organisations with different responsibilities and levels of involvement with states and territories seek to promote consistency in the Australian school system (figure 1.5). These agencies operate under the direction of Commonwealth, state and territory education ministers and are jointly funded by all jurisdictions.

At the October 2025 Education Minister's Meeting, education ministers agreed in principle to:

> … bring together and build upon the existing functions of ACARA, AITSL, AERO and ESA into a single Australian Teaching and Learning Commission. The Commission would allow for greater coordination between curriculum, teaching, assessment, research, and reporting – with the whole being greater than the sum of its parts. (DoE 2025e)

A teaching and learning working group will further develop the proposal, including design and governance, and provide advice to Ministers in February 2026. During the consultation period, existing national education bodies will continue to operate as usual and focus on their current work programs (DoE, pers. comm., 18 Nov 2025). The PC's interim report sought feedback from inquiry participants on how these different education bodies would implement the draft recommendations. However, as the working group processes regarding institutional change are still underway at the time of writing, the PC will not comment on who should implement the recommendations outlined in this chapter.

[9] Out-of-field teaching refers to teaching a subject that is not the subject studied, both content and pedagogy, during the teacher's secondary initial teacher education (AITSL 2025).

Figure 1.5 – Education bodies in Australia's national schooling architecture

Responsibilities as at December 2025

Australian Curriculum, Assessment and Reporting Authority (ACARA)

- Develops, reviews and updates the Australian Curriculum.
- Provides resources and support to aid in the implementation of the curriculum, including guidelines for assessment.
- Administers and reports on national student assessments, including NAPLAN.

Australian Education Research Organisation (AERO)

- Undertakes education research and enhances the use of high-quality evidence in Australian education.
- Produces a range of resources including evidence-based lesson planning materials aligned to the Australian Curriculum.
- Supports educators to develop effective teaching and learning plans.
- Promotes resources and training to help teachers integrate evidence-based practices.

Australian Institute for Teaching and School Leadership (AITSL)

- Administers the Australian Professional Standards for Teachers (APST) for teachers and principals, and accreditation standards for initial teacher education (ITE).
- Provides tools and resources for teachers and principals.

Education Services Australia (ESA)

- National not-for-profit company owned by the state, territory and Australian Government education ministers.
- Develops and provides digital teaching materials aligned to the Australian Curriculum, and learning resources through Scootle website and teacher resource hubs.
- Assesses the safety of online educational products and services.

Source: Vines and Clark (2024), Ey and Clark (2021).

Supporting teachers with high-quality instructional materials, edtech and professional development

The terms of reference for this inquiry require the PC to 'formulate actionable recommendations to assist governments to make meaningful and measurable productivity-enhancing reforms' (PC 2024b). The PC notes that a range of reforms and initiatives are underway that will impact school education systems.[10] The recommendations in this chapter are designed to complement these existing efforts to tackle Australia's education challenge.

Providing access to well-structured and sequenced teaching and learning plans is one initiative that can help students to succeed (AERO 2025). Several submissions agreed that access to quality-assessed teaching resources, such as instructional materials or lesson plans, could promote consistency across schools,

[10] Such as reforms outlined in *Building a better and fairer education system* (Clare et al. 2024), the National Teacher Workforce Action Plan (DoE 2022) and Workload Reduction Fund (Federal Financial Relations 2023), amongst others.

support planning and help reduce teacher workload.[11] Some inquiry participants have called for alternative reforms, including initiatives that specifically target reducing teacher workloads.[12]

Access to high-quality materials and edtech needs to be equitable

Teachers using high-quality instructional materials that are structured and sequenced, together with effective teaching practices, can help all students to build their knowledge, particularly those from disadvantaged backgrounds.

Many inquiry participants suggested that teachers should be able to tailor instructional materials to diverse learning needs, including those of students with disability and from culturally and linguistically diverse backgrounds. These participants supported the practice of educators adapting materials to align their content with students' experiences and local context (Nash, sub. 70; IEUA, sub. 86; QCEC, sub. 121).

High-quality materials can improve teacher effectiveness

A growing literature base, drawing on studies in English-speaking countries, sets out the potential benefits of providing teachers with higher quality teaching materials. Some studies focussed on the shift from low- to high-quality textbooks, noting this had stronger effects on student outcomes than did other more popular interventions. Enacting this change was considered a highly cost-effective lever for governments and schools (Learning First 2018, p. 13). Other studies have broadened and found that giving teachers access to a more comprehensive and high-quality set of instructional materials, supported with professional development, can improve student outcomes (Jackson and Makarin 2018).

Access to such materials can improve teacher effectiveness and school outcomes in several ways. First, it exposes individual students to evidence-backed materials, leading to a better understanding of subject content (AERO 2023; Learning First 2018). Second, students across all classes and schools receive more consistent and effective education delivered with appropriate sequencing. Third, teacher workloads are reduced, especially for those in under-resourced schools (Hunter et al. 2022a; Juma 2024). When effective teachers remain in the sector, all students they teach benefit.

Further studies have examined how better instructional materials can be combined with other interventions to boost the effect on student outcomes (Ochre 2025, p. 24). Some studies involving randomised controlled trials (RCTs) have shown a positive impact on student learning outcomes when high-quality materials are combined with professional learning support or professional development (for example, Borman et al. (2007), Borman et al. (2008) and Quint et al. (2015)). Teachers could also benefit from additional resources to support lower and higher-achieving students, and from materials such as worked examples that promote active student engagement in learning (AERO 2023; NSW DoE 2020). In the UK, 73% of teachers using resources from Oak National Academy reported that the materials had a positive impact on their workload in 2024. Teachers also felt the materials provided valuable support for teacher substitution and out-of-field teaching, and helped to minimise learning gaps for students in these situations (ImpactEd Evaluation 2024).

Ultimately, the research provides governments with a level of confidence to focus their efforts on relatively inexpensive interventions (compared with whole-scale education reform) to improve student outcomes and better support teachers. Investing in high-quality materials, and ensuring they are available for all schools and teachers to adopt if they choose, spreads the benefits of these interventions across the education

[11] AERO, sub. 92; Grattan Institute, sub. 159; IEUA, sub. 86; QCEC, sub. 121; Ochre Education, sub. 81.
[12] AEU Federal Office, sub. 119; ALL, sub. 60; ASPA, sub. 82; Kennedy, sub. 49; TTRC, sub. 138.

system. This approach will benefit more students than if individual teachers or schools are left to seek out these materials on their own.

More can be done to provide equitable access to instructional materials

In recent years, governments and non-government providers have undertaken a range of activities to produce curriculum-aligned instructional materials (PC 2025a, p. 15). While these developments are welcome, the current fragmented approach has several pitfalls, mainly relating to the accessibility of materials (including for different subjects), and whether they are fully sequenced and 'scaffolded' for students performing above or below the expected level. The PC also notes that these materials were developed in the absence of a common, agreed quality framework and not all were complete as at August 2025.

- New South Wales and Victoria are releasing lesson plan materials but these are not yet all finalised.
- Queensland has resource banks covering most subjects and learning levels.
- Western Australia has a suite of resources for each learning area and sample instructional materials are available.
- South Australia has prototype materials covering reception to year 10. The Northern Territory has an arrangement with South Australia to access its resources.
- Tasmania and the Australian Capital Territory do not yet provide lesson planning material, but are planning to.
- Given access restrictions, it is unclear how many states provide clearly sequenced and scaffolded material.

Historically, teachers' views on the quality of the government-provided materials have been mixed. On Queensland's Curriculum into the Classroom resources, some teachers found the content and assessment were 'pitched too high', and most teachers and students were struggling to not only get through the work but achieve good results. Others found the standardised materials were too explicit, making it difficult to customise to address diversity in the classroom (Barton, et al (2014); C4IE, sub. 143). The Grattan Institute found perception of poor quality was one reason teachers were reluctant to use government resources more often. Some teachers found that the materials did not provide sufficient detail, were not appropriately sequenced, and did not sufficiently challenge their students (Hunter et al. 2022a, p. 41).

At the same time, teachers have access to a wide range of other materials. Currently, various providers produce resources to support teaching the F–10 Australian curriculum.[13] They include commercial publishers, not-for-profits, and peer-to-peer and social media platforms. Crucially, teachers' time constraints and the absence of quality assessments mean that not all will be able to verify that the materials they are sourcing are appropriately sequenced and of high quality.

New edtech and GenAI tools can help to address the challenge ahead

Recent developments in GenAI have led to new applications for education. Literature examining the impact of edtech and GenAI supports for students and teachers suggest that well deployed tools can assist teachers in the classroom, particularly in three areas.

- **Class preparation:** The relevance of lesson materials to a student's background or level of learning can affect their ability to understand them (Aronson and Laughter 2016). There is potential for a quality GenAI to take existing materials, adapt them for different contexts or learning abilities, or generate new

[13] The F–10 Australian Curriculum sets out the developmental sequence of learning for schooling in Australia from Foundation (first year of school) through to year 10. The Australian Curriculum outlines the essential knowledge, understanding and skills students need to learn, and the quality of learning that is expected of the students as they progress through the first 11 years of schooling (ACARA nd).

materials from scratch. In its consultation, the PC heard that teachers in rural, regional or remote areas could use GenAI tools to quickly adapt city-focussed lesson plans to reflect their local context, or scale the content based on students' abilities. Provided that teachers know how to assess the quality of the output, these tools can reduce the time and compliance burden on them to create lesson plans for every class, covering multiple scenarios they might face.

- **Assessment and feedback:** Understanding a students' progress in their learning journey is vital to pitching teaching material at the right level (Hill and Chin 2018). This is particularly important for early career teachers, who can be less effective than other teachers at identifying struggling students (Kosel et al. 2024). Edtech tools can be used to mark or analyse student work in real time to identify learning gaps or areas of need. They can also lessen the gap between early career and experienced teachers in identifying and assisting students who are falling behind.
- **Student-based tools:** Effectively deployed, high-quality tools can improve results for students, particularly those who are typically disadvantaged and are falling behind (Huang et al. 2016; Thomas et al. 2024). Students use these tools in class and at home. Tools may include adaptive learning applications that quiz students and adjust the difficulty of questions to help fill gaps in knowledge.

A major value of edtech, including but not specifically AI, is its ability to make learning more accessible, offsetting differences in teacher experience, expertise and turnover, and providing all students with access to baseline knowledge and skills (Loble and Stephens 2024). Text-to-speech or speech-to-text can make education more inclusive and engaging by adjusting the delivery of content through something as simple as different font sizes and colours, while also providing more sophisticated functions such as translation tools.

South Australia has been an early adopter of GenAI with the development of EdChat – a purpose-built and fully contained GenAI tool for teachers and students. Insights from the pilot phase showed just over half of student users were using EdChat for more than three subjects, and some students were using it for learning during school term breaks (DoE SA 2024). An analysis of the prompts that students were providing to EdChat also 'demonstrated active student learning engagement and movement from surface to deep levels' (DoE SA 2024).

Supporting access to these tools will enable students to receive more effective, consistent education, leading them to better understand subject content (AERO 2023; Learning First 2018). About a quarter of Australian students require disability adjustments and 31% speak English as an additional language (ACARA 2024, 2025a). If well implemented, edtech could particularly benefit these students. Improving classroom access to high quality edtech tools, including GenAI, can also assist students to develop necessary foundational digital literacy skills.

However, many inquiry participants were concerned about equity of access, and especially the digital divide between advantaged and disadvantaged schools, including those in regional and remote communities (NACCHO, sub. 37; AEU Federal Office, sub. 119). These views reflect current statistics – in 2023 the share of people in very remote, remote, and outer regional Australia that were digitally excluded (either through a lack of access, affordability, or digital ability) was 41%, 33% and 36% respectively compared with the national average of 26% (JSA 2025g). In addition, around 19% of young people (about 1.2 million) lack access to a laptop or desktop at home. Of these, 600,000 have no access to a device, even at school (Telstra Foundation 2024).

Define what constitutes 'high-quality' teacher supports

In the current educational landscape, the selection and use of instructional materials and technology are constrained in important ways. School leaders face information barriers when considering the efficacy of off-the-shelf edtech tools, particularly if the primary advocate for the tool's benefit is the market provider. In the absence of teachers and principals (the 'consumer') having all the necessary information to decide on a tool's efficacy, market providers do not always face efficient incentives.

Individual teachers looking for instructional materials can face an abundance of choice. Although access to a wide range of content is beneficial, time and other constraints can make it costly to systematically discern high- and low-quality material. This reduces teachers' capacity to select the best material for their students, and the Grattan Institute has found conflicting advice and mixed views on what constitutes high-quality, and on the quality of classroom materials being used (Hunter et al. 2022a).

At present, no national standard or definition of what constitutes 'high-quality' exists. Several submissions supported the idea of a robust, independent, and transparent quality framework to assess instructional materials.[14] Access to quality-assessed materials can reduce variability and provide a more consistent standard of lesson content, both within schools and across the education system (Ashbee 2021; AERO, sub. 92). Several other countries have adopted quality frameworks and assessment processes for instructional materials and lesson plans (box 1.1).

Box 1.1 – Quality frameworks and assessment processes have been adopted internationally

Various education systems have implemented rigorous quality assessment processes to enable educators to select high-quality teaching materials. In most, schools are encouraged – not required – to use the quality-assessed resources in their classroom teaching. These lists of vetted products safeguard quality and provide national consistency in the content being taught, reducing learning disparities among students in different schools.

Singapore's Ministry of Education (MOE) is responsible for syllabus design and review, designing assessments to support desired learning outcomes, and providing support and specialist advice to publishers on curriculum, teaching and materials. The MOE determines curriculum alignment and approves textbooks. It works closely with Master Teachers (through the Academy of Singapore Teachers) to review and evaluate teaching materials, and it conducts trials in schools to assess classroom suitability. MOE's assessment rubric is not published but the Ministry does publish its curriculum philosophy and desired outcomes of education. Books that have passed MOE review have a 'stamp of approval' and they are included on the MOE-maintained Approved Textbook List, which is updated annually.

EdReports is an independent, non-profit organisation that provides reviews of K–12 instructional materials for schools in the US. EdReports uses a rubric-based review process that defines quality using a three-gateway structure (alignment and coherence; rigor and practices; and usability), plus evidence guides and criteria aligned with standards. The review tools are published for transparency and public scrutiny. Review outcomes are also published as reports on their website, and include scores, narrative evidence, strengths/weaknesses and recommendations.

Other countries, including Japan and South Korea, also have national quality assessment models accompanied with a certified list of textbooks.

Sources: Edreports (2025); Elementary and Secondary Education Act (Korea) (2009); Ministry of Education, Culture, Sports Science and Technology (Japan) (2025); Roberts-Hull et al. (2021); Singapore MoE (2025).

[14] AERO, sub. 92; QCEC, sub. 121; CIS, sub. 74; Grattan Institute sub. 159.

Implement a national quality framework for instructional materials

The Australian Government should implement a national quality framework and assessment process for instructional materials, including lesson plans. The framework's standards should be underpinned by evidence of best practice, including how to effectively support student learning and build knowledge and skills over time. Evidence-based standards for professional development should also be considered.

A national quality framework would serve several purposes. It would provide a basis for the procurement of a baseline set of instructional materials to be made available to all teachers (recommendation 1.2 – discussed later). It would signal to teachers, principals and providers what high-quality looks like and enable decision makers to make more informed decisions about which instructional materials (for example, lesson plans, textbooks and other supporting materials) best suit their needs. Finally, it would provide a basis for the assessment of a product's quality by using clear and transparent criteria.

Several commentators made suggestions for what should constitute 'quality' for instructional materials in Australia. To provide a knowledge-rich curriculum, AERO suggests supporting teachers with instructional materials that 'identify the specific knowledge that students should be taught, including facts, concepts and procedures, and take a cumulative approach where knowledge in each year builds on the knowledge acquired in earlier years' (AERO 2024, p. 19). Carter (2024) recommends that quality evaluation should be systematic and comprehensive, focused on evidence-based criteria and peer review to ensure alignment with educational standards and outcomes.

Beyond curriculum and evidence-based research, the national quality framework should also include criteria for materials to be culturally safe, consistent with guides such as the Australian Institute of Aboriginal and Torres Strait Islander Studies guide to evaluating and selecting education resources (AIATSIS 2022). Some advocates also suggest the framework should include criteria for materials to be gender-responsive[15] (WAVE, sub. 109).

The standards in the framework should cover the design and delivery of learning resources and help teachers to effectively implement the evidence-based practices recommended by AERO (2023). Key components of the framework should ensure that materials:

- are structured to follow a sequence, and include learning activities that gradually build students' knowledge and skills
- are provided for all subjects, with content aligned with curriculum requirements and achievement standards covering the whole year
- can be edited and adapted to local contexts to support the autonomy and expertise of schools and teachers
- provide scaffolding to struggling students to build their understanding and extensions to encourage deeper learning
- include integrated formative assessments aligned with lesson plans to enable ongoing monitoring of student learning progress.

Inform teachers and elevate the quality of the instructional materials market

The national quality framework for instructional materials can serve as a light-touch, quasi-regulatory benchmark that establishes clear standards and expectations, including for materials designed by states and territories. The framework can also guide the market on the characteristics of high-quality instructional materials. It would reduce search time and costs for teachers and principals and boost teacher autonomy in

[15] Gender-responsive materials identify and address the needs of different genders to promote equal outcomes. For example, this could include textbooks that represent men and women in a similar way to each other and use gender-neutral terminology like principal, chairperson and salesperson (UNICEF 2021).

the classroom by allowing teachers more time to tailor lesson plans to student needs. While teachers and principals would remain free to choose materials that had not met quality standards, over time the framework would be expected to elevate the quality of all available materials.

While curriculum-aligned materials are abundant, they have not been independently certified against quality criteria. Instead, their perceived quality is likely influenced by market factors, reputation and word-of-mouth recommendations. Providers' concerns about their reputation and the pursuit of future profit streams can in theory create powerful incentives to provide high-quality goods, even where quality is not observable prior to purchase (Klein and Leffler 1981). However, evidence provided to this inquiry suggests that teachers spend an inordinately large amount of time and resources trying to assess product quality before adopting materials to their own circumstances.

The introduction of a quality signal can create competition and raise the average quality of products, while also reducing the number of suppliers (Elfenbein et al. 2015; Hui et al. 2023; Jin and Leslie 2003). This is borne out by international evidence: more than 40 publishers in the US have adjusted their products to align with new US standards (EdReports 2024). The proposed reforms may produce similar outcomes in Australia, with market adjustments ultimately benefiting teachers and students through higher quality products.

For national consistency, the Australian Government, not states or territories, should take responsibility for assessing instructional materials against the quality framework. As with international models (box 1.1), providers would have the option to submit their materials for assessment against the quality framework and materials that meet these standards would be assessed as 'high-quality'. To ensure integrity and public confidence in the process, the quality assessment should be operationally independent of government decision makers. While the existing national education bodies may be best placed at first to hold the assessment function, over time responsibility may end up with the proposed Australian Teaching and Learning Commission or an alternative independent body. To ensure a degree of operational independence, consideration should be given to establishing the proposed Commission as a separate entity under its own legislation with operational autonomy and decision-making authority.

Extend the Safer Technology for Schools framework to include quality

The Australian Government should also create a quality framework for edtech to assess products and reduce information barriers. The framework should consider whether a given edtech tool is backed by pedagogical evidence that supports student outcomes, is accessible to the diverse range of students and teachers, and is age-appropriate when the tool is student-facing. It should examine these vital questions to spare schools and teachers from having to use valuable time and resources to do this work themselves.

The groundwork for this type of framework is already in place with Safer Technologies for Schools (ST4S), produced by ESA. The ST4S is a standardised approach to evaluating edtech tools against a nationally consistent security and privacy control framework. Security and privacy are vital aspects of edtech tools, but they do not give teachers and school leaders the information they need to know whether a tool will help them to lift results or reduce workload burdens. ESA (sub. 75, p. 2) has proposed to 'extend the ST4S approach with a responsible AI edtech standard (covering human and social wellbeing, transparency, fairness and accountability) and an education quality standard (covering both design and impact, developed by AERO to be implemented by ESA)'.

Extending the ST4S to assess an edtech tool's effectiveness, accessibility, and age-appropriateness would give teachers and school leaders the information they need and save time and resources right across the system. Rather than creating a separate framework, extending the existing one gives edtech providers the information they need to develop tools that meet the needs of Australian teachers and students all in one place. In developing the extended framework, ESA's proposal should be taken into consideration.

Recommendation 1.1
Establish national frameworks to assess the quality of teaching resources

The Australian Government should task a national education body with developing quality frameworks and assessment processes for both instructional materials and educational technology (edtech) tools.

- The quality framework for instructional materials should be used to assess alignment with evidence-based education standards and teaching practices that support how students learn.
- The quality framework for edtech tools should be an extension of Education Services Australia's Safer Technologies for Schools framework and consider quality, alignment with evidence-based practices and degree of accessibility and age-appropriateness.

The body developing the quality frameworks should also consider developing evidence-based standards for professional development.

A national approach to high-quality teaching resources

For the most part, state and territory governments face similar schooling challenges. While there has been much progress to address these challenges collaboratively, a stronger national approach would better support access to high quality education for all Australian students – not just those in the best resourced sectors or jurisdictions. To improve student outcomes, all educators should have access to high-quality, evidence-based instructional materials, edtech tools and professional development.

Procure a baseline set of high-quality instructional materials, available to all

To pursue equitable access to high-quality materials, the Australian Government should invest in developing a baseline set of instructional materials that are freely available to all teachers. The materials should be fully sequenced, align with all components of F–10 in the current endorsed version of the Australian Curriculum (plus major variants) and comply with the proposed national quality framework (recommendation 1.1).

The PC heard that developing materials aligned with multiple curricula all at once would be more efficient than producing materials for the Australian curriculum and other variants separately. For materials aligned with major curriculum variants, a co-funding model with the relevant state government should be considered. This approach would enable these state governments to obtain high-quality materials that meet their needs at lower cost than if they retrospectively updated the baseline set of materials to their local curriculum.

Importantly, use of this set of materials should not be mandatory. Many inquiry participants identified the importance of maintaining teacher autonomy as fundamental to the profession.[16] But the provision of a baseline set of materials would mean that all teachers had a high-quality starting point for lesson planning.

The Australian Government should procure this set of instructional materials from a suitably qualified expert provider, rather than develop them 'in-house'. This work requires in-depth, specialised curriculum design expertise, including in relation to content, pedagogy and curriculum consistency (Huizinga et al. 2019). This approach has been adopted in other countries, including Singapore and the UK (Oak National Academy nd; Roberts-Hull et al. 2021). Given the current depth of the education resource market, procuring expertise in

[16] ACTU, sub. 209; AEU Federal Office, sub. 119; APA, sub. 141; ASPA, sub. 82; IEUA, sub. 86.

the market could enable the provision of these materials at lower cost and at higher quality than if done in-house, in addition to avoiding competitive neutrality concerns.[17]

Further, the Australian Government may be able to procure a set of materials that are already in development. Consideration should be given to building on or extending an existing product if this can be done in a way that still delivers structured and sequenced materials, in line with the quality framework. Ideally, the baseline set of instructional materials should remain relevant and fit for purpose. Changes in pedagogical theory or reviews of curricula would require the materials to be updated over time.

Having a complete bank of high-quality materials for the Australian context would also provide an AI tool, when it is developed, with the knowledge base to generate quality outputs for teachers (Dando-Laing 2023; UK Gov 2025). A GenAI tool needs information to train on so that it can generate new materials and adapt existing ones. The alternative – a tool trained on all materials available worldwide – could generate instructional materials that are not culturally and contextually appropriate, and not aligned with the local curriculum (and planned sequence of learning).

Finally, while the PC's recommendations focus on the F–10 Australian Curriculum, the idea of more coordinated support at senior year levels (year 11 and 12) also has merit. The senior secondary Australian Curriculum content and achievement standards are adapted and integrated by states and territories into their own senior secondary certificate systems. This has led to notable variation in the content, structure, grading and assessment of year 11–12 subjects across jurisdictions (O'Connor et al. 2024). Senior secondary teachers – including early career, temporary, out-of-field or in small or remote schools – would also benefit from access to high-quality teaching resources that align and cover all components of their state or territory's senior secondary curricula.

Promote high-quality instructional materials through an online platform

The Australian Government should also invest in and promote a single online platform that would provide all teachers with free access to the baseline instructional materials and any associated professional development support. User registration could assist in evaluating the initiative, providing data on user characteristics. The platform should publish a list of certified, high-quality resources to inform teachers' decisions about the materials they use to teach.

Many inquiry participants supported a free online platform for teachers that provides easy access to high-quality instructional materials and professional development. Some stressed that the platform needed resources that helped teachers to implement differentiated, equitable and inclusive classroom practices.[18] The provision of instructional materials through a centralised online platform exists in Singapore, South Korea, New Zealand, Ireland, Wales, and the United Kingdom, among other places.

Finding the right host for the materials is important. Since 2009, ESA has managed Scootle, a national, free platform that provides teachers with access to over 16,000 curriculum resources. Scootle aggregates materials from multiple sources, including online content repositories and resource hubs. But inquiry participants suggested that these materials may not always be up-to-date or reflect the latest evidence-based practices recommended by AERO, and are unevenly aligned with state syllabuses (APA,

[17] Competitive neutrality requires that government business activities should not enjoy net competitive advantages over private sector competitors by virtue of public ownership (Australian Government 1996, p. 4). The PC's recommendations do not intend that the Australian Government be a 'provider' of materials, rather for efficiency reasons it is procuring a product from the market that meets defined criteria and making this available. All providers could compete for this work.

[18] BSL, sub. 90; ESA, sub. 75; IEUA, sub. 86; QCEC, sub. 121; WwWA and AMWA, sub. 142; Ochre Education, sub. 81; ACARA, sub. 186.

sub. 141, p. 3). ESA has proposed to the Australian Education Senior Officials Committee that the Scootle service be refreshed to more flexibly address jurisdictional, sectoral and national policy priorities and technological limitations in the current platform (ESA, sub. 25).

Should it be decided to refresh Scootle, the PC acknowledges that any new platform should allow teachers to clearly differentiate between the procured instructional materials, the list of quality-assessed materials, and existing Scootle materials. The platform should also be evaluated regularly to ensure it meets its objectives. This could occur in parallel with the evaluation of the baseline instructional materials.

Recommendation 1.2
Improve student outcomes by providing equal access to high-quality instructional materials

To improve student outcomes, the Australian Government should support all schools and teachers to access high-quality teaching resources, regardless of their jurisdiction or sector. To achieve this, the Australian Government should:

- procure a baseline set of high-quality, fully sequenced instructional materials that aligns with and covers all components in Foundation to year 10 of the current endorsed version of the Australian Curriculum. The materials should build on existing expertise, comply with the national quality framework and be updated regularly to ensure they remain fit-for-purpose
- for the major curriculum variants, seek co-funding from relevant states to cover the additional cost of adapting those materials
- establish and promote a national platform to provide free access to the procured baseline set of instructional materials and any associated professional development, making these available for all Australian teachers and schools
- assess market- or government-provided instructional materials against the standards in the quality framework and publish a list of resources that meet these standards. This list should be regularly updated.

Leverage combined purchasing power to improve access to high-quality edtech

The Australian Government should create a national edtech tools marketplace for schools. In managing the market, it could negotiate with edtech providers, aiming to secure the best price for the maximum number of users across all sectors. Individual states and territories, and school sectors, would retain decision making authority over whether to purchase, and responsibility for payment. This marketplace would provide schools with better access to the same set of quality edtech tools at a lower price than if they negotiated individually – addressing some of the equity concerns that impact disadvantaged schools (IEUA, sub. 86; Loble and Hawcroft 2022; OECD 2023b).

The marketplace could provide a central point of connection between edtech providers and all Australian schools, including non-government schools. The New South Wales online learning tools marketplace, an example of this model, allows the state government to capitalise on the combined purchasing power of all government schools in the state, providing access to tools at a cheaper price than a school could obtain if it negotiated with a provider one-to-one (NSW DoE 2025a). A national marketplace should have an even stronger purchasing power advantage.

Only edtech tools that meet the standards set out in the expanded ST4S framework (including the proposed new quality criteria) should have access to the national marketplace. School leaders and teachers would thereby have confidence that the tools they are using are backed by evidence, secure and safe. Having their

products in the national marketplace would give edtech tool providers greater incentives to create tools that meet the needs of all Australian schools and students.

A national marketplace also has the potential to reduce duplication when spreading innovations. EduChat (New South Wales) and EdChat (South Australia) were both developed with Microsoft as a modified version of their GenAI CoPilot. Both states found enough benefit in their pilots to quickly spread the tool to all teachers in their government schools. EduChat and EdChat were developed specifically for government schools in their respective states (NSW DoE 2025b; SA DoE 2025). Other jurisdictions – or school sector governing bodies – that wanted to replicate their success and adopt a similar tool would likely have to negotiate and procure their own.

The national marketplace could capitalise on these successes and spread innovations faster. Instead of each jurisdiction or sector procuring its own tool, the national marketplace would allow for the creation of nationally available tools, learning from the experiences of early adopters and diffusing gains faster and wider than previously possible. To be able to be utilised by all jurisdictions, the design of the marketplace and processes for procurement would need to reflect varying procurement rules across states and territories.

Advanced edtech tools such as GenAI have the potential to bring great benefits to students and teachers but can also come with risks when not used safely and securely (box 1.2). By purchasing from an approved national marketplace, schools will better keep up with the pace of technological development while maintaining confidence that the tools they are using are both pedagogically sound and mitigate the risks that uncontrolled and unaccounted use can bring.

Continuous development and investment in edtech are needed

A one-off investment in edtech will not achieve the desired equity in access or keep pace with ongoing changes in technology. Ongoing funding from jurisdictions, sectors and independent schools is likely to be required to ensure that tools in the national marketplace (and any associated learning and development materials – discussed later) are regularly updated to keep them relevant and aligned with the latest evidence-based research.

Beyond updating what is available, on-field testing of edtech will be vital as technology develops. Under its Workload Reduction Fund, the Australian Government funds states and territories and non-government sectors to pilot approaches to reduce teacher workloads and maximise the value of teachers' time. The fund has been used to assist in the development and expansion of instructional materials and edtech tools such as EduChat. The fund should continue to support trials of new edtech and diffusion of innovation across Australia. It would also represent the Australian Government’s co-funding contribution to edtech tools. Where the fund successfully supports a jurisdiction to develop an effective edtech tool, the state and territory government receiving the funds should work with other jurisdictions in rolling out the tool nationwide. Depending on demand for new investment and desired scope (for example the inclusion of student-facing tools), the fund may need to be expanded.

Students in more disadvantaged schools and rural and remote areas may struggle to access affordable digital technologies and internet at home or in school, limiting or blocking their engagement with edtech (Loble and Stephens 2024). Many inquiry participants raised concerns about existing barriers to access for schools in remote and regional areas (IEUA, sub. 86; NACCHO, sub. 189). These challenges may be more acute for some groups, such as Aboriginal and Torres Strait Islander students, who are disproportionately attending rural and remote schools (PC 2022a). The Australian Government should monitor how access to tools in the national marketplace may differ for regional and remote communities and consider other ways to support their inclusion.

Recommendation 1.3
Improve student outcomes by providing better access to educational technology

The Australian Government should provide national leadership on educational technology (edtech) in schools, including artificial intelligence, and work to make the best available tools available to all teachers, regardless of their jurisdiction or sector. To achieve this, the Australian Government should:

- create a national edtech marketplace that takes advantage of the combined purchasing power of all schools in the country to provide more affordable access to edtech tools
- ensure the marketplace only supports the provision of edtech tools that meet the standards of the expanded Safer Technologies for Schools framework
- continue funding trials of new edtech and work with state and territory governments to rollout successes nationwide.

New resources require professional development support

Many inquiry participants identified a critical need for professional development support to enable teachers to use both high-quality instructional materials and advanced edtech tools.[19] It was strongly felt that such support can empower teachers to learn and adopt new strategies and techniques and best use the new resources, enhancing their autonomy.

Pair high-quality materials with professional development support

Procurement of instructional materials (recommendation 1.2) should come with high-quality, evidence-based professional development to support teachers in using them. Teachers should have the confidence, skills and willingness to implement new lesson materials effectively, including adapting the material to suit their students' learning needs and local context. The supports should be available in a range of formats, such as workshops, coaching, and practice demonstrations, including videos. School leaders should encourage teachers to access professional development opportunities and facilitate the application of what they learn, particularly during transitions and as part of ongoing practice.

Various studies have found a positive impact on student learning outcomes when the provision of high-quality instructional materials is paired with associated teacher professional development (Learning First 2018; Ochre 2025; Taylor et al. 2015). Inquiry participants also consistently emphasised that high-quality professional development is essential for teachers to effectively use instructional materials and deliver differentiated, evidence-based teaching. It was suggested that professional development should focus on building teachers' adaptive expertise, subject knowledge, and pedagogical skills, enabling them to tailor resources to diverse student needs, including cultural appropriateness.

Support teachers to implement new technologies like GenAI tools

Teachers that are capable and confident in their use of edtech, including GenAI, will also better support their students to build foundation skills in digital literacy, and their future engagement with and use of these tools once in the workforce. Programs should be designed to help teachers safely get the most out of the tools

[19] AAS, sub. 213; ACARA, sub. 186; AEU Federal Office, sub. 119; ASPA, sub. 82; CNS, sub. 140; Grattan Institute, sub. 159; Lodge, sub. 78; Ochre Education, sub. 81; QCEC, sub. 121; SARRAH, sub. 164; TTRC, sub. 138; WAVE, sub. 109.

they use and empower them to know when to adopt alternative approaches. Collaborating with teachers and providing them with learning and development time may break down barriers to adoption.

Supports could be made for each individual tool, where appropriate, or via broader programs to upskill teachers and boost their confidence in using GenAI in the classroom. Broader training should be incorporated into pre-teacher education to minimise the need for new in-service teachers to learn how to use the tools they can access on entering the workforce.

Recommendation 1.4
Provide professional development to support teachers to implement best practice

To support teachers to implement new educational technology (edtech) tools and instructional materials, a national education body should be responsible for coordinating the procurement or provision of appropriate and evidence-based professional development. Professional development programs should be designed to be consistent with the principles underlying the quality frameworks for both instructional materials and edtech, as well as any additional standards for professional development created through those processes.

Implementation considerations

A staged approach

The Australian Government should implement the recommendations across three phases (figure 1.6).

- **Phase 1 – Develop frameworks to guide the market:** Collaborate with state and territory governments, non-government school sectors and the national education bodies to develop and refine quality frameworks for instructional materials and edtech.
- **Phase 2 – Pursue equitable access for all:** Procure a baseline set of high-quality instructional materials, promote these through a national platform, and establish a national marketplace for edtech tools. Developing associated professional development is also critical to the success of these initiatives.
- **Phase 3 – Assess, monitor and experiment:** Provide quality assessments of materials, support experimentation and evaluate outcomes.

Figure 1.6 – Proposed implementation pathway

The combined cost for edtech tools will depend on the number and type of products procured for the national marketplace. New South Wales expenditure shows that the development and rollout of EduChat has cost $5 million (Parliament NSW 2025). The Queensland Department of Education spent $13 million on software in the 2023-24 financial year – though not all software purchased was edtech (QLD DoE 2025). For the baseline set of instructional materials, total costs could be in line with previous budget allocations, in the order of $35 million to $74 million, depending on scope (PC 2025a, pp. 16–17). Ongoing funding will be needed to support updates of materials, procurement of new edtech as required, and continued teacher professional development.

A combination of measures is needed to assess impact

To support and grow the evidence base of what works, the Australian Government should consider how best to measure the impact of these reforms. If teachers and students are not satisfied with new materials and edtech tools, any measurable gains to student outcomes are unlikely be realised. Some outcomes can be measured through student achievement results, while others will need to be evaluated based on feedback and experiences from users.

The Australian Government should evaluate the impact of the procured instructional materials after a period and assess whether a major update or procurement is needed. The evaluation should occur no later than five years after implementation, with a combination of measures used to monitor outcomes. As part of the evaluation, consideration should also be given to the quality and diversity of products in the education resource market and whether the Australian Government should gradually reduce its role. It should do so only if there are sufficient market- or state-government produced materials that meet the quality standard and provide equitable access to all teachers.

Possible information sources include:

- **annual student assessments (via NAPLAN)**. A change in NAPLAN results would be expected to be observed and to correlate with the full implementation of the new instructional materials. Results should be examined to identify any potential causal relationship between the initiative and improved results.
- **teacher surveys, such as those included in the Australian Teacher Workforce Data.** These reforms are expected to reduce teachers' non-teaching workload, including time spent on lesson planning and preparation.
- **reporting under the Better Fairer Schools Agreement**, which identifies several objectives for the Australian education system and measures of student outcomes. For example, the 'equity and excellence' objective seeks to ensure that schools and education systems are equipped to provide all students with effective, evidence-based teaching, equitable learning opportunities, and support for maximum learning (DoE 2025a). This objective identifies several relevant measures that could help evaluate the success of these reforms, including for students from priority cohorts.

A final note – risks to GenAI use in schools

Artificial intelligence is not a 'set and forget' technology. While its potential educational benefits are significant, potential risks associated with AI in its current state – and GenAI in particular – need to be considered (box 1.2).

Some of these risks may be accounted for in existing legislation, but a gap analysis is required to identify whether further regulation is needed (PC 2025g). The *Australian Framework for Generative Artificial Intelligence in Schools* – which has been agreed by all states and territories to use and develop AI in accordance with – seeks to guide the responsible and ethical use of GenAI.

The risks that GenAI poses should be balanced against potential benefits. Procuring a GenAI tool within the national marketplace can increase the degree of control that educators and governments have over its use. If GenAI is banned in schools, teachers and students are may instead use a public GenAI tool on their own devices, exposing themselves to risks beyond any controls. Yet students and teachers are more likely to use a quality-assessed and approved GenAI over a public GenAI tool if it is well-developed. The former would also allow school leaders and governments to create controls to combat risks such as biases and data privacy.

Box 1.2 – Risks associated with generative artificial intelligence (GenAI) in schools

Many off-the-shelf GenAI products were not designed as education tools. While presenting great promise, they are not specifically designed to foster critical thinking and can generate unsound pedagogical responses and harm student outcomes (Wang et al. 2024). Moreover, without a proper understanding of the tools and their shortcomings, the way they are trained can reinforce existing biases and produce hallucinations (incorrect information presented as factual) that can be difficult to counteract (Ali et al. 2024; Idowu et al. 2024; Tao et al. 2024).

GenAI tools and the way they are trained have implications for Aboriginal and Torres Strait Islander people. They have the potential to produce and perpetuate misinformation about Indigenous peoples' history and contemporary lives (Worrell 2024). They also have the potential to damage the intellectual rights and sovereignty of Aboriginal and Torres Strait Islander people through the inappropriate generation of materials such as Aboriginal art. Mechanisms must be put in place to ensure AI developments do not threaten Indigenous community wellbeing and self-determination (PC 2025g; Worrell 2024).

To use the tools well, students and teachers must understand them well. The quality of prompts a person provides can directly affect the quality and accuracy of the output (Garg et al. 2025).

Data privacy and potential misuse of GenAI that harms student and teacher wellbeing have also been highlighted as a serious risk to its use in schools (Standing Committee on Employment, Education and Training 2024).

GenAI use and cognitive development

A key concern about GenAI is the potential for students and teachers to rely too much on it, thereby affecting students' cognitive development. Some studies have shown that frequent and unmanaged use of AI tools correlates with decreased knowledge retention and critical thinking (Gerlich 2025; Kosmyna et al. 2025). An overdependence of AI can also diminish the potential gains that these tools have shown to bring to decision making and analytical thinking (Zhai et al. 2024). However, tools that are specifically designed for education purposes have shown positive impacts on learning (Létourneau et al. 2025).

2. Enabling tertiary education pathways

Summary

- **Vocational and higher education play a critical role in equipping Australians with the skills needed in a changing economy, yet disjointed systems limit its potential.**
- **Credible, accessible and timely credit transfer and recognition of prior learning (RPL) arrangements can make it easier for students to have existing skills recognised and build knowledge and skills over time.**
  - More effective credit transfer and RPL processes could reduce barriers to study and expand Australia's skilled workforce. Students and governments would save money and time through reduced duplication of learning, and students would have more opportunities to use their existing skills in the workplace.
  - Some groups of students – including Aboriginal and Torres Strait Islander people, those from disadvantaged backgrounds and regional students – are more likely to follow non-traditional learning paths and would therefore benefit most from improvements to credit transfer and RPL.
- **Improving the information available about credit transfer decisions made by higher education institutions is a fundamental first step in improving the current disjointed arrangements.**
  - All universities should provide clear, comprehensive and easily accessible information about likely credit outcomes, and should assess credit transfer applications before the deadline for accepting offers.
  - The Australian Tertiary Education Commission should build on existing initiatives to improve the quality and availability of data about credit decisions.
- **RPL assessment processes should be improved to facilitate more high-quality RPL.**
  - Developing RPL toolkits and implementing measures to reduce the risk of RPL fraud could improve RPL quality and trust in the system.

Effective credit transfer and RPL processes can support students, but reform is required

More than 90% of employment growth over the next decade is projected to occur in occupations requiring a higher education or vocational qualification (JSA 2024d). Australia can meet current and future skill needs only by significantly increasing the number of tertiary education graduates and people engaging in lifelong learning (O'Kane et al. 2024, p. 73). But tertiary education can only expand by going beyond its traditional cohorts, providing opportunities for more people to pursue qualifications. Australia needs a tertiary education

system that makes it as easy as possible for people to return to study, improve their skills and have their existing skills recognised.

Yet Australia's tertiary education system – comprising higher education and vocational education and training (VET) – is disjointed (JSA 2025f, pp. 11–16; Parliament of Australia 2024b, ch. 6). Many students face barriers to further study. Moving between VET and higher education – or returning to study after a break – can create unnecessary duplication of learning, greater education costs for students and governments, and delay entry into the workforce. People without formal qualifications but with relevant work experience and skills (including many migrants) are unable to get their current skills recognised. This limits the productivity potential of Australia's workforce.

Better systems of credit transfer and recognition of prior learning (RPL) (box 2.1) are needed to smooth transitions into education and between VET and higher education.

Box 2.1 – How do credit transfer and recognition of prior learning differ?

Both credit transfer and recognition of prior learning (RPL) can allow students to complete a qualification faster by receiving an exemption from completing units or courses in which they are already competent. Yet they differ in terms of the type of prior learning and the application process.

Credit transfer	Based on previously completing an equivalent VET or higher education unit.
RPL	Based on an assessment of skills and knowledge acquired through previous training, work or life experience.

Source: ASQA (nd); DoE (2013a).

Credit transfer is more formalised than RPL since it is based on the completion of a recognised qualification and does not require an individual assessment (O'Kane et al. 2024, p. 89). In VET, credit transfers are highly regulated, and providers have no discretion over credit transfers of equivalent units (Erica Smith, sub. 113; TDA, sub. 71; Wendy Cato, sub. 53). Standard 1.7 of the 2025 Outcome Standards for Registered Training Organisations (RTOs) states that 'VET students who have completed an equivalent training product are supported to obtain a credit transfer.' In higher education, universities assess applications for credit transfers independently.

RPL provides a mechanism for recognising knowledge and skills gained through many types of learning (Ithaca Group 2018, p. 26). RPL can include work experience, overseas education, informal training and other life experiences. The type and source of learning that could be recognised under RPL processes can vary widely, from years of informal caregiving experience to an overseas qualification. Being assessed for RPL can involve multiple stages, such as collating documents relevant to the application and participating in assessment interviews (TDA, sub. 71, p. 6). Relevant documents could include, for example, employment records, work testimonials and education transcripts.

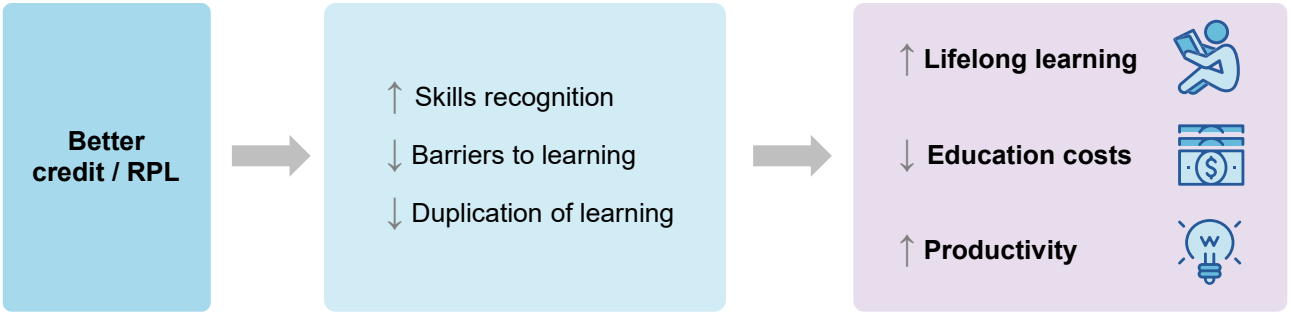
Education providers can also use students' previous experience and skills as part of the admissions process (UAC, sub. 129, p. 2). Credit and RPL that form the basis of admission (rather than reducing the number of units a student needs to study to complete a course) are not the focus of this chapter.

Access to credit transfer and RPL helps people to use existing skills and reduces barriers to further study

Lifelong learning strengthens labour markets and industry. By continuously updating their skills, workers become more engaged, more adaptable and better able to meet the evolving demands of the job market.

Improving credit transfer and RPL processes reduces barriers to further study, encouraging people to invest further in their human capital and build upon prior experience and qualifications (figure 2.1). Where students have already developed the necessary skills, improving the availability of credit transfers and RPL will reduce duplication in their learning and allow them to enter the workforce sooner. Furthermore, better recognition of existing skills helps people match to jobs that most suit them, unlocking the full potential of Australia's skilled workforce. Reducing education duplication also lowers costs for governments.

Figure 2.1 – The benefits of better credit transfer and RPL processes



Costly credit evaluation processes and the rejection of credit applications are significant barriers to pursuing further education (CHEPP 2024). In the United States, students who benefit from RPL have higher graduation rates, shorter completion periods and reduced tuition costs (Al-Malood 2023; Klein-Collins et al. 2020). Students whose prior experiences are valued can develop self-confidence, determination and a sense of agency, motivating them to persist with their studies (Raciti et al. 2024, p. 10).

Several inquiry participants highlighted the potential benefits of better credit transfer and RPL processes, including increased engagement in lifelong learning, reduced duplication of learning, more flexible training pathways, faster upskilling, and easing workplace pressures from skill shortages.[20]

Government has already committed to tertiary harmonisation reform

The Universities Accord (the Accord) proposed an ambitious target of lifting the tertiary attainment rate to 80% by 2050 (O'Kane et al. 2024, p. 2). In doing so, the Accord acknowledged 'the role that a more integrated tertiary education system will play in meeting skills demand' (O'Kane et al. 2024, p. 69).

The Australian Government announced a series of initiatives in response to the Accord. These include updating the Australian Qualifications Framework Qualifications Pathways Policy, working towards a standard approach to credit recognition, building better alignment between VET and higher education data, and developing a National Skills Taxonomy (DoE 2024). Jobs and Skills Australia's (JSA) tertiary harmonisation report identifies improving credit transfer and RPL as crucial to reforming the sector (JSA 2025f, pp. 23–24). Further, the Australian Tertiary Education Commission (ATEC) will be established with responsibility for progressing tertiary harmonisation priorities (DoE 2025g, p. 2, 2025c).

[20] AAPi, sub. 106; ATN Universities, sub. 160; CAPA, sub. 150; CET, sub. 103; CMEWA, sub. 120; COSBOA, sub. 124; ICA, sub. 97; Industry Skills Australia, sub. 112; PSO, sub. 221; UA, sub. 166; UAC, sub. 129; UOW, sub. 153.

The benefits of a more harmonised tertiary sector

Improving tertiary harmonisation and increasing tertiary education attainment across Australia brings significant potential benefits. Department of Education modelling finds that meeting the Australian University Accord target of 80% tertiary educational attainment would add an estimated $240 billion (in today's dollars) to the economy over the period to 2050 (DoE 2025d, p. 5). A more harmonised tertiary sector could be important for achieving the Accord targets.

In 2020-21, 5% of Australians aged 15 to 74 (924,000 people) wanted to undertake study towards a non-school qualification in the past 12 months, but could not (ABS 2022b). Common barriers included time and financial constraints, both of which would be alleviated in a more harmonised tertiary sector that better recognised past learning. Eliminating these barriers could have major economic benefits. For example, eliminating barriers for those who want to pursue a bachelor's degree could boost the economy by an estimated $2 billion each year due to the higher wages and greater employment participation of more highly-educated people (appendix C, section C.2).[21] However, addressing time and financial barriers to study would likely require multiple interventions (beyond improving credit transfer and RPL) and take some time.

On top of income benefits from further education, a more harmonised tertiary sector could directly reduce education costs for students. For example, JSA analysis explored case studies of VET-to-higher education pathways in South Australia. It found that going from a Diploma to a Bachelor of Information Technology under a harmonised tertiary sector takes three years and costs around $27,000, compared with a four-year pathway that costs around $36,000 without harmonisation (JSA 2024c, pp. 110–111). The PC estimates that if higher education students with a diploma finished their degrees faster, there would be around $1.5 billion in cost savings and income benefits each year (appendix C, section C.2).[22] This estimate represents an upper bound, as some students hold diplomas in unrelated fields while others already benefit from early completions (discussed below).

The benefits of a more harmonised tertiary education sector go beyond time and cost savings. For example, JSA identified that greater harmonisation between the sectors would allow for more degrees that combine elements of VET and higher education (JSA 2025f, p. 40).

Demand for credit transfer and RPL is unclear, but may be significant

The absence of an accurate source of data makes it difficult to estimate the demand for credit transfers and RPL. In 2023, about 25% of higher education students were reported as having been granted credit or RPL for their qualification (Higher Education Student Data Collection, DoE, pers. comm., 8 July 2025).[23] Using a relatively small sample of providers, Nous Group estimated that about 450,000 university students – about one in three of the total – apply for credit recognition each year (Nous Group 2019, p. 3).

Because these estimates do not capture students who are unaware of credit or RPL options or are deterred by the complexities of the process, the total number of students in higher education who could potentially receive credit or RPL is likely to be even higher. Better data and data infrastructure are needed to understand the size of the problem and the potential benefits of change.

Problems with RPL fraud make interpreting data on credit and RPL in the VET sector more complicated. The National Centre for Vocational Education Research found limited granting of RPL in VET, with fewer than 5% of successful subject results granted through the process (Osborne and Serich 2020). Yet the use of RPL by

[21] This analysis uses parts of the Department of Education's modelling of achieving the Accord targets.

[22] Other types of prior formal learning, such as advanced diplomas, can also result in faster completion times.

[23] However, there are limitations to this data that affect the quality of this information (box 2.4).

non-genuine providers to sell fake qualifications has created a culture of 'audit fear', likely resulting in underreporting of RPL (discussed further below).

Some students will benefit more from better credit and RPL processes

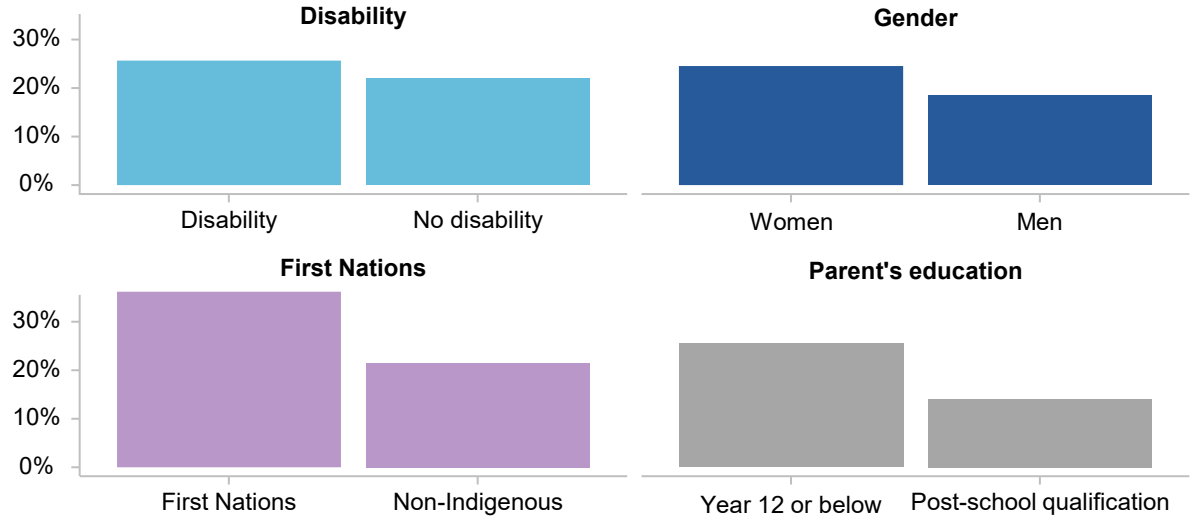
Better credit transfer and RPL processes can remove barriers to entering or re-entering post-secondary education, helping support education pathways that are important for advancing labour market participation. For example, VET pathways have supported disadvantaged cohorts to access more labour market opportunities (JSA 2024c, p. 6).

People, such as mature age students, who have already studied and/or have work experience before starting a particular qualification, are more likely to benefit from better credit and RPL processes. On average, about 31% of mature age students studying for their first bachelor's degree receive some form of credit or RPL, compared with 7% of younger students (PC analysis of higher education data in PLIDA).[24]

Women, Aboriginal and Torres Strait Islander people, people with disability, and people with parents who have not completed post-school education,[25] are more likely to be mature age students (figure 2.2). In 2019, 36% of Aboriginal and Torres Strait Islander students were mature age.

Figure 2.2 – Some cohorts are more likely to be mature age students

Proportion of higher education students that were mature age, 2019



A mature age student is defined as a student who first enrols in their degree after the age of 21. Data is filtered to domestic students studying their first recorded bachelor's degree. The parent's education variable contained a significant number of missing values and so estimates split by this variable use a smaller sample size of students.

Source: PC analysis of higher education data in PLIDA.

Aboriginal and Torres Strait Islander students, those from disadvantaged socioeconomic backgrounds, and people in regional areas are more likely to use VET as a pathway to higher education (Treasury 2023, p. 127). Accordingly, better credit transfer and RPL processes are likely to have bigger impacts on these cohorts by providing credit for prior VET study. Better RPL processes can also assist skilled migrants and

[24] The Person Level Integrated Data Asset (PLIDA) contains administrative data on enrolments and completions of higher education students. This analysis is filtered to domestic students studying their first recorded bachelor's degree.

[25] Measure of parent's education is based on one parent. There were a significant number of missing values for this variable, so estimates split by parent's education are based on a smaller sample size of students.

their families to access the labour market by recognising skills and qualifications learnt overseas (Teräs et al. 2024, chapter 3).[26] In the United States, Klein-Collins et al. (2020, pp. ix–x) concluded that RPL has strong potential to close equity gaps in post-secondary achievement.

One target in the National Agreement on Closing the Gap seeks to lift the proportion of Aboriginal and Torres Strait Islander people aged 25 to 34 who have completed a tertiary qualification – from 47% in 2021 to 70% by 2031 (PC 2025e). Better credit transfer and RPL arrangements would aid progress towards this target, but inquiry participants highlighted the importance (and sometimes lack of) culturally appropriate support for Aboriginal and Torres Strait Islander people taking tertiary education pathways.[27] Future initiatives should learn from programs such as the Remote Area Teacher Education Program (Queensland Government 2024b) that respect and value the experience and contributions of First Nations people.

Several inquiry participants pointed out that the difficulties of navigating credit transfer and RPL disproportionately impact underrepresented groups.[28] These include caregivers, who are disproportionately women facing time and resource constraints (ACU sub. 170; CAPA, sub. 150), and people in rural and remote locations (ACU, sub. 170; University of Tasmania, sub. 157; Wendy Cato, sub. 53).

A more flexible, transparent and inclusive approach to recognising learning (including informal and non-traditional learning) will better value the skills of all Australians.

Credit transfer in the higher education sector can be improved

Offering credit is not straightforward, but providers may have incentives to not grant credit

Credit transfer is heavily regulated in the VET sector, but not in higher education. Because Australian universities have significant freedom in their course design, the structure of degrees and the content of subjects vary across providers. For example, foundational economics units at two different universities may not contain the same subject material. As a result, education providers may be reluctant to grant credit due to concerns about the quality and relevance of prior learning (Ithaca Group 2018, p. 5; Osborne and Serich 2020, p. 9).

Several inquiry participants noted that, in many instances, providers have little financial incentive to offer credit or RPL.[29] The cost of processing credit transfer applications is typically borne by providers and can be substantial. Universities are not funded for units for which a student has been granted credit. Equally, a university not granting credit may lead a student to complete the full length of study there, producing a higher net revenue yield from that student.[30]

Credit processes are unclear and inconsistent

Varying credit transfer processes among providers add to the barriers students face in applying for credit. While more than 90% of higher education institutions publish information on their web pages on how to apply (Ithaca Group 2018, p. 13), many inquiry participants suggested that these processes are complex and inconsistent, with varying degrees of accessibility, reliability, transparency and timeliness. Students may be

[26] Chapter 4 discusses migrant skills recognition issues in more detail.
[27] ACU, sub. 170; IAHA, sub. 145; NACCHO, sub. 189; Skills Insight, sub. 107; University of Tasmania, sub. 157.
[28] AAPi, sub. 106; ACU, sub. 170; CAPA, sub. 150; SASC, sub. 226; UAC, sub. 129; University of Melbourne, sub. 139; University of Tasmania, sub. 157; Wendy Cato, sub. 53.
[29] ACCI, sub. 126; Industry Skills Australia, sub. 112; TDA, sub. 71; TVET Global, sub. 123.
[30] However, some inquiry participants noted that there is not sufficient evidence that universities refuse credit for financial gain (Andrew Smith, sub. 87; Erica Smith, sub. 113).

unaware of their available options, and some providers only advise students of their eligibility for credit after enrolment (AAPi sub, 106; CAPA, sub. 150; UAC, sub. 129).

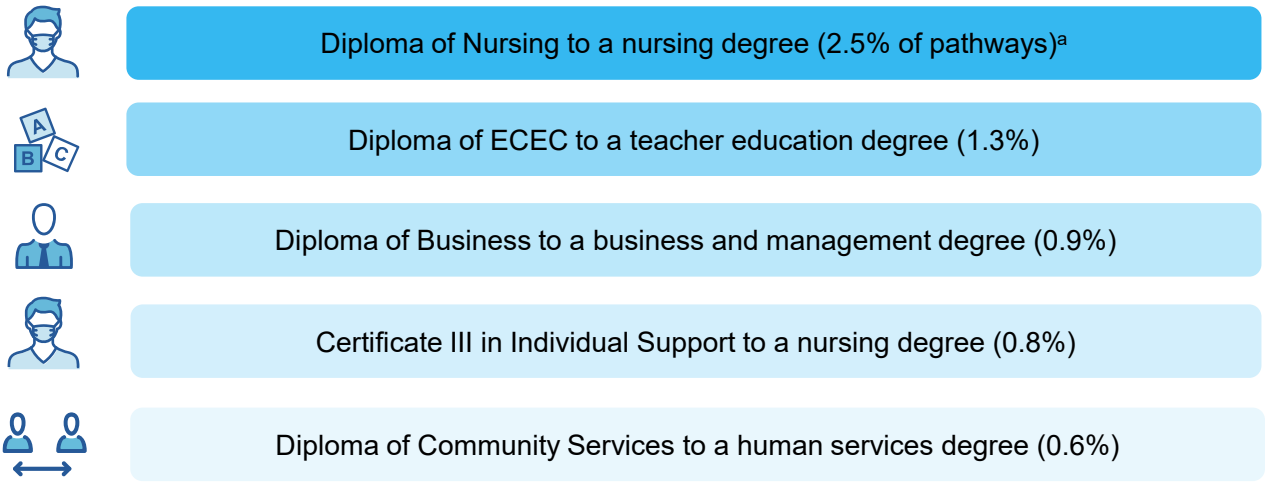
The Australian Qualifications Framework Qualifications Pathways Policy requires universities to have 'clear, accessible and transparent policies and processes to provide qualifications pathways and credit arrangements for students' (DoE 2013b, p. 78). However, higher education providers are not specifically required to have searchable databases of credit precedents to inform their decisions about where to study. As a result, students still struggle to understand their credit options.

> Students apply for credit separately to the institution after enrolment in the course. Students are therefore required to make enrolment decisions without information on how much (if any) credit will be awarded. There is also currently no mechanism through which students can compare available credit between different institutions. (Universities Admissions Centre, qr. 90, p. 2)

Students on common VET-to-higher-education pathways are more likely to receive credit, although variation across providers remains

PC analysis of higher education and VET data identified the most common pathways from VET to higher education (figure 2.3).[31]

Figure 2.3 – Most common VET-to-higher-education pathways



A VET-to-higher-education education pathway is defined as a student who was enrolled in VET within two years prior to being enrolled in higher education. Data is pooled over 2015 to 2019. To link VET and higher education data, only students who had a HELP loan could be included. Some one-off courses, such as first aid, were removed. ECEC stands for Early Childhood Education and Care. **a.** Numbers are percentages of all VET-to-higher-education pathways identified over 2015 to 2019.

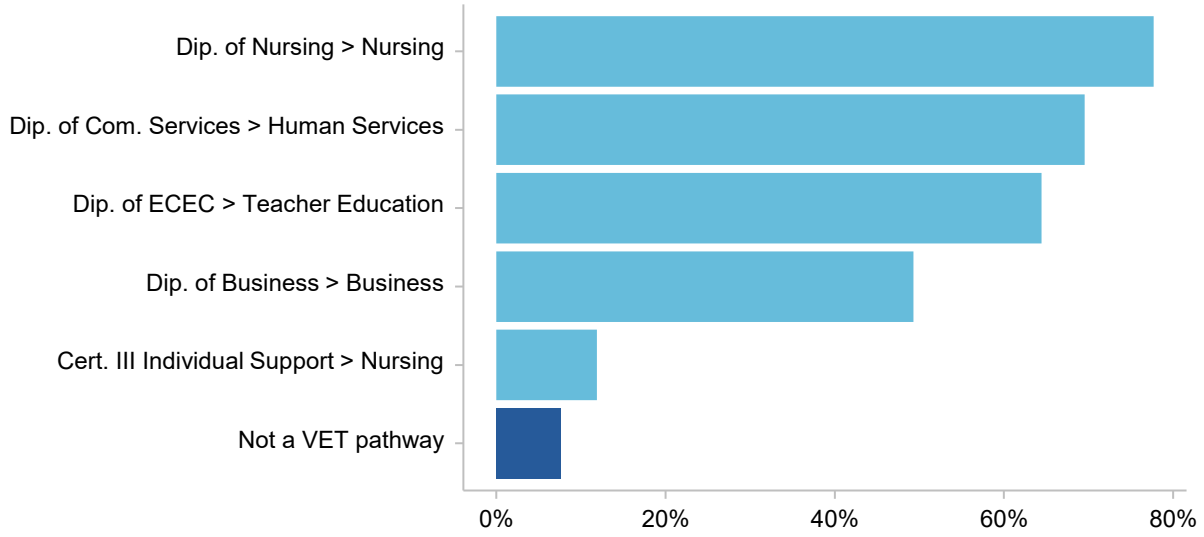
Source: PC analysis of higher education and VET data in PLIDA.

Students on these common pathways are more likely to receive credit towards their higher education degree than other students who are not on a pathway (figure 2.4). However, credit recognition varies considerably across institutions depending on the pathway (appendix C, section C.2), and the impact of receiving credit on course length also differs (box 2.2). Some pathways may have scope to more consistently award credit, resulting in shorter completion times and fewer barriers to further study.

[31] Appendix C, section C.2, provides further detail on data cleaning and approach.

Figure 2.4 – More students receive credit on common education pathways

Percent of students receiving credit



VET-to-higher-education pathways are identified from students who were enrolled in VET within two years prior to being enrolled in higher education. Higher education data filtered to first enrolment in the data. Data is pooled over the years 2015 to 2019. Data only includes students who had a HELP loan.

Source: PC analysis of higher education and VET data in PLIDA.

Box 2.2 – Credit recognition on nursing and education pathways

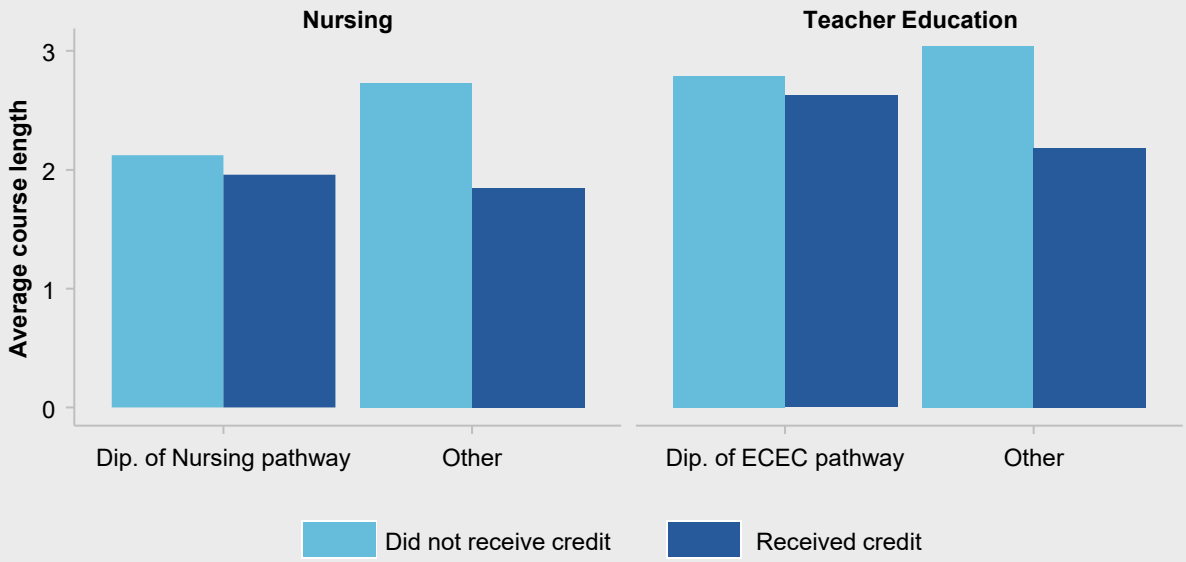
Credit recognition appears to be operating relatively well on the pathway from a Diploma of Nursing to a nursing degree. Around 78% of students on this pathway receive credit. Furthermore, even those that do not have recorded credit in the higher education data finish their nursing degree faster compared to students not on this pathway that do not receive credit, on average. This could be because their credits were not accurately recorded in the data, or they were admitted to accelerated nursing degrees due to prior experience. On average, those on this Diploma of Nursing pathway finish their degree in about two years.

Credit recognition appears to be less consistent on the pathway from a Diploma of Early Childhood Education and Care (ECEC) to teacher education. Around 64% of students on this pathway receive credit, but credit recognition varies widely across providers (appendix C, section C.2). Even those that receive credit on the Diploma of ECEC pathway still take around 2.6 years to finish their degree, on average. Recent e61 research shows that the supply of new teachers is constrained, with new university enrolments in teaching falling behind other fields (Buckley and Griselda 2025). Better credit recognition on teaching pathways may ease these supply constraints by encouraging more VET students to pursue higher education.

However, there are many different teacher education accreditations, which may explain why there is less credit recognition on the teaching pathway. Teacher education includes early childhood education, but also primary, secondary and tertiary teaching, where a Diploma of ECEC may be less relevant.

Box 2.2 – Credit recognition on nursing and education pathways

Nursing students on a VET pathway finish their higher education degrees faster



VET-to-higher-education pathways are identified from students who were enrolled in VET within two years prior to being enrolled in higher education. Data is filtered to students who have completed their degree, pooled over the years 2015 to 2019. Data only includes students who had a HELP loan. Students on a VET pathway who finish their degrees faster may spend more time doing tertiary education overall due to time spent in the VET sector.

Source: PC analysis of higher education and VET data in PLIDA.

High-quality recognition of prior learning is costly and complex

Recognising prior learning (as opposed to credit for previous formal qualifications) is inherently difficult. Unlike credit transfer processes, RPL requires an individual assessment (O'Kane et al. 2024, p. 89). Assessing an RPL application requires a specialist in the field to determine whether the learning is equivalent to the course being offered by the education provider. To apply, students are typically required to collate relevant documents, participate in interviews and in some cases undertake a practical skills assessment to demonstrate their competence.

This complexity makes RPL assessments costly, which can limit their uptake and use (Osborne and Serich 2020, p. 9). In higher education, students typically do not pay for RPL assessment. Providers pay the costs, which can be considerable. An Australian Catholic University faculty estimated the cost of assessing 5,250 RPL applications in one semester to be around $416,900 (ACU, sub. 170, p. 4). Higher education providers do not receive a government subsidy for units completed via RPL.

In VET, by contrast, students typically pay for RPL assessments, although in some cases the cost is subsidised. Assessment fees are not regulated and can be equivalent to the cost of undertaking the unit for which students are seeking exemption. The government subsidy received by RTOs for units where RPL has been granted varies across states and territories (box 2.3).

Box 2.3 – Who pays what for credit and RPL in VET?

In VET, students do not pay to have credit transfers assessed and providers do not receive a government subsidy for units completed by credit transfer.

RPL fees are typically determined by RTOs. It is not uncommon for the RPL fee to be equivalent to the standard tuition fee for the course for which RPL is being sought, especially for full fee-paying students (both domestic and international). In Victoria, some cohorts (such as concession card holders and Aboriginal and Torres Strait Islander students) receive RPL fee concessions or exemptions when undertaking government-subsidised training.

For government-supported places, the amount received by providers for units completed through RPL varies by state. For example:

- In Victoria, providers receive either 25% or 50% of the normal subsidy for units completed using RPL, depending on the course. The government makes an additional contribution to providers for students who receive RPL fee concessions or reductions.
- In Queensland, providers receive 100% of the normal subsidy for units completed using RPL, except for foundational skills training, certificate I and II level qualifications, or where granting RPL for a unit results in a student completing an entire qualification via RPL.
- In New South Wales, under the Smart and Skilled program, providers receive 50% of the standard subsidy for units completed using RPL. Under the Trade Pathways for Experienced Workers program, if an eligible student completes three or more units using RPL with an approved provider, the provider receives an RPL gap incentive covering the remaining 50% of the unit subsidy.
- In Western Australia, providers receive 50% of the relevant course subsidy rate for units completed using RPL.

In many jurisdictions, providers cannot charge RPL fees for fee-free TAFE places and receive 100% of the normal subsidy for units completed using RPL. However, in Western Australia, providers can charge RPL fees for any course, including free courses, and the same provider subsidy applies as for government-supported places.

Source: Victorian Department of Jobs, Skills, Industry and Regions, pers. comm., 26 November 2025; Queensland Department of Trade, Employment and Training, pers. comm., 26 November 2025; NSW Department of Education, pers. comm., 26 November 2025; WA Department of Training and Workforce Development, pers. comm., 1 December 2025.

These financial arrangements affect incentives for providers to offer RPL. Several inquiry participants noted the financial challenges of offering RPL (ASCA, qr. 34; HVIA, qr. 47; MFAA, qr. 63), and that RTOs incur unrecovered costs for doing RPL assessments (NACCHO, sub. 37). Industry Skills Australia noted:

> In situations where RTOs receive less funding for conducting an RPL assessment than for delivering a training program, the relative profitability of each option may influence RTO attitudes and actions. (Industry Skills Australia, sub. 112, p. 3)

The cost and complexity of RPL processes also discourage students from applying for RPL. Many submissions argued that the high administrative burden for students, potentially including non-refundable fees, can discourage them from applying for RPL.[32]

> I tried to get RPL years ago and the process was worse than completing an entire course so I did not proceed. (Former student, qr. 32, p. 2)

Previous reviews have found RPL practices to be inconsistent, outdated, and a potential barrier to further study (Ithaca Group 2018; O'Kane et al. 2024, pp. 89–90). A recent review of the Australian apprenticeship system recommended that the government, regulators and Jobs and Skills Councils collectively support best-practice RPL for apprentices in order to fast-track pathways where competencies can be demonstrated (DEWR 2024, p. 25). Best-practice RPL requires educational institutions to clearly communicate which types of professional experience and further education are eligible for recognition, under what circumstances, and where limits apply (Engelage et al. 2024, p. 37).

Fraudulent RPL is undermining trust in the VET system

A current challenge in the VET sector is the use of RPL for fraudulent purposes. There have been many cases of providers illegally using RPL to allow people to purchase a qualification without learning required skills (ASQA 2025a; Ferguson 2025). Many inquiry participants expressed concerns with RPL fraud in VET.[33]

> Threats to the quality and integrity of RPL (as opposed to credit transfer practices) have significantly increased, either as a result of poor quality assessment or due to models purporting to be RPL but which are disingenuous 'cash for qualifications'. These practices are often driven by mandatory qualifications in skill shortage areas such as aged care, childcare, disability services and trades - making the lure of 'quick' qualifications through fraudulent RPL more appealing to unscrupulous RTOs [registered training organisations] and potentially complicit students … in 2025, ASQA has assessed threat behaviours associated with RPL as critical, which is an escalated risk rating compared to 2024. (ASQA, sub. 146, pp. 2–3)

RPL fraud in the VET sector undermines confidence in qualifications, distorting the market by undercutting genuine, high-quality providers. This imposes costs on employers who unknowingly hire underqualified workers and, in some cases, compromises workplace and consumer safety (AEU Federal Office, sub. 119; MEA, sub. 94; ASQA, sub. 146).

To overcome the risk of RPL fraud, the Australian Skills Quality Authority (ASQA) investigates and closes poor performing or fraudulent providers. Between November 2024 and September 2025, ASQA cancelled 13 RTO registrations and revoked over 29,000 qualifications, many issued under fraudulent RPL models (ASQA, sub. 146, p. 3). The Australian Government is progressing reforms to strengthen ASQA's focus on building capability and fostering excellence across the VET sector (DEWR 2023a).

However, some inquiry participants suggested that current regulator frameworks have 'fostered a culture of audit fear' among non-fraudulent providers (ACCI, sub. 126, p. 2). Recent regulatory investigations from ASQA confirm that RPL is almost certainly under-reported (ASQA, sub. 146). More work is needed to overcome the challenge of RPL fraud in the VET sector and build more trust in RPL.

[32] AAPi, sub. 106; AGWA, sub. 100; ITECA, sub. 96; Wendy Cato, sub. 53.

[33] AEU Federal office, sub. 119; ASQA, sub. 146; ITECA, sub. 96; MEA, sub. 94; SkillsIQ, sub. 131, TDA, sub. 71.

Concrete steps towards a national credit and RPL system

A national credit transfer and RPL system has been recommended in previous studies and reviews (Ithaca Group 2018, p. 6; JSA 2025f, p. 6; O'Kane et al. 2024, p. 18). Many inquiry participants supported a better and more coordinated system.[34] The PC is recommending a series of practical measures that would speed progress towards a national system, recognising that higher education and VET face different challenges.

Universities should assess credit transfers before enrolment

To help better predict what education pathways are available to them, students should be able to apply for credit transfer and learn of the decision before enrolment. The current system does not guarantee students access to this information. At the time of Ithaca Group's Provider Survey (2018, p. 21), 24% of higher education providers did not allow students to apply for credit before enrolment. Removing this constraint would help students to better understand their options, reducing barriers to further study. As discussed previously, credit transfer is more systematic in the VET sector (ASQA 2025b). Because of this, the discussion here focuses on higher education.

Ensuring that students know credit transfer outcomes before enrolment would create a stronger incentive for universities to offer credit where justified. Instead of having an incentive to deny credit if the student is already enrolled, a university can promote better credit transfer options as a form of competitive advantage. Effective governance arrangements would be needed to enforce such a requirement. Ensuring credit transfers are assessed before enrolment should apply to universities in the first instance, since they cater to most higher education students and are less likely than smaller providers to face capacity constraints for processing applications.[35] Students should still have the option to apply for credit after enrolment.

Further, making credit decisions during the application process may be more cost-effective for some providers. Making both admission and credit decisions while the applicant's transcript is being considered could save time and require fewer staff than having separate, disjointed processes.

Several participants supported the recommendation to have credit transfer and RPL assessed before enrolment,[36] noting that better information would help students to make more informed choices. However, other participants were concerned about feasibility,[37] particularly for RPL, where processes are more tailored and time-consuming. Accordingly, the PC has limited this recommendation to credit transfer, not RPL. Requiring RPL decisions prior to enrolment could lead to overly simplified and inconsistent RPL assessments, and some students could be unfairly rejected (ITECA, sub. 96; UA, sub. 166).

[34] Amazon, sub. 188; ATN Universities, sub. 160; ASQA, sub. 146; BCA, sub. 67; Engineers Australia, sub. 187; Go8, sub. 161; ICA, sub. 97; R&CA, sub. 111; UA, sub. 166; University of Tasmania, sub. 157; WAVE, sub. 109.
[35] In 2024, 88% of higher education students were enrolled in public universities (DoE 2025b, tables 1, 2 and 3).
[36] CAPA, sub. 150; FAAA, sub. 135; UAC, sub. 129; University of Tasmania, sub. 157; WAVE, sub. 109.
[37] ACCI, sub. 126; ATN Universities, sub. 160; ITECA, sub. 96; Wendy Cato, sub. 53.

Recommendation 2.1
Ensure students have credit transfer assessed before the deadline for accepting an offer

The Australian Government should develop effective governance arrangements to ensure students can have credit transfer assessed before the deadline for accepting an offer. This requirement should apply to universities in the first instance, before expanding to other higher education providers. Students should not be precluded from applying for credit transfer at a later point in their studies.

University credit decisions must be more transparent

The PC recommends that the Australian government and the higher education sector work towards making universities' credit decisions more transparent, to help student decision making and reduce providers' administrative costs.

The focus should be on credit transfer rather than RPL because codifying and reporting RPL decisions would be costly and challenging.[38] We have also focused on the higher education sector rather than VET because credit transfers in VET are already enforced across equivalent training products (ASQA 2025b). However, a significant number of students pursue VET qualifications within a year of attaining a higher education qualification (JSA, pers. comm., 15 August 2025). Future work could explore whether some higher-education-to-VET pathways would benefit from better credit transfer processes.

More transparent credit transfer decisions would help students

Ideally, students should be able to understand their credit transfer options at all education providers before they enrol, so they can make informed decisions about which courses to pursue. Comprehensive and searchable databases of credit precedents would enable students to understand their credit options based on what qualifications they hold or intend to pursue. For example, a student could search whether a VET qualification they hold has been used previously to obtain credit for a university degree. The ability to search credit transfer decisions reduces barriers to further study, allowing current or prospective students to understand and compare the time and financial costs of different education pathways.

The ability of students to easily search and compare credit transfer outcomes across institutions could encourage providers to make their credit decisions more consistent in order to compete for enrolments. Further, providers could more easily learn from credit transfer decisions made by other institutions to speed up their own processes. Several participants supported the goal of a national database that promotes transparency and helps students to understand their options.[39]

Finally, a consistent database can expose inconsistencies in credit transfer decisions both within and between providers. For example, since VET qualifications need to follow nationally recognised 'Training Packages' (ASQA nd), course content should be highly similar across providers. A university that grants credit for a VET subject from one provider should have little reason to refuse credit for the same subject from another provider of similar quality.

[38] Bond University, sub. 61; SA Skills Commission, sub. 226; University of Tasmania, sub. 157; Wendy Cato, sub. 53.
[39] AAPi, sub. 106; CET sub. 103; UAC, sub. 129; University of Tasmania, sub. 157.

A top-down approach to establishing a national database could be costly and negatively impact some providers

Several submissions in response to the PC's interim report pointed to the high cost of establishing a national credit database,[40] and noted that it could involve significant cyber security and privacy risks (ACCI, sub. 126; ITECA, sub. 96; UAC, sub. 129). Differences between institutions could also make it harder to bring together credit transfer data in one place.

> Even within a single university, managing subject-to-subject, subject-to-program, and program-to-program credit precedents, especially when factoring in specified vs. unspecified credit and their impact on study duration, requires significant administrative oversight. Scaling this across 40 plus institutions, each with distinct credit point systems, program rules, terminologies, and historical subject versions, would be a formidable task. (Bond University, sub. 61, p. 1)

A top-down approach to credit data collection might disadvantage smaller providers who lack the resources to invest in enabling infrastructure (University of Melbourne, sub. 139; University of Tasmania, sub. 157). Imposing standardised data collection and infrastructure methods may also unfairly impact providers that have already invested in alternative types of credit data infrastructure (ACU, sub. 170).

Using and improving existing data infrastructure is a practical first step

Using existing data infrastructure and gradually expanding consistent data processes across providers is likely to be less costly and more practical than top-down approaches to establishing a national database. As a first step, ensuring that each university has a searchable, user-friendly credit database or calculator would improve the transparency and accountability of credit transfer decisions across the system, and cover the bulk of higher education students.

Not all universities offer online credit calculators or databases that help students understand what credit they might receive. Some universities only allow current students to apply for credit, providing only limited public information about credit options to prospective students. Even universities that publish information on credit options can have noticeable gaps in their data. Some credit calculators provide little or no information on credit precedents for even common study pathways (such as Diploma of Nursing to a nursing degree), while others only provide information for study at specific institutions. Although VET qualifications are standardised across providers, many university credit calculators will display credit for a VET qualification from one provider but not for the same qualification from another provider. Some calculators are not user friendly, requiring students to check separately for credit for each completed unit rather than whole courses, for example.

All universities should have a clear, comprehensive and easily accessible source of information about likely credit outcomes. This could be a credit calculator, searchable precedent database, or a searchable list (such as a spreadsheet or document) of recent credit decisions. An effective credit database should allow a current or prospective student to reliably determine what credit they would receive for their current formal education background. At a minimum, it should:

- allow prospective students (not just enrolled students) to access information about likely credit
- allow students to easily search credit options based on their completed study and planned study.

For example, given that VET qualifications are standardised, a student should be able to understand whether credit has been granted in the past for a particular VET qualification (regardless of where that qualification

[40] ACCI, sub. 126; Andrew Smith, sub. 87; Erica Smith, sub. 113; TDA, sub. 71; UAC, sub. 129; University of Melbourne, sub. 139; University of Tasmania, sub. 157; Wendy Cato, sub. 53.

was obtained).[41] The information would be more user friendly if students were allowed to search for full courses, rather than having to search separately for precedents for every unit within a course. To help students even more, universities should aim to display examples of similar credit precedents in cases where an exact match is not found.

In addition to institution-specific information, further moves towards a more integrated approach to sharing credit transfer information with students and across higher education institutions are underway (box 2.4). They provide a promising foundation on which to start building better data infrastructure and potentially cost less, and involve less duplication of effort, than establishing such a database from scratch. The ATEC should evaluate cross-institution data options and encourage their use where desirable while supporting collaboration between institutions, government and industry. In some cases, universities may have an incentive to join such programs if uplifting their data capability helps lower their administrative costs.

The role of the ATEC and use of technology to streamline credit and RPL processes is discussed below.

Box 2.4 – Existing sources of information on credit transfer in higher education

The **Universities Admissions Centre (UAC)** has developed the **Advance** software platform that helps enable efficient and transparent credit processes. Advance contains a database of a university's credit precedents and articulation agreements. The platform includes an applicant-facing credit calculator that allows students to compare outcomes before they apply. Advance is used by two Australian universities and can be scaled to a broader level (UAC, sub. 129).

My eQuals is a digital platform for sharing and verifying tertiary qualification records. My eQuals is a sector solution that is managed on the sector's behalf by Higher Ed Services, a not-for-profit organisation owned by Universities Australia, and is used by over 125 Australian and New Zealand higher education institutions, including some TAFEs. A proof of concept was recently undertaken to develop a credit management system. Ongoing work is focused on securing a funding source to formally initiate the project to develop a sector-wide credit recognition and management system (My eQuals, pers. comm., 10 November 2025).

The Department of Education's **Tertiary Collection of Student Information (TCSI) system** is a near real-time data exchange that enables a student's academic history to be accessed and verified more quickly and accurately. Tertiary admissions centres use the Automated Results Transfer System to transfer and verify tertiary qualifications between institutions. However, more needs to be done to improve searchability for students and efficiency for providers.

Providers are currently required to report whether a student has received credit transfer or RPL, but not which subjects the students received credit for or what previous study or skills provided the basis for the credit. This limits the usefulness of TCSI data for identifying credit and RPL precedents that students could use to inform study decisions.

Furthermore, tracking credit transfers and RPL between providers remains difficult due to provider-centric data infrastructure, poor system-to-system communication (for example, from VET to higher education and between providers) and a lack of universal identifiers for students not on a Commonwealth-supported place. As a result, the Department of Education considers TCSI data on credit

[41] A simple way to achieve this would be to allow students to search by VET course without specifying a provider so they can see if students with the same qualification from another provider have received credit in the past.

Box 2.4 – Existing sources of information on credit transfer in higher education

and RPL to be of low quality, with a significant number of missing values, and known instances of RPL not being reported when it should be. While the introduction of the Unique Student Identifier (USI) is slowly addressing many of these problems, more targeted investment is needed to improve reporting and tracking of credit and RPL in higher education (DoE, pers. comm., 8 July 2025).

As TCSI data collection improves over time, this central data repository could be used to improve the transparency of university-level credit decisions. For TSCI to be a useful source of data on credit precedents, providers would need to be compelled to provide accurate data on what subjects credit was granted for, and what previous study constituted the basis for the credit.

Recommendation 2.2
Increase transparency of credit transfer decisions in higher education

The Australian Government and the higher education sector should work towards making credit transfer decisions more transparent.

As a first step, all universities should have a clear, comprehensive and easily accessible source of information about likely credit outcomes so that prospective students can understand what credit they are likely to receive and compare credit across institutions.

The Australian Tertiary Education Commission, as steward of the tertiary education system, should play a role in driving higher data quality standards and better information about credit transfer decisions across universities to support tertiary harmonisation.

RPL assessment capability and quality need to be improved

RPL is inherently complex to assess. Developing standardised assessment tools would make it easier for providers to assess what skills and knowledge a prospective student possesses and what credit they should receive, while also increasing transparency and consistency for students. Longer term, foundational RPL capability could be improved further through additional training for RPL assessors and by trialling assessment-only approaches in key industries or occupations.

Improving student access to RPL and reducing assessment costs for providers should be balanced with measures to minimise the risk of fraud and build trust in RPL.

RPL toolkits should be developed for high-priority pathways

RPL processes are costly since they are typically tailored to the individual applicant. However, in instances where a specific skillset is commonly gained from prior experience, more coordination among providers could increase transparency and consistency, and reduce assessment costs.

RPL toolkits should be developed for high-priority or high-volume pathways (identification of high priority pathways is explored later in the chapter). A toolkit could outline clearly for students what evidence is required to support RPL assessments and give guidance on methods of assessment. The administrative

burden of assessing individual applications could be reduced by explicitly mapping RPL evidence to competencies for specific units of study in a way that all providers offering those units can use.

While assessing RPL in higher education is not inherently more difficult than in VET, inconsistencies across universities (including in course design) may limit the benefits of a coordinated approach.[42] As a result, some participants suggested that coordinated RPL assessments were likely to be more feasible in VET than in higher education.

> A central or coordinated approach to testing and validating an individual's existing skills is more likely to be feasible in the vocational system where training packages, skill set structures, and competency frameworks provide a common basis for clear and mutually recognised learning outcomes across the sector. (RMIT University, sub. 95, pp. 8–9)

Several organisations are already developing RPL toolkits for VET qualifications (box 2.5). Toolkit development could also draw on the experience of coordinated assessment processes and programs that have helped people get their skills recognised and pursue education pathways. These processes and programs include Victoria's non-apprentice pathway into the plumbing occupation (chapter 4, box 4.8), the Trade Pathways for Experienced Workers program (CTPM 2025), and the Remote Area Teacher Education Program (Queensland Government 2024b).

Box 2.5 – RPL toolkits are already being developed for some VET qualifications

HumanAbility, the Jobs and Skills Council for the care and support industry, has developed an RPL toolkit for Certificate III in Early Childhood Education and Care. The toolkit includes a self-evaluation guide to help workers gather the evidence needed to support an RPL assessment. It advises assessors on how to undertake a high-quality RPL assessment (including standardised evaluation forms and checklists, questions that assessors can ask to check applicants' knowledge, and checklists for undertaking workplace observations and gathering third party reports). It also provides a mapping guide that translates evidence collected into relevant units of competency (HumanAbility 2025).

The National Aboriginal Community Controlled Health Organisation (NACCHO) has developed a series of RPL toolkits as part of implementation of the *Aboriginal and Torres Strait Islander Health and Care Traineeship Framework* (NACCHO 2024, pp. 55–56). Assessment methods identified by the framework that can be used to support RPL include workplace practical observation checklists, oral questioning about workplace scenarios, written questions and answers, a reflection journal, evidence portfolios and third-party reports such as references. The toolkits have been developed for particular units of competency that are common entry pathways for health workers into a traditional traineeship (NACCHO 2025, p. 21).

University courses that are professionally accredited are more consistent in their subject matter than other courses, because accrediting bodies already conduct assessments of learning outcome equivalences (University of Tasmania, sub. 157). These courses may benefit more from RPL toolkits compared to courses without professional accreditation where course content can vary considerably.

Australia can also learn from overseas experiences in coordinating and building RPL capability in higher education. For example, Priorlearning.ie is an initiative of Irish higher education institutions that works to

[42] ACU, sub. 170; RMIT University, sub. 95; Wendy Cato, sub. 53.

embed and expand RPL. It has developed a suite of *RPL exemplars* that provide practical examples of how RPL has been used for entry and credit across a range of institutions, qualifications and fields of study (Priorlearning.ie nd).

Jobs and Skills Councils (JSCs) are well-placed to lead work on developing RPL toolkits given their industry expertise and convening powers across government, employers and unions. JSCs should also work with VET regulators, RTOs and community organisations (including Aboriginal and Torres Strait Islander community-controlled organisations) to draw on their knowledge, ensure toolkits are culturally safe, ensure stakeholder buy-in, and avoid undermining trust in RPL and quality training outcomes.

Reducing fraud risks can increase trust in RPL

Fraudulent RPL assessments in VET undermine confidence in qualifications and cause some RTOs to be reluctant to offer RPL for fear of being audited or undermining the value of their courses (ACCI, sub. 126). ASQA has identified RPL fraud as a risk priority. Key concerns include low-quality RPL assessment leading to VET qualifications being issued without adequate verification, aggressive marketing of RPL to prospective students, and safety risks from the use of fraudulent qualifications (ASQA 2025c). ASQA can de-register RTOs that have been found to be operating fraudulently and cancel the qualifications they provide.

One way that ASQA is responding to the risk of RPL fraud is by establishing a function to enable independent validation of student assessments (ASQA, sub. 146). Drawing on an external panel of industry-skilled personnel (which ASQA is currently tendering for), assessors would undertake targeted checks on cohorts of students who have studied with selected RTOs to ensure that RTOs are undertaking appropriate assessment when awarding qualifications, including through RPL. The first checks would be focused on the construction and early childhood industries (ASQA, pers. comm., 27 November 2025).

Some inquiry participants argued for limiting RPL assessment to select high-quality RTOs, such as TAFEs, with a track record of assessing RPL (AEU Federal Office, sub. 119; TDA, sub. 71). RTOs could be required to gain accreditation for undertaking RPL assessment by having their assessments independently verified. Alternatively, it may be more practical to not allow some RTOs, such as new entrants who are yet to demonstrate their capability, to provide RPL.

However, such approaches risk restricting access to RPL for people with limited provider choice, such as those in regional and remote areas (Wendy Cato, sub. 53). Were such approaches to be pursued, to ensure students are not disadvantaged, there could be arrangements for RTOs that are restricted from offering RPL to reach agreement with non-restricted RTOs to provide RPL assessments. Other ways to support ongoing access to RPL assessment in regional or remote areas – through targeted regional assessor recruitment, coordination of recruitment processes in particular locations, or resourcing for assessor travel, for example – could also be considered.

Funding arrangements should reflect the cost of providing RPL

Expensive RPL processes that are not sufficiently supported by government reimbursements may result in under-provision of RPL. Funding arrangements need to recognise that good quality RPL is costly to provide, especially if practical skills assessments are required. For government-supported VET courses, provider reimbursement for units completed through RPL should reflect the cost of providing RPL (including gap training where necessary), which may be up to the full cost of delivering the training. State and territory governments – which set funding arrangements for VET – should collect and share more data about what level of provider reimbursement best supports access to high-quality RPL.

To allay concerns that subsidising RPL will increase the risk of fraud, any changes to funding arrangements must be accompanied by more robust oversight of RPL assessment by ASQA, as discussed above.

Consideration should also be given to funding arrangements for RPL in higher education and full-fee VET courses to ensure that provider incentives to offer RPL are aligned with public and private benefits.

Initiatives to improve assessor training and create assessment-only centres for RPL could be explored

Several participants in this inquiry stressed the need to improve RPL assessor training.[43]

> While assessor training in RPL was once common across the VET system, this has reduced markedly, due to the changes to Standards for RTOs over the years that allowed persons who have not been trained in RPL to become assessors, contributing to a shortage of assessors with the expertise to conduct candidate-centred, assessor-led RPL assessments. (Wendy Cato, sub. 53, p. 11)

Inquiry participants made various suggestions about ways to increase RPL capability in VET and higher education. They ranged from 'lighter touch' (e.g. developing a register of RPL specialists who have undertaken additional professional development (SkillsIQ, sub. 131)) to more involved (e.g. establishing a national program to train and accredit RPL assessors (WAVE, sub. 109)).

More centralised approaches were also suggested, such as establishing assessment-only centres that specialise in high-quality RPL assessment. For example, Industry Skills Australia argued that assessment-only centres would:

> … provide an opportunity to: develop practitioner and organisation expertise by focusing solely on high-quality, transparent RPL assessment processes; establish guidance and advisory roles, that are separate from the assessor, to support candidates through RPL; develop approaches for providing information, advice and guidance before, during and after the assessment to empower individuals and ensure they are well prepared; and promote the availability of RPL to make it widely accessible, including through targeted outreach to equity-priority groups. (Industry Skills Australia, sub. 112, p. 6)

Similar centres operate in Portugal, where Qualifica Centres provide pathways for individuals to have their skills assessed and certified, making RPL more accessible for students (OECD 2025, p. 101).

If access to high-quality RPL continues to be a problem, the PC considers there would be merit in trialling assessment-only RPL centres. Such trials should focus on industries or occupations where many workers have extensive work experience and skills but lack formal qualifications, leading to high demand for RPL. In the care industries, for example, assessment-only centres could be an efficient way to formally recognise the skills of the existing workforce and identify skill gaps that warrant further training. Such models could be led by specialised education providers or industry and could learn from existing examples of coordinated assessments (such as Victoria's non-apprentice pathway into the plumbing occupation; chapter 4, box 4.8).

[43] SkillsIQ, sub. 131; TDA, sub. 71; WAVE, sub. 109; Wendy Cato, sub. 53.

Recommendation 2.3
Improve the quality and integrity of recognition of prior learning to boost skills recognition and productivity

To encourage the growth of high-quality recognition of prior learning (RPL), Jobs and Skills Councils should lead work on developing toolkits to support consistency and streamlining of RPL assessment practices in high-priority and high-volume pathways (where appropriate). In the longer term, improved assessor training and assessment-only approaches could be trialled in high-priority occupations to enable more RPL assessment to be done efficiently, with integrity.

To improve trust in RPL, the Australian Skills Quality Authority should consider measures to further reduce the risk of RPL fraud in vocational education and training; these might include expanding independent validation or requiring registered training organisations to be accredited to provide RPL assessments.

Considerations for improving and streamlining credit transfer and RPL processes

The ATEC should play a key role

Encouraging providers to jointly improve their data infrastructure and publish credit transfer decisions will be difficult. There is little evidence to date that bilateral or multilateral agreements between providers can achieve that coordination. Establishing joined-up credit systems is likely to be costly for individual providers. A system-level response is needed.

As part of its role in advising on opportunities to improve collaboration and coordination between VET and higher education, the ATEC could play an important role in coordinating a national system of credit transfer and RPL. The ATEC could manage standards for credit processes and data collection, coordinating any potential pilots that expand uptake of credit software platforms. While education providers will continue to have autonomy over their credit and RPL decisions, the ATEC could use each provider's credit data to better understand potential inconsistencies in credit and RPL decisions, both within and across providers.

One of the ATEC's proposed functions is to implement and negotiate mission based compacts (DoE 2025g, p. 1) – agreements between the Australian Government and each university that outline the latter's mission and priority areas. These compacts will be important for formalising an institution's contribution to meeting national education targets and skills needs (O'Kane et al. 2024, p. 236). Improving data collection and processes in credit and RPL decisions could be an important component of each university's mission based compact. In discussions about the compact, the ATEC could highlight and question any inconsistencies in a university's credit and RPL processes (such as institutions who operate in both the VET and higher education sectors granting credit for a VET subject at their own institution, but not at comparable providers).

Technology could help streamline credit and RPL processes

Similarities matrices – tools used to measure the similarity of two items – could be developed across courses to help with credit transfer. Natural language processing could also identify comparable courses across institutions or map learning outcomes across qualifications frameworks (box 2.6). JSA is using these modelling techniques to identify similarities between university curriculum data and skills listed in the Australian Skills Classification (O'Kane et al. 2024, p. 89). This approach could be expanded to assist credit

databases, and strengthened by the introduction of a National Skills Taxonomy – a common language used to describe skills that aims to better connect the education and employment sectors (JSA 2024e, p. 2).

Several participants noted the potential for AI and other technologies to help credit and RPL processes,[44] with multiple examples of projects already underway.

- TAFE Queensland has trialled the use of generative AI to support various administrative processes involved in RPL assessment, streamlining the production of RPL documents (TDA, sub. 71).
- Bendigo Kangan Institute is leading a government-funded pilot project to build an AI-powered RPL tool to streamline RPL processes and improve access to skills recognition (BKI, sub. 99).

However, other submissions raised the risks of using AI to improve digital processes. These participants suggested that AI-supported systems can have biases, threaten data sovereignty, and be unreliable, particularly when a nuanced interpretation is needed (ARIIA, sub. 114; Wendy Cato, sub. 53).

Box 2.6 – The European Union experience of credit transfers and mutual recognition

The European Credit Transfer and Accumulation System (ECTS) is a standardised framework adopted across the European Higher Education Area (EHEA) to support recognition and transfer of credits. The ECTS is aligned with the European Skills, Competences, Qualifications and Occupations (ESCO) taxonomy, enabling learning outcomes to be expressed in terms of recognised skills and competencies.

While implementation of ECTS is voluntary, 40 of 48 EHEA countries require the use of its Users' Guide principles in their systems (EECEA 2024, pp. 65–66). But system-level automatic recognition of qualifications operates in only about a third of these countries (EECEA 2024, p. 91).

The European Commission has introduced pilot projects using machine learning to automate mapping of learning outcomes to ESCO skills across languages and qualification frameworks. The project has concluded that 'an approach combining artificial intelligence and human intervention is the most suited method to link learning outcomes of qualifications with labour market terminology' (EC 2021). The linking exercise has successfully expanded to capture several hundred qualifications in many languages, although it is still time consuming due to the need to validate the results (EC 2022).

The government could prioritise credit and RPL reform in high-priority education pathways

Government reform would have a bigger impact if it targeted education pathways that are more common, have high expected future demand, and have known problems with credit and RPL. New initiatives – such as RPL toolkits or investigating inconsistencies in awarding credit – could be prioritised in these areas.

Almost half of all employment growth over the next decade is projected to occur in the three largest service industries: health care and social assistance; professional scientific and technical services; and education and training (JSA 2025a, p. 73). Improving credit transfer and RPL in specific areas of these sectors could have substantial benefits in upskilling the future workforce. For example, the care economy has experienced rapid growth that is expected to continue (PM&C 2023, p. 8), with 12% of the population providing informal

[44] RMIT University, sub. 95; SA Skills Commission, sub. 226; SkillsIQ, sub. 131; TDA, sub. 71; UA, sub. 166.

care in 2022 (AIHW 2025). Ensuring carers have their skills effectively recognised in order to support the future care workforce could be a priority for credit and RPL reform.

Reform could also be prioritised in common VET-to-higher-education pathways (discussed above), ensuring that consistent credit recognition benefits many students. Improving credit recognition across common pathways would reduce education costs and enable students to enter the workforce faster, potentially encouraging more people to pursue further study.

3. Boosting work-related training to build skills and adaptability

Summary

- **Work-related training is a key form of lifelong learning that can boost productivity and create a more adaptable workforce, but Australia's participation rates are low and have stagnated for two decades.**
  - Most training is employer funded, and participation is relatively low in small and medium enterprises (SMEs), which employ most Australian workers.
  - Women, Aboriginal and Torres Strait Islander people, and recently arrived migrants are most likely to have unmet demand for training.
  - Major barriers to increasing training include misaligned incentives, time and cost constraints, a lack of training culture, limited flexible training options and information gaps.
- **Financial incentives with advisory supports can increase training rates in SMEs, but they need to be carefully designed and tested to avoid subsidising training that would happen anyway.**
  - Targeting SMEs, ensuring training is high quality and requiring co-payments from participating firms can help to maximise productivity benefits and reduce the risk of waste.
  - Advisory supports to help SMEs identify skill needs and access high-quality, flexible training options can increase uptake and value for money.
- **The evidence on what works to increase training is thin, so new measures to support training should be piloted and rigorously evaluated to gather information about their impact and cost.**
  - A pilot program with evaluation would contain costs, encourage informed risk-taking in policy design and build a credible evidence base for future expansion.
  - A randomised controlled trial is the preferred option for evaluating the pilot.

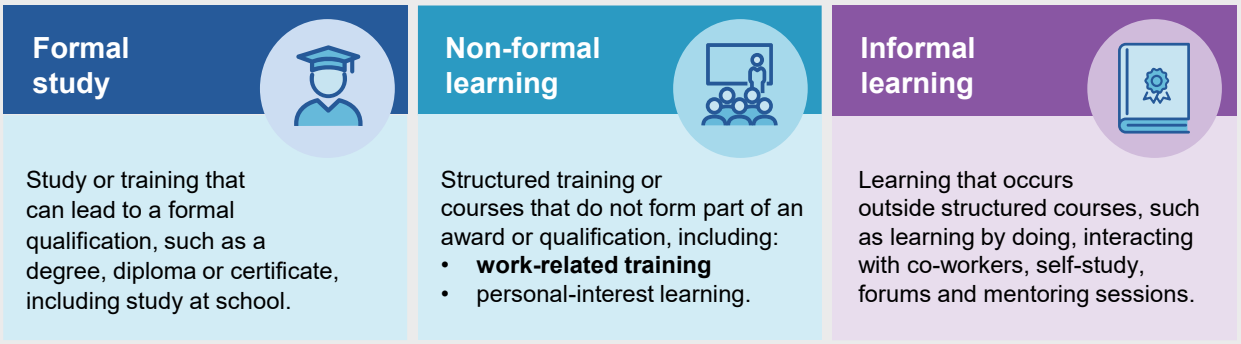
Australia's low training rates are a missed opportunity

Work-related training is a key form of lifelong learning

Work-related training, which is structured training that does not lead to a formal qualification (box 3.1), is a key component of lifelong learning. High-quality training can enhance productivity and wages (Almeida and Carneiro 2009; Dearden et al. 2006; Konings and Vanormelingen 2015; Morikawa 2021), while simultaneously addressing skill shortages and creating a more adaptable workforce. Work-related training is the primary mode of learning for mid-career workers: in 2021, 28% of 25-to-64 year-olds participated in training in the last 12 months, compared with 13% who participated in formal learning (ABS 2022b). In 2023, 54% of employers provided work-related training to employees in the last 12 months (NCVER 2023, table 1).

Box 3.1 – What is work-related training?

Work-related training (also called non-formal learning or unaccredited training) is structured learning that does not form part of a qualification. Examples include short courses on improving management practices, workshops to learn digital skills, or other professionally relevant training, whether done at the workplace or not. Work-related training is distinct both from formal study that confers a qualification like a diploma or degree (chapter 2) and from informal learning, which includes unstructured on-the-job learning. Apprenticeships (chapter 4) combine formal study with informal on-the-job learning and are not usually included in the definition of work-related training.



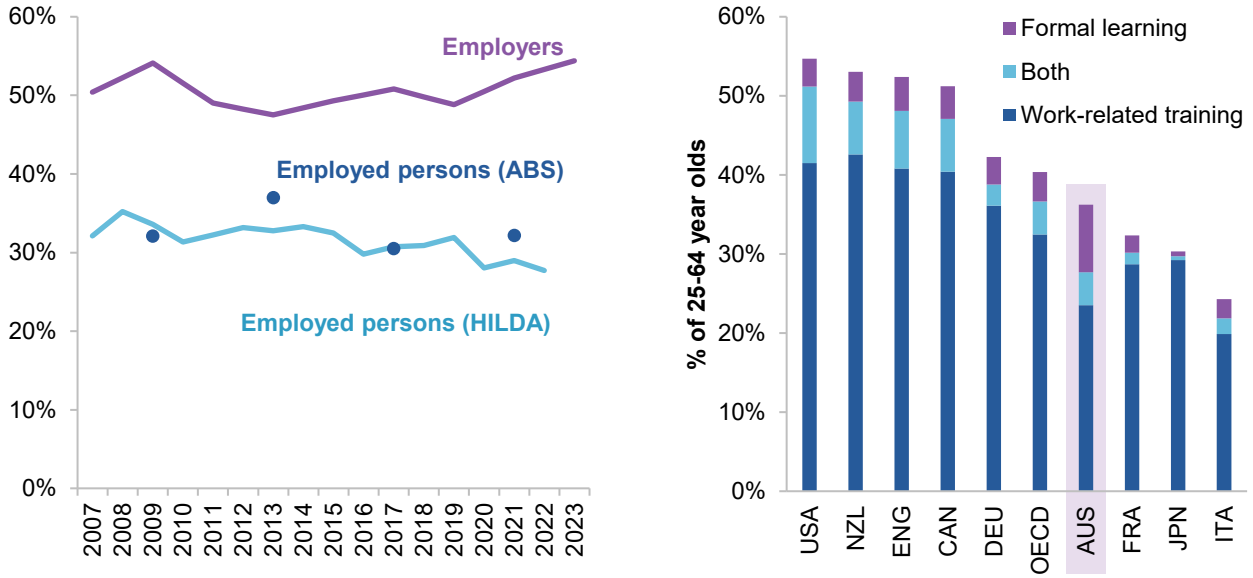
Source: ABS (2022a); OECD (2021, p. 23); Misko (2008, p. 16); White et al. (2018, p. 8).

High-quality training can increase productivity in many ways. First, individuals gain firm-specific and/or broader skills that make them more productive (De Grip and Sauermann 2012; Ferreira et al. 2017; Prada et al. 2019). Some studies have found that training increases job satisfaction, improves job match quality and decreases employee turnover (Dietz and Zwick 2021; Jones et al. 2009; Obst 2022; Zhang et al. 2021). Second, training can have spillover effects within firms when trained workers pass on knowledge and skills to untrained workers (De Grip and Sauermann 2012, p. 378; Prada et al. 2019, pp. 19–20). Training is also associated with increased innovation at the firm level (Bauernschuster et al. 2009; Dostie 2018). Finally, training can boost productivity across firms and the economy. It increases adaptability by offsetting skill obsolescence from technological change and shifts in labour demand (Andrews et al. 2024, pp. 28–31). Upskilling and reskilling will become even more critical as artificial intelligence changes jobs (JSA 2025g, p. 8).

Worker participation in work-related training in Australia is low and has stagnated over the last two decades (figure 3.1).[45] The latest estimates from the ABS show that a third of workers took part in work-related training in the last 12 months. While employer use of work-related training has increased slightly since 2019, Australia's training rates are still low compared with other major economies. The percentage of adults engaging in formal education in Australia is above the OECD average, but work-related training rates are much lower: about 45–50% of adults in the United States, New Zealand, England and Canada participate in work-related training but fewer than 30% of adults in Australia participate (figure 3.1). Many participants in this inquiry highlighted concerns about low or falling rates of work-related training.[46]

[45] Data on work-related training in Australia is limited; this chapter uses three main surveys. The ABS Work-Related Training and Adult Learning survey (every three years) and the Household Income and Labour Dynamics in Australia (HILDA) survey (annual) provide data on individuals' participation in training. NCVER's Survey of Employer Use and Views of the VET System is a biennial employer survey about use of unaccredited training (among other things).
[46] ACTU, sub. 209; AHRI, sub. 130; AMWU, sub. 122; CEDA, sub. 104; SVA, sub. 156.

Figure 3.1 – Australia's work-related training rates have stagnated and are low by international standards



Panel A: percentage of employed persons who participated in work-related training in the last 12 months (including employer- and self-funded training). Employers is the percentage of employers providing unaccredited training to employees in the last 12 months. Panel B: percentage of individuals who participated in any work-related training and/or formal learning in the last 12 months (including employer- and self-funded training and education). Australian data is for 2020-21; all other countries 2023.

Sources: ABS (2022b); HILDA data from CEDA (2024, figure 4); NCVER (2023, table 1); OECD (2025, figure 1.2).

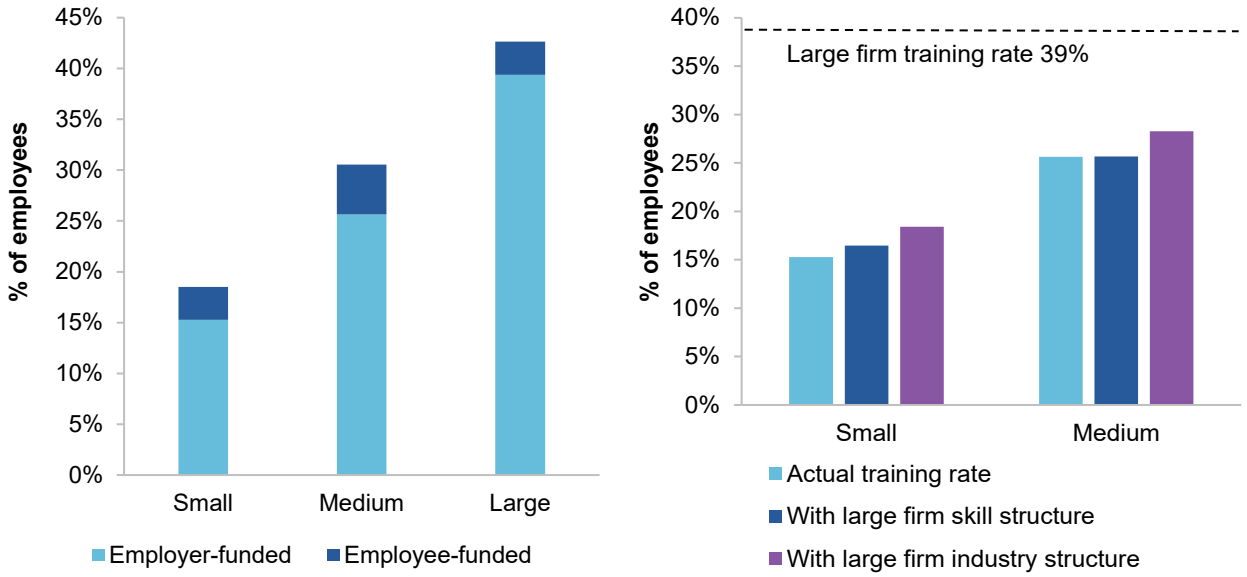
Most work-related training is employer funded: among employees who did training in the last year, 91% did not incur a cost. Employer-funded training is 2.8 times more likely than employee-funded training to be done during working hours only; in other words, employers generally pay for training both in the time cost of losing work hours and through course fees. The main reason employees undertook training was to increase skills in their current job or because it was compulsory. Employees whose training was paid for by their employers were half as likely to say they undertook training to improve job prospects as were those who paid for their own training. In total, 90% of 25-to-64 year-olds undertaking work-related training were employees, 8% were employers or own account workers and 2% were not employed (ABS 2022b).

Participation in training is concentrated among larger businesses

Employees in small and medium enterprises (SMEs) are far less likely to participate in training than those in larger firms. Most of the difference is due to low rates of employer-funded training in smaller firms. Productivity Commission analysis shows that very little of the difference in training rates between SMEs and larger firms is due to differences in the industry or skill mix of employment. Even if SMEs had the same industry or skill mix as larger firms, the training gap between SMEs and larger firms would still be substantial (figure 3.2). In 2020-21, sole traders and SMEs together accounted for two-thirds of all employment in Australia (ABS 2021c table 13a, 2025a table 1, DO007).

Figure 3.2 – The skill and industry mix of employment only partly explains lower training rates in SMEs

% of employees participating in employer-funded work-related training



Small firms have 0–19 employees, medium firms 20–99 employees and large firms 100+ employees. 'With large firm skill structure' assumes that SMEs have the same composition of employment by skill level as large firms, but the same rates of employer-funded training by skill level as their actual training rate. 'With large firm industry structure' assumes that SMEs have the same composition of employment by industry as large firms, but the same rates of employer-funded training by industry as their actual training rate (appendix C, section C.3).

Source: PC analysis of data from ABS (2022b).

Employer data shows similar patterns. SMEs are less likely to engage in work-related training than larger businesses: around half of small employers used work-related training in the last year, compared with 67% of medium-sized employers and 80% of large employers.[47] SMEs are more likely to rely on industry or professional associations, or equipment/product suppliers to provide training, while larger firms are more likely than SMEs to provide training internally rather than use external training providers (NCVER 2023).

Market failures mean firms and workers underinvest in training

Skill development offers clear benefits to businesses and individuals, but both may invest less in training than is optimal for productivity growth (Richardson 2007, pp. 17–18). Underinvestment in training may have many causes, including information gaps, misalignment of incentives and the possibility of externalities (figure 3.3). The type of skills delivered through training also has an influence on incentives. Transferable skills are valuable to workers because they enhance employability, but employers are more likely to favour firm-specific skills: investing in transferable skills increases the risk of poaching and reduces firms' bargaining power over the productivity gains from training (Smits 2007, pp. 654–655, 661–662).

[47] Small employers have 1–9 employees, medium 10–99 employees and large 100 or more employees (NCVER 2023).

Figure 3.3 – What drives underinvestment in training?

Sources: Acemoglu (1997); Acemoglu and Pischke (1998); Becker (1964); Caliendo et al. (2022); Dillon et al. (2025); Stevens (1996).

Time, cost and lack of demand are the main barriers to training

About 10% of employers do not engage in any formal, non-formal or informal training activities (NCVER 2023, table 1), while 68% of the working-age population is neither participating in nor seeking work-related training, suggesting a substantial cohort of disengaged individuals (ABS 2022b). For both employers and individuals, lack of demand is a significant barrier to training, suggesting that for many the private costs outweigh the anticipated private benefits of training. The OECD (2019, p. 40) has highlighted that in Australia 'low willingness to train is by far the most significant barrier to adult learning for individuals'.

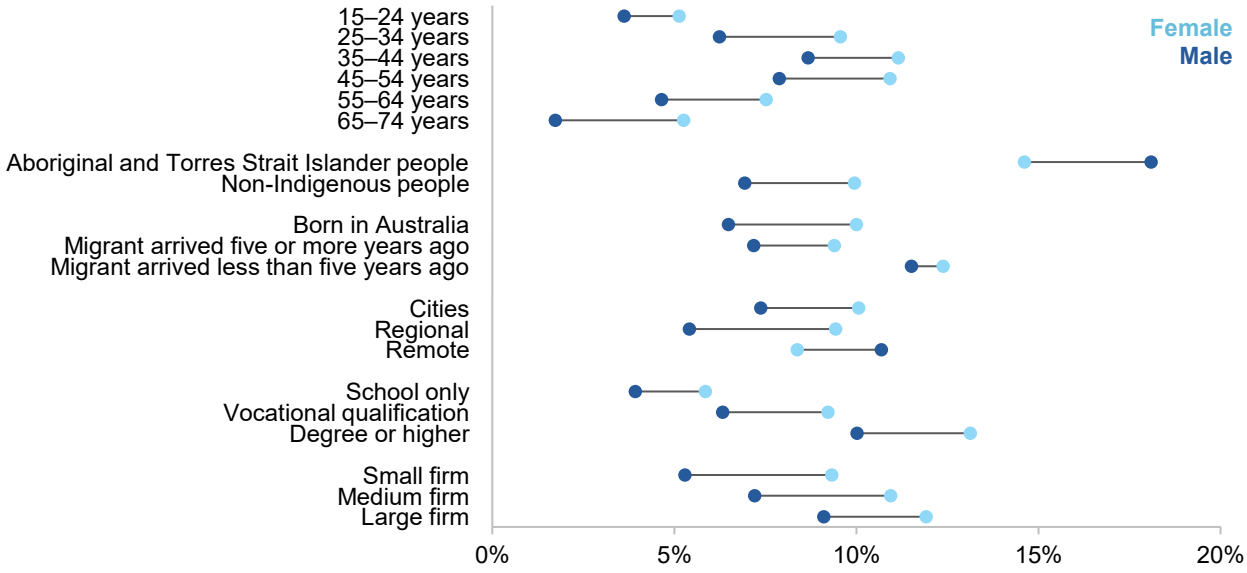
Disengagement from training is particularly pronounced among older workers and those with lower levels of educational attainment, as well as in SMEs (ABS 2022b). A lack of training culture and demand is evident in small firms, which are less likely than their larger counterparts to provide training in response to skill shortages (although SMEs are also less likely to report skill shortages than larger businesses) (ABS 2023).

About 9% of 25-to-64 year-olds would like to do more training, but face barriers preventing them from doing so. This group includes people who are not currently engaged in training and those that are already doing training but want to do more. Unmet demand for training is greater for women than for men and increases with education and firm size. Two groups have notably high rates of unmet demand: Aboriginal and Torres Strait Islander people[48] and recently arrived migrants (figure 3.4).

[48] Data for Aboriginal and Torres Strait Islander people is from the 2014-15 National Aboriginal and Torres Strait Islander Social Survey, the most recently-available data on training for this population (ABS 2016b). While the estimates may not be directly comparable to other estimates in figure 3.4, they show very large unmet demand for training among Aboriginal and Torres Strait Islander people.

Figure 3.4 – Women have greater unmet demand for training than men

% of 25-to-64 year-olds who want to do more non-formal learning



All estimates are for 25-to-64 year-olds except age categories. School only includes people whose highest educational attainment is year 12 or below; vocational is certificate or diploma; degree or higher is bachelor degree or postgraduate qualification. Small firms have 0–19 employees, medium firms 20–99 employees and large firms 100+ employees.

Sources: ABS (2022b) except estimates for Aboriginal and Torres Strait Islander people which use ABS (2016b).

Time is the main barrier to training: 40% of 25-to-64 year-olds who want to train more cite either a lack of time or too much work as the main barrier, twice the share who cite financial reasons. One in 10 say lack of available courses is the main barrier; a similar share cites personal reasons. Barriers differ across groups:

- women are more likely than men to cite financial or personal reasons as the main barriers to training, and are less likely to report time barriers[49]
- Aboriginal and Torres Strait Islander people are twice as likely as non-Indigenous people to cite personal reasons, and six times more likely to say that lack of employer support is the main barrier to training
- financial and personal reasons are greater barriers for people in the lowest income households (ABS 2016b, 2022b).

Time and financial constraints are also major barriers to training for employers. They report that employees are too busy to provide or engage in training, and that managers lack time to organise it: 41% of employers who want to provide more training cite time pressures as the main barrier. Employers also cite a lack of funds for training (38%), but relatively few seem worried about trained employees being poached: only 3% say it is the main reason they do not engage in more training (Smith et al. 2017, table D47). This is consistent with feedback received through this inquiry: many participants cited time and cost as barriers to work-related training (PC 2025b).

SMEs face higher barriers and disincentives to providing training than larger businesses. While large businesses can benefit from economies of scale and tailored training, the greater liquidity and credit constraints of SMEs reduce their opportunities to provide training (Bakhtiari et al. 2020; Shah 2017, p. 22). These constraints may be particularly acute for micro-businesses, which make up most of Australia's large

[49] This is partly because time barriers increase with working hours, and women are more likely than men to work part-time or be out of the labour force.

and diverse cohort of SMEs (figure 3.5). SMEs also face greater risks from poaching than larger businesses, which can offer more competitive employment conditions and advancement opportunities (CEDEFOP 2024, p. 26). These risks are more acute when work-related training boosts general skills (which are more transferable among different firms), as opposed to firm-specific skills.

Figure 3.5 – Australian SMEs are diverse and most are micro-businesses

Micro-businesses include sole traders. Top three industries (by 3-digit ANZSIC code) by number of firms of each size.
Source: PC estimates from ABS *Counts of Australian Businesses* (2025b).

Inquiry participants noted management and capability gaps, such as inadequate leadership practices and an inability to recognise skill needs or existing training opportunities. They also pointed to limited government support for flexible training options and the complexity of the training system, which leaves many employers unsure where to seek advice or find suitable training opportunities.[50]

Several participants raised concerns that compliance training, such as occupational health and safety training, can crowd out more productive types of training.[51]

> Training is not homogenous and different types of training are likely to produce markedly different returns for organisations and individuals. For instance, annual compliance activities may fall within the technical definition of work-related training but are likely to have less impact on firm productivity than training that supports more substantive skills development. (CEDA, sub. 104, p. 1)

In 2023, 31% of employers said that they provided training to meet legislative, regulatory or licensing requirements, and 44% to meet and maintain professional or industry standards (employers could choose more than one reason for training) (NCVER 2023, table 19).[52]

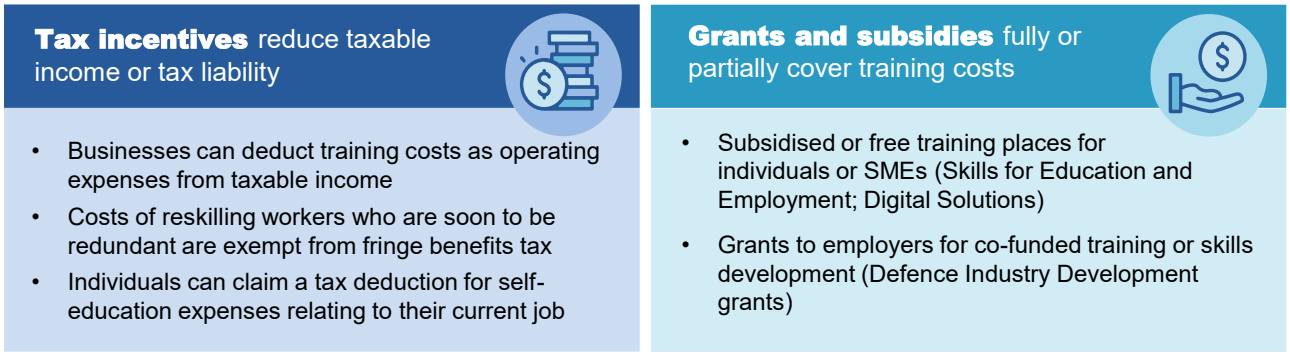
Recent government support for training has had mixed results

Previous government programs to support work-related training have often been short-term and ad hoc, and few have been formally evaluated. Current Australian Government support for work-related training includes tax deductions and some small and narrowly targeted subsidies or grants, such as the Skills for Education and Employment program that focuses on foundational skills, or the Digital Solutions program that provides

[50] AHRI, sub. 130; ARIIA, sub. 114; CET, sub. 103; CPA Australia, sub. 137; RMIT University, sub. 95; Xero, sub. 89.
[51] CEDA, sub. 104; CET, sub. 103, Attachment A; SkillsIQ, sub. 131.
[52] The most common reason for training was 'to provide the skills required for the job' (69%). The share of employers reporting compliance activities as a reason for providing training has increased steadily since 2005, but the share of employers reporting other reasons for training has also increased over the same period, so it is not clear that the growth in compliance training is at the expense of other training (NCVER 2023, table 19).

free short workshops and webinars for small business owners (figure 3.6). These programs have no public evaluation assessing their impact on training participation or economic outcomes.[53] State and territory government grant and subsidy programs also support work-related training; these include Victorian Digital Jobs, Queensland Tourism Business Digital Adaption Program, Northern Territory Workforce Program and the Tasmanian Rapid Response Skills Initiative (Jobs Tasmania 2022; Northern Territory Government 2025; Queensland Government 2024c; Victorian Government 2025).

Figure 3.6 – Current Australian Government support for work-related training



Sources: ATO (2023, 2024, 2025a); Australian Government (2024); Commonwealth of Australia (2025a); DEWR (2025d).

Other recent Australian Government programs to support work-related training have had mixed results or have not been formally evaluated.

- **Skills and Training Incentive** (2019 to 2024) provided individuals over the age of 40 and at risk of entering an income support system with up to $2,200 towards training linked to an occupation in national shortage or of national priority. Employees or employers could fund the remaining costs. An evaluation found that the co-contribution model was effective in inducing participants to complete training, but it also subsidised some training that employers would have done anyway, and it did not adequately support participants who could not afford the upfront payment (Commonwealth of Australia 2024, p. 239; DEWR 2022, pp. 45–46, 2023b).
- **Small Business Skills and Training Boost** (2022 to 2024) provided SMEs with an additional 20% tax deduction (on top of existing tax deductions for training expenses) for work-related training courses delivered by a registered training organisation (ATO 2025b). The measure has not been evaluated, but 40,000 businesses claimed the deduction in 2022-23.[54] Possible reasons for relatively low take-up in the first year include delays in legislating the measure[55] that reduced awareness of it among businesses, and the requirement that registered providers conduct the training. Awareness and participation may have been higher in the second year of operation, but data on participation in 2023-24 will not be available until mid-2026. The program has been discontinued.

[53] An earlier version of the foundational skills program aimed at unemployed job seekers was evaluated in 2015 (ACIL Allen Consulting 2015).

[54] PC estimates using ATO (2025c).

[55] *Treasury Laws Amendment (2022 Measures No. 4) Act 2023* gained assent on 23 June 2023, one week before the end of the financial year in which the bonus could be claimed by businesses (Parliament of Australia 2023).

Financial incentives with advice can help SMEs develop a culture of training

Well-designed financial incentives for firms can increase training

Because employers fund most work-related training in Australia (ABS 2022b), ensuring they have the right incentives to invest in training is vital for boosting training rates (OECD 2017, p. 73). Public subsidies of employer training can in-principle be justified by the presence of uncompensated positive externalities from training. They can also lower the cost of training, tackle time and credit constraints, and address concerns that other firms will poach trained employees – all barriers that deter firms from investing in training even when they benefit in the longer term. Targeting interventions at employers increases the chance that additional training will meet current labour market needs, but also that it will generate firm-specific rather than transferable skills (OECD 2017, section 2.3).

Each type of financial incentive that governments can use to encourage employers to invest in work-related training has advantages and disadvantages (figure 3.7).

Figure 3.7 – Financial incentives for firms to encourage work-related training

	Advantages	Disadvantages
Training subsidies Grants, vouchers or subsidised courses	• Easy to target to training or firms • Address upfront cost barriers	• Administrative burden • Public financial cost • Potentially small net gain in training
Tax incentives Deductions or credits for training costs	• Low administrative costs • Businesses have flexibility to choose training	• Hard to target specific training • Hard to predict take-up (and cost) • Do not alleviate upfront cost • Public financial cost • Potentially small net gain in training
Levy-grant schemes Employer levies are pooled for grants	• Low public financial cost • Address poaching concerns • Incentivise employer training to get contributions back • Easy to target to training or firms	• Cost burden on employers • Administrative burden • Reduce employer training discretion • Potentially small net gain in training
Train-or-pay schemes Employers who do not train must pay levy	• Low public financial cost • Address poaching concerns • Incentivise employer training to avoid levy • Lower administrative burden	• Cost burden on employers • Can result in reduced training effort to levy threshold • Can reduce quality of training • Potentially small net gain in training

Other (more rarely used) incentives to encourage employer training include payback clauses (contractual arrangements where employees must pay back training costs if they leave a job after doing employer-sponsored training), job rotation (subsidised wages for employers to engage unemployed people to fill in for employees on training leave), loans to finance training and making public procurement conditional on suppliers undertaking training.

Source: Black et al. (2023, sect. 6); CEDEFOP (2009); OECD (2017, ch. 2); Torres (2012).

Existing research shows that financial incentives can increase employer training (Martins 2021, pp. 5–6; Muller and Behringer 2012, pp. 16–17, 37), but evidence on cost-effectiveness and productivity impact is mixed, with concerns about waste and administrative costs (Almeida and Cho 2012; Muller and Behringer 2012, pp. 40–43). The evidence is not clear that one type of incentive is inherently better than others at increasing training, but some key lessons can be drawn from the literature to help design more effective interventions.

- **The net gain in training can be low.** All financial incentives risk subsidising training that would have occurred anyway, undermining the cost-effectiveness of programs. Some previous studies have found that financial incentives resulted in very little additional training (Abramovsky et al. 2011, p. 157; Hidalgo et al. 2014; Schwerdt et al. 2012, pp. 582–583).
- **Targeting reduces waste but increases administrative burden**. Targeting firms less likely to train without support (such as SMEs) can increase the chances of a net gain in training but it can also raise administrative costs and therefore deter participation. Tax incentives are the simplest incentive to implement as they can build on existing tax infrastructure, but they are difficult to target. Subsidy programs are easier to target; voucher schemes are typically less administratively burdensome for recipients than grants (Almeida and Cho 2012, p. 120; OECD 2017, pp. 73–74; Schwerdt et al. 2012, pp. 580–581).
- **Co-payments can increase effectiveness**. Requiring firms to contribute to training costs can make subsidies more effective by ensuring firms have a financial stake in training outcomes and encouraging them to invest in programs that align with their workforce needs (Almeida and Cho 2012, pp. 122–124; BIS 2013, pp. 13–14).
- **Employers need flexibility to choose training, but some limits are desirable**. Schemes should be flexible enough to allow businesses to tailor training to their needs but avoid subsidising compliance-driven or low-value training (OECD 2017, p. 74).
- **Financial incentives work better with support services**. Firms often face non-financial barriers such as time constraints or uncertainty about training benefits or quality. Wraparound supports, such as advisory services or streamlined access to training providers, can improve the uptake and impact of financial incentives (Muller and Behringer 2012, pp. 9–10; OECD 2017, pp. 118–119).

The government should pilot training vouchers for SMEs

Based on the existing evidence, the PC sees merit in using training vouchers for employers as a targeted mechanism to encourage SMEs to provide more training. However, before the Australian Government embarks on a large-scale program, the PC recommends that it carefully designs a pilot to gather information and rigorously evaluate the impacts and benefits of programs to support training. This approach would contain costs, encourage informed risk-taking in policy design and build a credible evidence base for future expansion.

A pilot would also help policymakers understand the value of any increased training (box 3.2). The literature on the impacts of training on productivity generally shows positive effects, but the results vary significantly. It is possible that the cost of any intervention will be greater than the benefits to SMEs and their employees.

There was wide support among inquiry participants for the use of financial incentives such as subsidies and tax incentives to encourage employers to train workers.[56] However, some unions opposed providing incentives to employers, arguing that previous subsidy and tax incentives had failed to deliver behavioural changes, rewarded employers who invested less in training and risked subsidising training that was already

[56] AAPi, sub. 106; ACN, sub. 194; ACU, sub. 170; AGWA, sub. 100; AHRI, sub. 130; ARA & NRA, sub. 184; ATN Universities, sub. 160; CET, sub. 103; COSBOA, sub. 124; CPA Australia, sub. 137; Institute of Public Accountants, sub. 155; TVET Global, sub. 123.

happening (ACTU, sub. 209; AMWU, sub. 122). These participants argued, instead, for a training levy modelled on the Training Guarantee (box 3.3).

Poaching or employee turnover – the main justification for a train-or-pay levy – does not appear to be a major concern for businesses when making decisions about work-related training. Moreover, many levy schemes (including the Training Guarantee) explicitly exclude small firms, probably because of the administrative burden to firms and government (this may be on equity or efficiency grounds (Ziderman 2016, p. 14)). As a result, levies do not reach the firms that train the least. Therefore, the PC is not recommending a train-or-pay levy.

Box 3.2 – How much could training lift productivity in SMEs?

The PC could not identify any Australian data sources that would allow a direct estimate of the effect of work-related training on productivity in firms. Yet the results of several international studies provide some evidence on the likely impacts (Colombo and Stanca 2014; Konings and Vanormelingen 2015; Liu and Lu 2016; Zwick 2002).

Using these estimates, increasing work-related training in small firms (less than 20 employees) to the level of medium firms (20 to 99 employees) would increase labour productivity in small firms by around 3%. This is the median impact based on previous studies, although the individual estimates vary considerably from 1% to 16% (appendix C, section C.3).

The impact of training on productivity is likely to vary across firm types. Impacts are typically higher for service or non-manufacturing firms than for manufacturing firms (Colombo and Stanca 2014; Dearden et al. 2006; Konings and Vanormelingen 2015; Morikawa 2021).

Because the estimates do not capture how increased training improves productivity across firms (by increasing innovation or enabling worker reallocation across industries, for example), they are likely to underestimate the macroeconomic effects of increasing training in SMEs.

Requiring co-payment and targeting SMEs reduces the risk of waste

Support for training should focus on SMEs, where training rates are lowest and barriers to training highest (OECD 2017, p. 75). SMEs may lack the time or capability to identify skill needs and understand what training is available. Targeting SMEs can also help reduce the risk that support goes to businesses that would provide training anyway. Several studies have found that smaller firms are more likely than larger firms to undertake *additional* training in response to financial incentives (Konings and Putseys 2025; Muller and Behringer 2012, p. 14).

A voucher should cover only part of the training cost, since both businesses and employees receive a direct benefit from training in the form of higher productivity and wages. Many inquiry participants proposed employer co-payment for training subsidies (PC 2025b). Other programs have successfully used variable co-payments to target specific firms or types of training, for example, Australia's Industry Skills Fund (ACIL Allen Consulting 2017) and Ireland's Skillnets (BIS 2013, p. 94).

Box 3.3 – Levies have been used to encourage training in Australia and overseas

'Train-or-pay' levies mandate minimum expenditure on work-related training but have mixed success, particularly for small employers (Dar and Whitehead 2003, pp. 6–7; Smith and Billett 2004, pp. 45–46, 2005, p. 24). Their main advantage is that they address the free rider problem by forcing businesses to provide work-related training, or pay a levy (Snower and Booth 1996, p. 345).

The most prominent train-or-pay levy scheme in Australia was the Training Guarantee (1990 to 1994), which required employers above a certain size to spend 1–1.5% of their payroll on structured training, or pay an equivalent levy to the Australian Taxation Office (Teicher 1995, p. 107). An evaluation found the Training Guarantee raised awareness and training expenditure in many firms and was cost-effective for the Commonwealth, but compliance costs for businesses were higher than intended (Fraser 1996, p. vi).

Ultimately the Training Guarantee lacked support from business and failed to instil a culture of training. This was because its design had serious shortcomings. It focused on measured inputs (spending) rather than outcomes. Firms were rewarded if they restructured existing informal training activity to meet the policy's requirements, without necessarily improving skills. Large firms increased investment in training, but the average number of hours spent training declined (Teicher 1995, pp. 108–111).

Smaller firms from industries with a poor training culture often struggled to meet training obligations (Fraser 1996, p. 14). Many small firms unfamiliar with purchasing external training reported 'a proliferation of poor-quality, opportunistic private training consultants whose offerings bore little relevance to [their] needs' (Fraser 1996, p. 15). Smaller firms also continued to struggle to release employees for training, due to operational requirements and other barriers not addressed by the levy (Teicher 1995, pp. 109–111). The smallest firms were excluded from the levy requirements and therefore did not benefit from training offered under the scheme.

Industry training funds have proved to be more enduring in industries like construction, where high worker mobility increases free rider concerns and discourages firms from investing. These funds are rarely publicly evaluated. In *Towards Levyathan*, the PC (2023d) found that levies are often an inefficient way to raise revenue and can unduly complicate the tax system.

Some overseas training schemes funded by employer levies work like subsidies in the way they dispense training funds but are financed from a dedicated revenue stream rather than general taxation. While the idea of dedicated funds for training is attractive in principle, they can face the same design issues as other financial incentives like subsidies. For example, Ireland's National Training Fund funds work-related training as well as training for the unemployed and volunteers. Reviews have found a persistent and growing surplus, pointing to a shortfall in delivery of training, especially for those already employed. Employer awareness of the National Training Fund is low (especially among SMEs) and incentives for firms to invest in work-related training under the scheme are poor (OECD 2023a; Office of the Comptroller and Auditor General 2023, pp. 286, 290).[a]

a. Another international example is the United Kingdom's Apprenticeship Levy, a use-it-or-lose-it account in which funds expire after 24 months. This is less relevant for this chapter as it funds apprenticeships rather than short work-related training courses.

Better advice would narrow information gaps and increase uptake

Vouchers to encourage training should be accompanied by advice for SMEs to build a culture of training and overcome information gaps about the availability and benefits of training.

Because markets for training advice are thin and affected by information asymmetries, SMEs often need information and support to use financial incentives and to overcome non-financial barriers to training (CEDEFOP 2024, p. 17; OECD 2017, pp. 109–110). SMEs, especially those without in-house human resources support, can lack the administrative capacity to assess skills needs (OECD 2024, pp. 32–33), and may struggle to assess the quality and value of advice. SMEs might not see external courses as useful because they lack flexibility or a clear focus on their needs (Dawe and Nguyen 2007, p. 7). Business advisers may have weak incentives to invest in high-quality skills diagnostic work they cannot fully monetise.

International quasi-experimental evidence (for example, Mexico's CIMO[57] program and the training cheque for SMEs in North Rhine-Westphalia in Germany)[58] suggests that targeted advisory support for SMEs, when combined with subsidised training can modestly increase employers' investment in workforce training (Görlitz 2010; Tan and Lopez Acevedo 2005).

Advice could include a short consultation to help firms diagnose skills gaps and plan training, online industry-specific workforce planning templates and guidance and publishing a list of high-quality courses. An initial co-funded consultation would help firms produce a six- to 12-month workforce development plan, with the option to pay for follow-ups. Support from the Australian Government should focus on getting SMEs on the path towards greater investment in their workforce development; ongoing subsidised advisory support would likely have diminishing returns.

Targeted, one-to-one advice that diagnoses needs and co-designs a training plan can address gaps in knowledge, managerial capacity and time to identify useful training opportunities (CEDEFOP 2024, pp. 26–27, 56–58). The Industry Skills Fund, in operation from 2015 to 2016, combined co-funded training grants with tailored advice to help businesses identify skill needs and training opportunities. Participating businesses were overwhelmingly satisfied with the advice received from skills advisors, and more than 80% agreed that it was a vital part of their decision to apply for a training grant. Skills advisers helped businesses make more strategic, long-term decisions about training rather than simply addressing immediate needs (ACIL Allen Consulting 2017, pp. 26, 37).

Australian, state and territory governments already provide SMEs with a range of mentoring and advisory supports, but most focus on the fundamentals of owning and operating a business and the skill development offered is generic rather than tailored (Commonwealth of Australia 2025b). Australia's business advisory program landscape is broad but under-evaluated, with a 2021 analysis finding only four public, rigorous evaluations from a sample of 58 government-supported business advisory programs (Agarwal et al. 2021b, p. 20).[59] Nevertheless, the existence of these programs shows that that the infrastructure required to provide SME advisory services exists. Advisory services for SMEs could be delivered by adjusting or expanding the functions of one or more of these institutions to incorporate work-related training advice.

[57] CIMO is *Programa de Calidad Integral y Modernización* (Program of Comprehensive Quality and Modernisation).

[58] While not directly applicable, there is extensive causal evidence from sectoral training programs for individuals (such as Project Quest in the United States) that highlights significant long-term gains in employment outcomes from individuals who participated in a program with advisory support and tuition funding (Roder and Elliott 2024).

[59] The same review also found that international business advisory programs that have published evaluations may be subject to selection bias as they generally meet all their objectives, meaning there are few examples of evaluations of poor performing advisory programs to learn from (Agarwal et al. 2021a).

Several factors should be considered when designing and implementing advisory support for training.

- Coordination with state and territory governments would be desirable at an early stage of program design to share costs and avoid duplication.
- Too much variation in the quality of advice could influence the outcomes of the program. Advisors should be vetted carefully to ensure consistent quality, and to mitigate the risk of uneven treatment, templates for training plans should follow a standardised format based on best practice use by other firms.
- Equity and access to the program should be carefully considered, especially in regional areas, where training markets are thin. Advisory services should ideally be offered online to encourage greater access, but program managers could consider offering additional support for regional firms to access training.
- As advisory materials are developed or as firms share feedback on training, information should be made public wherever possible to enable other firms to benefit. Information is scarce at present to help firms identify high-quality training materials (BCA, sub. 67) and firms may also lack tools to help them measure the return on training investments (CEDA, sub. 104).[60]

Online delivery of advisory support enables better access and cheaper service delivery. Recent programs have run through online portals: for example, Australian Small Business Advisory Services Digital Solutions offer up to four hours of one-on-one digital advice to small businesses, and develop online resources such as videos (Australian Government 2024; Tasmanian Government 2025).

Many inquiry participants argued that advisory support for SMEs was valuable for overcoming information gaps and increasing training rates.[61] Some emphasised that advisory support could simultaneously help businesses and provide government better value for money.

> An independent advisory service can encourage SMEs to take up training opportunities by performing the role of an honest broker that negotiates high quality, relevant outcomes for the employer and their employees while also ensuring that the program delivers value on the investment of public money. (Industry Skills Australia, sub. 112, p. 7)

Training options should be high-quality and flexible – but not necessarily accredited

The type and format of training subsidised should be tailored to the needs of participating firms and employees but should also be high-quality and not exclude flexible, non-accredited training options.

Compliance training to meet regulatory or licensing requirements should not be subsidised. As CEDA argued 'policy design should target higher value-added training rather than compliance, which will occur anyway to comply with regulation' (CEDA, sub. 104, p. 1). Advisory services should act as gatekeepers to ensure that training vouchers are not used to fund compliance training.

[60] CEDA (2024, p. 40) reports that only about 15% of surveyed members had a clear approach to measuring the return on training investment. While data is limited this aligns with international evidence that many organisations either do not evaluate training or restrict evaluation to basic satisfaction measures (Aragón-Sánchez et al. 2003; D2L 2023, p. 15). To address this, the pilot could disseminate tools to help SMEs evaluate training (ISO 2023).

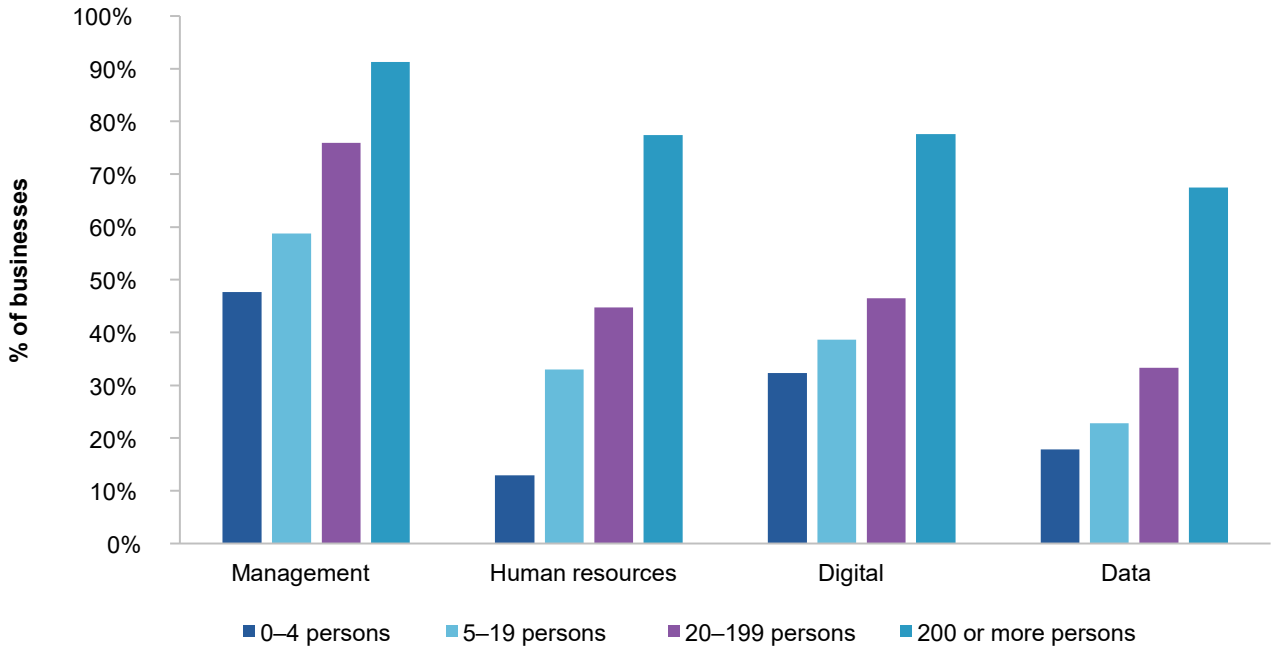
[61] ACU, sub. 170; AGWA, sub. 100; AHRI, sub. 130; AIPM, sub. 51; ARA & NRA, sub. 184; CET, sub. 103; COSBOA, sub. 124; CPA Australia, sub. 137; Industry Skills Australia, sub. 112.

Targeted training in management and digital skills should be considered

There may be merit in targeting specific skills, such as management or digital skills, where gaps are prevalent across Australian firms, and in SMEs in particular (figure 3.8).

Figure 3.8 – SMEs are much less likely to use management and digital skills

Use of selected skills by firm size



Businesses were asked if they used skills in undertaking their core business activities. Management skills include financial, business management, project management, supply chain management and environmental management skills. Digital skills include digital technologies and electronics. Data skills include data, analytics and databases.

Source: ABS (2023, table 1).

Better managerial practices and adoption of digital technologies can boost productivity growth. For example, differences in managerial practices have been found to account for 30% of total factor productivity differences across firms (Bloom et al. 2016). Likewise, digital technology adoption is associated with higher firm productivity, with larger effects in manufacturing and routine-intensive industries. Gains are stronger for more productive firms and weaker where skill shortages are higher (Gal et al. 2019).

Australian firms lag on both management practices and digital adoption. In 2025, Australia ranked 43rd out of 69 countries in its adoption of management practices (IMD 2025). Gaps in digital capability are large and widespread in Australia and are another potential target for training advice. A survey of 400 employers by RMIT Online and Deloitte Access Economics found that four of the top five skills gaps facing Australian employers are digital-focused skillsets, including artificial intelligence and data skills. Many employers still do not prioritise budgets to narrow these skill gaps (Deloitte Access Economics and RMIT Online 2024, pp. 4, 30). Recent analysis has suggested that closing digital skills gaps could lift Australia's economy by about $25 billion by 2035 (Rumbens 2025).

Advisers and training courses could 'nudge' firms to take on this kind of training when development plans identify gaps. If the program budget permits, separate pilots of specific types of training could more precisely measure the impact of one type of training over another.

Flexible training options are valued by workers and firms

Access to flexible training options is critical to overcome persistent barriers – especially time barriers – to training participation. By making training more accessible and responsive to diverse needs, flexible training can support women, carers, people in remote areas and those with disabilities, among other groups. It also allows for training to be adapted to meet the needs of individual businesses, and adjust to changing skill requirements (OECD 2025, pp. 100–101).

Some participants argued that, to improve portability of skills and ensure the quality of training, government support should focus on accredited or nationally recognised training.[62] For example, Industry Skills Australia (sub. 112, p. 9) argued for government investment to be directed 'exclusively toward nationally recognised training to ensure portability of skills, value for money, and to limit risk'.

However, many employers value unaccredited, non-formal training because it offers greater flexibility and can be tailored to the needs of individuals or businesses. Almost 60% of employers who used unaccredited training in 2023 reported that comparable nationally-recognised accredited training was not available (a further 27% did not investigate its availability) (NCVER 2023, table 20). Employers said they chose unaccredited training over nationally-recognised training mainly because it was more cost-effective (40%), the course content was suitable (38%), training was available at convenient or flexible times (36%) and the training was tailored to their needs (36%) (NCVER 2023, table 21).

The Industry Skills Fund program included grants for both accredited and unaccredited training. An evaluation found that the flexibility to use both was a strength of the program, especially in some growth sectors where accredited training was not yet available. Flexibility of training options helped skills advisers to tailor training plans more closely to business needs than if they had been restricted to using only accredited training (ACIL Allen Consulting 2017, pp. 33–34).

Many inquiry participants said that flexible training options were important to increase participation, address time constraints, and meet the diverse needs of workers and employers.[63]

> Training should be available in modular, bite-sized formats that allow participants to engage at their own pace. This flexibility is essential for time-poor business owners and staff.
> (CPA Australia, sub. 137, p. 3)

Better recognition of work-related training would increase its value to workers

Although work-related training does not have to be accredited to be recognised, alternate systems of recognition (such as a certificate of completion) can increase its value for workers when moving jobs, since prospective employers can struggle to discern an individual's competencies without trusted proof of training participation (Acemoglu and Pischke 1998, p. 82).

Recent policy developments supporting the use of *alternative credentials* – such as microcredentials, digital badges and industry-recognised certificates (Kato et al. 2020) – should be encouraged to recognise and document high-quality work-related training.

[62] AEU Federal Office, sub. 119; Industry Skills Australia, sub. 112; TDA, sub. 71.

[63] AAAA, sub. 102; ACU, sub. 170; AGWA, sub. 100; AIPM, sub. 51; ARA & NRA, sub. 184; ATN Universities, sub. 160; CET, sub. 103; CPA Australia, sub. 137.

The Australian Government has developed a National Microcredentials Framework and the MicroCred Seeker website to support the growth of shorter training options that encourage upskilling and lifelong learning (DESE 2022, p. 11; DoE 2025f). Microcredentials blur the line between formal qualifications and unaccredited work-related training. Under the framework, a microcredential is defined as:

> … a certification of assessed learning or competency, with minimum volume of learning of one hour and less than an [Australian Qualifications Framework] award qualification, that is additional, alternate, complementary to or a component part of an [Australian Qualifications Framework] award qualification. (DESE 2022, p. 3)

The Australian Government's 2023 *Employment White Paper* proposed the development of a National Skills Passport (NSP) to enable individuals to share evidence of their qualifications and skills with employers and education providers (Treasury 2023, p. 181). The Department of Education and the Department of Employment and Workplace Relations were tasked with developing a business case for the NSP. The NSP could include digital verification of formal qualifications (such as vocational and higher education qualifications), work-related licences (such as Working with Children checks), and provide information for individuals about possible education or career opportunities based on their profile (DoE and DEWR 2024).

The PC believes that the value of the NSP could be increased by allowing individuals to add verification of high-quality, work-related training to their passport. Unaccredited training courses conducted by registered training organisations and higher education providers could be verified digitally, in much the same way as formal qualifications. Verifying training provided by employers, industry groups or product vendors could be more complicated. Incorporating low-quality or self-reported work-related training in the NSP risks undermining the passport's credibility. One option would be to have Jobs and Skills Councils lead work to verify or endorse high-quality training courses so they could be included in the NSP.

Recommendation 3.1
Improve the recognition of work-related training

The Australian Government should look for ways to improve the recognition of work-related training such as through further development of a National Skills Passport. Microcredentials and other alternative credentials should be included in the passport model. Mechanisms for recognising other types of high-quality work-related training (such as verification and endorsement by Jobs and Skills Councils) should be developed to maximise the value of a National Skills Passport and encourage lifelong learning.

Other measures to encourage individuals to train have had mixed success

The PC considered several other policy measures to support individuals to do more work-related training, but has decided against recommending them because they lack sufficient evidence of efficacy and cost-effectiveness to warrant a trial and are less able to directly target specific groups such as SMEs.

Some inquiry participants (CET, sub. 103; Institute of Public Accountants, sub. 13) suggested that the individual income tax deduction for self-education expenses could be extended to cover training for reskilling (currently expenses can be claimed only when they relate to a current job, not a future job). It is not clear that such a measure would be effective in expanding participation in training, especially for those who are least likely to train. Take-up of the existing tax deduction is low: only 6.5% of taxpayers claimed it in 2022-23, far fewer than claim other work-related tax deductions (Australian Industry Group Centre for Education and Training 2025, figure 12). Overseas evidence suggests that any increase in training participation resulting

from individual tax deductions was limited to highly-educated and highly-paid workers, and much of the training would have happened anyway (van den Berge et al. 2023, pp. 729, 753–754).

Training leave addresses time barriers, but international evidence shows low take-up and mixed labour-market effects. In Germany, statutory study leave generally provides five paid days per year, with payment typically borne by employers. Recent evaluations found no increase in course participation after the law's introduction in one state (Rüter et al. 2020). Uptake of the scheme has been as low as 1.1% in 2017 (Forschungsinstitut Betriebliche Bildung 2019, p. 6).

More generous models deliver better results but raise value-for-money concerns. For instance, Finland's publicly-funded adult education allowance (two to 18 months) boosts training, but has questionable cost-effectiveness once forgone earnings are counted (Kauhanen 2021, pp. 651, 660–667). The scheme is being discontinued (Employment Fund 2025). Austria's study leave scheme (two months to one year) has resulted in some positive employment outcomes, but rising costs and integrity concerns have prompted recent reforms to the scheme (Bittschi et al. 2023; BMSGPK 2025; Szigetvari 2025).

A pilot program should build in evaluation to gather evidence on what works to increase training

The PC recommends that new measures to support work-related training be piloted and evaluated, and only if they are found to be effective should they be rolled out more widely. Evidence is lacking both in Australia and internationally on the best policies to increase work-related training. The available evidence suggests that the net gains can be low and the beneficial effects of training on productivity and wages uncertain. Program design can alleviate some of these risks, but prudence is needed to ensure that public funds are not wasted.

Any pilot should be long enough to encourage behavioural change and to enable study of the longer-term impacts of the programs being tested. Some previous programs to support work-related training (such as the Small Business Skills and Training Boost) have been short-lived, making it difficult to assess whether their lack of impact is due to their design or because firms had little time to change their training behaviour in response to the program.

A robust impact evaluation should be built into the design of the pilot program. An evaluation plan should be developed early to establish a program logic and ensure that data required to measure program baselines and outcomes is collected. Potential methods of impact evaluation could include a randomised controlled trial (RCT), or quasi-experimental methods such as difference-in-differences, regression discontinuity around the cutoff for small and medium businesses, and instrumental variables approaches (Department of the Treasury 2023). Other types of evaluation and monitoring to collect information about the design and performance of the program would also be valuable and complement the impact evaluation.

Recommendation 3.2
Pilot co-funded training vouchers and advisory supports to encourage small and medium enterprises to increase work-related training

The Australian Government should run a pilot that provides small and medium enterprises (SMEs) with a co-funded package of:

- vouchers to provide work-related training, with a focus on courses that address skills gaps such as management or digital skills, while allowing other forms of training where appropriate
- advisory support through a consultation to diagnose skills needs, co-design a short training plan, and disseminate materials that include training course recommendations and tools to help SMEs measure the impact of training over time.

The pilot should not subsidise compliance training that is required to meet regulatory or licensing obligations. Support should be provided through employers rather than directly to individuals.

The measures should be rigorously evaluated to determine cost-effectiveness and provide a disciplined basis for expanding, redesigning or ceasing the program. The program design should include data collection to establish a baseline and evaluate the measures. A randomised controlled trial is the preferred option for evaluating the pilot. If a randomised controlled trial is found to be unfeasible, quasi-experimental methods of evaluation should be used.

A randomised controlled trial is well suited to evaluate the impact of training support

An RCT is the preferred approach to evaluating the impact of a pilot of work-related training supports for SMEs. An RCT offers a robust approach to evaluate the pilot and learn what works to increase SME training before committing to a large-scale program (box 3.4). Compared with other evaluation methods, an RCT provides strong causal evidence about the impact of policies or programs.

Box 3.4 – Try it out first – the value of RCTs in policy

An RCT allocates eligible people or groups at random to participate in a new program or continue with business as usual. It then compares outcomes, enabling differences to be attributed to the program itself (Treasury 2024). Many ideas that sound promising do not deliver when tested. RCTs can help governments learn faster, focus resources on what works and avoid repeating mistakes.

The Australian Government is gaining experience at conducting RCTs. It established the Australian Centre for Evaluation in 2023 to embed evaluation into policy, provide technical advice on RCTs and other impact methods, partner on pilots and build evaluation skills across the public service (Leigh 2024a).

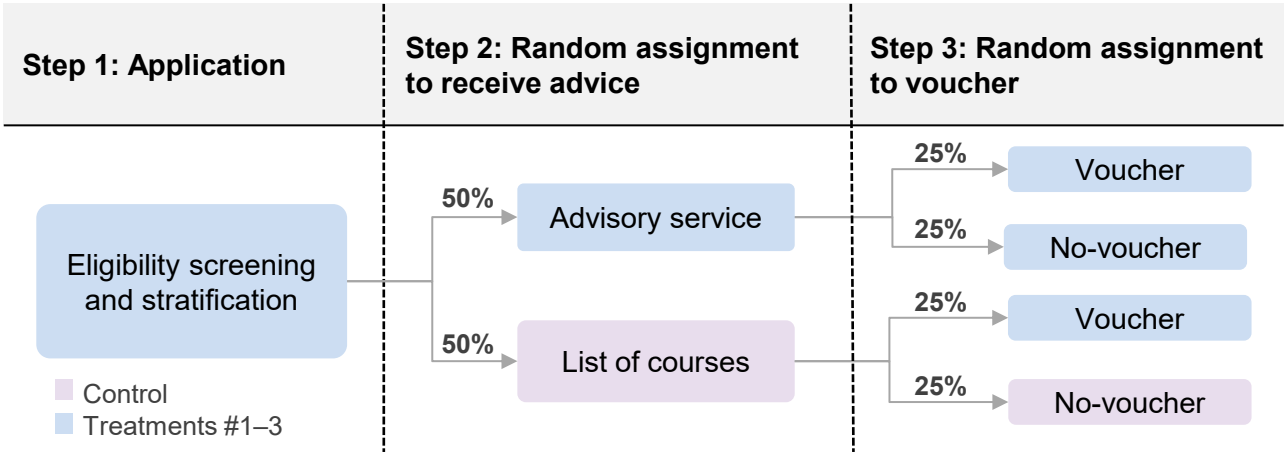
As a result, the Australian Government has the capability to design and deliver policy RCTs, including within the Department of Employment and Workplace Relations and with SMEs.

Box 3.4 – Try it out first – the value of RCTs in policy

- The **Online Employment Services Trial** randomly selected job-ready job seekers to test self-managed online servicing, finding that it led to faster commencement of employment services for job seekers compared with the control group (DESE 2021a, p. 16).
- In the **Online Job Seeker Classification Instrument Trial**, Services Australia randomly selected job seekers applying via myGov to complete the Job Seeker Classification Instrument online, comparing outcomes with interview-based completion. It found the new instrument provided similar or slightly better outcomes at a lower cost than the comparison group (DESE 2021b, p. 24).
- Changes to the **Fair Work Ombudsman's audit process** were tested by randomly assigning small businesses to a standard audit or one of two enhanced audits, or a control group. The RCT found that standard audits improved compliance with award wages paid by firms, and that enhanced audits designed to improve communication were even more successful in reducing non-compliance. Firms also found the enhanced audits more helpful and less time consuming (BETA 2019, p. 4).

A pilot of financial incentives and advisory support for SMEs is well suited to an RCT. Eligible firms could be randomised to receive the new services (the treatment group) or to continue with existing arrangements (the control group). Ideally, a two-stage randomisation process could be used to separately test the impact of advisory services and training vouchers (figure 3.9). By comparing outcomes between the treatment and control groups, an RCT would yield unbiased estimates of the additional training and value for money that can be attributed to advice alone and to advice with vouchers. However, a two-stage design would require a larger sample size (and budget) than simpler designs with only one treatment.

Figure 3.9 – One possible RCT design could test the impact of advice and training vouchers separately



The feasibility of an RCT depends on design of the pilot

The design of the pilot must be carefully considered. It requires a detailed analysis plan developed for peer review and pre-registration in a public registry.[64] That plan would lock in the pilot design, which would depend largely on the budget made available.

RCT design requires several key considerations.

- **Sample size determines the budget and if the pilot can answer policy questions**. Too small, and the RCT might have inconclusive results. Too large, and the study becomes slow and expensive. A larger sample size and budget is needed if the program is likely to have a small impact on outcomes, the outcomes of the program vary a lot between participants or there are more comparison groups (Djimeu and Houndolo 2016; Doyle and Feeney 2021). For example, a trial that separately tests advisory support and training vouchers needs four groups (figure 3.9) and a larger sample than a single-program trial.
- **Trial design determines whether results can be generalised**. The sample should be stratified to ensure representativeness by SME size, sector and region, with enough firms in each group to observe differences. This ensures that the diverse range of SMEs are accounted for (figure 3.5), accounts for thin markets in regions and supports decisions on whether to scale up a program from a pilot.
- **Data availability affects the RCT's feasibility**. Outcomes should be specific and measurable. Primary outcomes include firm- or employee-level training participation (hours or expenditure). High-frequency data on work-related training is limited, so the RCT would need to collect it (box 3.5). Baseline data improves precision but is not required for unbiased estimates because randomisation ensures the treatment and comparison groups are similar in expectation (Duflo et al. 2006, p. 45). Secondary outcomes such as productivity proxies and staff turnover can come from administrative datasets, with consent for data linkage, lowering collection costs and attrition (Fahridin et al. 2024).
- **Participation alone can shift behaviour**. Treated groups may improve simply by being observed (Hawthorne effects) while control groups may react to being left out (John Henry effects) (Duflo et al. 2006, pp. 68–69). These effects can be mitigated by using administrative training data to track control firms without contact or by offering some form of lighter intervention to the control.
- **General equilibrium effects and spillovers can be missed.** RCTs are often criticised as missing general equilibrium effects and broader spillovers (e.g. at the industry level). Duflo et al. (2006, pp. 66–68) note that market-wide or system effects if the program is scaled would not be captured. For instance, training vouchers might expand demand, which could influence the price of training if it were scaled up. This effect would not be captured in the smaller scale RCT.

The pilot must still be evaluated, even if an RCT is infeasible

If the RCT is infeasible, the impact of the program should still be evaluated using quasi-experimental methods such as difference-in-differences. A single combined treatment of advice plus vouchers could be rolled out to one cohort or region and compared with a not-yet-treated group using pre- and post-program data. Firm-level outcomes such as productivity and turnover can be measured using administrative data. Training data would be more complex given the lack of administrative data on work-related training (box 3.5). Training outcomes could be measured through voucher redemptions or training provider data. Additional

[64] Pre-registration generates a record in the public trial registry which creates a commitment to publish the study regardless of results. It can also help with replicability of the research in the future and collaboration. Pre-analysis ensures that the measurement of the outcomes is carefully thought through ahead of time (Department of the Treasury 2024).

survey data collection could also support the evaluation and may be necessary before the policy commences to establish a baseline (unlike in an RCT).

Quasi-experimental approaches have limitations compared to an RCT. They rest on stronger assumptions (like parallel trends) and cannot cleanly separate the effects of advice and vouchers. They also have greater risks of spillovers to the control group and can require larger samples and a longer time series to achieve similar power. The findings of such studies would still be useful for decision making, but are less certain than those of an RCT.

Box 3.5 – Limited data complicates evaluation of work-related training policies

Robust policy development requires a strong evidence base, but a lack of data on work-related training hinders analysis and evaluation. Specific issues include:

- methodological inconsistencies in past surveys which make comparisons over time difficult
- the infrequency and limited historical data from the Australian survey on work-related training rates, which has been conducted once every three years and has been completed only three times (ABS 2022b)
- a lack of employer training expenditure data, with Australia's last collection dating back to 2001-02 (ABS 2003), whereas countries like Singapore, Norway and the United Kingdom conduct annual or biennial surveys (DfE 2023, 2025; MOM 2024, 2025; SSB 2024).

The Australian Government recently committed to rejoining the OECD's Programme for the International Assessment of Adult Competencies which conducts both employee and employer surveys on adult skills (O'Connor 2024). But this survey is done only every 10 years which is too infrequent to fill the data gaps.

A significant expansion in data collection and more consistency is needed to fill data gaps on work-related training. The Australian Government could:

- commit to collecting baseline training rates and spending before implementing new policies
- create new surveys to gather data from employers as opposed to individuals to better measure spending levels and where funds go (for example, compliance vs upskilling)
- consider adding questions to existing surveys or data collection efforts, such as through the tax system's business activity statements, to provide more frequent insights (although this could prove too expensive)
- ensure that future surveys have a consistent approach to defining work-related training, including distinguishing clearly between training types, such as compliance, job-specific and general training.

However, data collection can be costly, and alternatives should be explored to minimise the costs to the Australian Government and the burden on firms, ideally drawing on existing data collections.

4. Fit-for-purpose occupational entry regulations

Summary

- **About one in five workers in Australia are subject to occupational entry regulations (OERs) – rules that seek to protect workers and consumers by requiring workers to meet minimum conditions. While they can serve an important purpose, OERs can at times worsen worker shortages, reduce consumer access, increase prices and stifle productivity.**
- **OERs may not always be the most efficient way to protect workers and consumers.**
  - We did not find strong evidence of a relationship between the stringency of OERs and service quality across the 12 occupations we examined. This may be because in jurisdictions with less stringent OERs, other regulations can achieve the same outcomes, or because underlying risks are low and OERs have little effect.
  - Replacing excessive OERs with less burdensome and in some cases more effective alternatives can maintain safety and quality standards while lowering prices for consumers and allowing more people to work in jobs for which they have the skills and experience.
- **State and territory regulators should work to replace inefficient OERs. A logical starting point would be to examine OERs that exist in their jurisdiction but not in others and show little evidence that they improve outcomes.**
  - Reform should begin with motor vehicle repairers, hairdressers, and painters and decorators, where entry into these occupations is subject to jurisdiction-specific regulation.
- **In many occupations, qualification requirements are the most significant barrier to entry. Expanding entry pathways and carefully considering opportunities to streamline qualification requirements can help address workforce shortages without reducing the competency of workers. Governments should:**
  - consider revising qualification requirements for lower-risk activities in certain occupations (such as registered company auditors and air conditioning and refrigeration mechanics)
  - scale up successful pilots of alternative apprenticeship models that may better suit mature-age entrants, women and other non-traditional cohorts; Jobs and Skills Councils should support this work.
- **Stronger regulatory impact assessments and regular reviews in all Australian jurisdictions would allow governments to address excessive OERs, including licensing creep and legacy licensing.**
- **Governments should use the National Competition Policy process to encourage OER reform. This process should seek to:**
  - review OERs and replace any that are not fit for purpose, and look for ways to expand entry pathways
  - improve the regulatory systems that administer OERs, including by improving data collection to establish a stronger evidence base for decision making.

OERs are designed to protect workers and consumers

Occupational entry regulations (OERs) govern the entry of new workers into occupations. They require workers to meet minimum conditions: for example, to complete a specific degree, obtain a licence or pass an exam.[65] OERs are prevalent in Australia; about one in five workers are subject to them (PM&C 2021, p. 7).

Some jobs, such as those in medicine or electrical services, involve work that can cause harm if performed incorrectly (Ahpra 2020a, p. 5,10; PC 2025b). OERs are intended to protect consumers, workers, the public and the environment by ensuring that practitioners meet minimum standards of training, competence and ethics, especially where consumers depend on the professional's judgement (Bowman et al. 2024, p. 7; PM&C 2021, p. 7; Select Committee on Red Tape 2018, p. 17).

However, OERs can make it harder for new workers to enter an occupation and can create additional compliance costs. Higher costs and a more limited pool of workers can raise prices for consumers and stifle innovation. When these costs exceed the benefits, OERs are excessive.

Different regulators administer OERs depending on the occupation and level of government responsible. For example, registered health practitioners are regulated under the Health Practitioner Regulation National Law, which is administered by National Boards for each health profession, with administrative assistance provided by the Australian Health Practitioner Regulation Agency (Storen and Ferris 2023). Electricians, by contrast, are regulated at the state and territory level by regulators such as Energy Safe Victoria (2024). Ultimately, the responsible minister and government decide which occupations to regulate.

Government agencies, industry bodies and certain regulations beyond OERs can restrict entry and influence workers to obtain licences, qualifications or checks, even when not legally required. For example, medical colleges control key steps of specialist training, including the selection of junior doctors for specialist programs, but their interests may not align with community needs (Breadon et al. 2025, pp. 19–21). In other sectors, regulated staffing ratios or requirements can impact opportunities for new entrants. For example, in the aged care sector, regulations requiring at least one registered nurse to be onsite and on duty at all times (DHDA 2025b) do not directly restrict entry but create incentives for workers to obtain higher qualifications. These measures can have a similar impact to OERs and warrant attention but are not the primary focus of this inquiry.

Current OER reforms focus on supporting worker mobility across state and territory borders to make it easier for workers and businesses to provide services across jurisdictions and reduce the requirement to hold or reapply for multiple licences (Chalmers 2025b; DoF 2022, p. 18). Many inquiry participants highlighted this issue.[66] The National Competition Policy Federation Funding Agreement Schedule was updated in November 2025 to include occupational licensing reforms designed to make it easier for skilled labour to work in different states, prioritising electrical and engineering occupations (Chalmers 2025a). Automatic mutual recognition (AMR) reforms have also progressed (PM&C 2021, p. 23; PwC 2020, p. 16). However, AMR reforms have revived some long-standing disagreements on acceptable standards for OERs (ACTU 2021) and have not resolved all issues (box 4.1).

There is an opportunity to better ensure that OERs are kept updated for current conditions and are fit for purpose. OERs have become more prevalent over time, yet changes in technology and consumer preferences have helped make them unnecessary for some occupations. In occupations where regulations

[65] 'Occupational licensing' has been used in other policy contexts to mean OER. We have used the term OER to better reflect non-licensing entry regulations (such as registration or regulated qualification requirements).

[66] For example, AUSMASA, qr. 75; BCA, sub. 17; Ben Adamson, qr. 2; Engineers Australia, qr. 87; ICA, sub. 97; Master Builders Australia, sub. 32; Master Electricians Australia, sub. 94, p. 20; Professor Leanne Wiseman, qr. 14; RAI, sub. 16; Teach For Australia, qr. 31.

remain necessary, less costly alternatives to OERs could be considered. When OERs are required, expanding entry pathways and better targeting qualification requirements to risk can help increase employment opportunities and reduce costs for all Australians. In the long term, governments must improve the mechanisms that introduce new regulations and review existing ones (PC 2025f).

Box 4.1 – Automatic mutual recognition cannot resolve all issues

AMR allows workers who hold an occupational licence in one state or territory to practise in another without obtaining another licence. It seeks to reduce barriers to labour mobility. But AMR does not resolve all jurisdictional differences in OERs and may not help when:

- **an occupation is licensed in some jurisdictions but not others.** In these cases, workers from unlicensed jurisdictions do not hold a licence and cannot benefit from AMR. For example, a tradesperson licence to repair motor vehicles is only required in New South Wales and Western Australia (box 4.6)
- **licensing scope differs across jurisdictions.** Installation of fire protection equipment, such as sprinklers, is covered under a plumbing licence in Victoria but not in Western Australia. As a result, a plumber from Western Australia working in Victoria under AMR is not authorised to perform fire protection work without obtaining a separate licence in Victoria (WA LGIRS 2025)
- **jurisdictional differences involve restrictions other than licensing.** For instance, hairdressers in New South Wales and South Australia do not require a licence but are required to possess a certificate III. A hairdresser from another jurisdiction that does not require the certificate is ineligible to work in those states without seeking additional recognition for their skill and experience (appendix B).

Issues such as carve-outs for certain occupations and Queensland's non-participation in the scheme also inhibit the effectiveness of AMR (PC 2025h, p. 13). To promote labour mobility nationally, the PC recommended an independent evaluation of the AMR scheme (PC 2025h, p. 16).

OERs are not always the right tool for the job

OERs can indirectly reduce economic performance. Australian research found that more stringent OERs are linked with reduced business entry and exit, slower flows of labour from low- to high-productivity firms, and skill shortages (Bowman et al. 2024, p. 29). International evidence has also found that OERs impede economic performance without necessarily improving service quality (box 4.2).

Licensed occupations feature prominently in the Occupation Shortage List, Jobs and Skills Australia's annual assessment of occupations with insufficient workers. PC analysis found that 73% of workers who do or may require a licence or registration are in occupations in shortage, compared with 24% of workers who do not.[67]

[67] Estimates based on ABS Australian and New Zealand Standard Classification of Occupation (ANZSCO) 2021 and the Jobs and Skills Australia (JSA) (2024b) Occupation Shortage List. Occupations with missing shortage data (covering 18% of workers) were excluded. The ABS data identifies registration or licensing as any restriction (legislative, regulatory or code of practice) that applies to anyone employed in that occupation. The JSA Occupation Shortage List largely reflects vacancies at current wages and conditions. The Grattan Institute (Coates et al. 2022, pp. 22–23) and the PC (2023a, p. 34) note that recruitment issues should prompt higher wages, with shortages assessed after wage increases. Despite shortcomings, shortage lists provide insight into occupations with insufficient workers.

Box 4.2 – International research highlights the downsides of more restrictive OERs

International evidence found that more restrictive OERs can:

- reduce labour supply and employment opportunities (Blair and Chung 2019; Kleiner 2017)
- increase prices without always improving quality (Farronato et al. 2024; Kleiner 2017)
- reduce worker mobility between occupations and between states (Johnson and Kleiner 2020; Kleiner and Xu 2023)
- lower productivity by reducing firm capabilities and incentives to innovate and adopt best practices, and reduce the reallocation of workers from low- to high-productivity firms (Bambalaite et al. 2020).

Studies also suggested that more stringent OERs cannot guarantee improved quality or safety (Bambalaite et al. 2020, p. 12; Carroll and Gaston 1981; Kleiner 2015, p. 6; Kleiner and Kudrle 2000; Koumenta et al. 2018; Powell and Vorotnikov 2012).

OERs can affect the cost and availability of services for both household and business consumers. For example, the public's ability to access affordable financial advice decreased after OERs for financial advisers became more restrictive in 2019. As a result, recent work is looking to reform qualification requirements and reduce the stringency of OERs while ensuring consumers remain protected (appendix B).

The overall effect of more stringent OERs on workers' wellbeing is ambiguous. They may raise wages by reducing competition (Kleiner 2017), but may not offset the costs workers may incur meeting study requirements or registration fees. Higher wages may also lower demand for labour, which could reduce some workers' incomes and leave them worse off overall. However, more stringent OERs that are grandfathered (that only apply to new workers entering an industry) may be attractive to incumbent workers.

Making OERs less stringent could yield significant economic benefits. The Committee for Economic Development of Australia (CEDA) estimated that Australia could gain $5 billion from higher productivity by reducing the coverage and stringency of OERs (Barker 2022, p. 4). Previous PC work estimated a 0.34–0.39% boost to GDP from streamlining OERs, based on an increase in productivity of 0.8% (drawn from international empirical estimates) in industries with the highest incidence of OERs (PC 2023a, p. 181, 2024a, p. 24).

OERs are affecting a growing number of occupations

OERs have grown to cover more occupations. For example, the National Registration and Accreditation Scheme was introduced in 2010 to cover 10 health professions but has expanded to 16, including some that were not previously regulated under state and territory schemes (Ahpra 2020b, pp. 32–33, 2023). In building and construction, recommendations in the Building Confidence Report (Shergold and Weir 2018) have helped to make OERs more stringent through higher requirements or by covering more of the sector (PC 2023a, pp. 68, 72–73). Concerns about service quality and safety have often led to proposals for additional OERs, such as increasing qualification or registration requirements, as can be seen in the Royal Commission into Aged Care Quality and Safety (Pagone and Briggs 2021, p. 126). Overall, licensing in Australia is now more stringent than in many comparable countries (box 4.3).

Some increases in OERs are justified, but others are not (PC 2023a, pp. 68–69). The term 'licensing creep' describes the unnecessary expansion of OERs without clear public benefit. It can reflect parties seeking to gain benefits for themselves (Kleiner 2018). For instance, education providers benefit from higher qualification requirements because they increase course demand (Pittinsky 2015, p. 36). Governments may wish to retain

licensing to maintain a source of revenue. One estimate places national occupational licensing government revenue at $1 billion per year, half of which goes to state and territory regulators (CEDA, sub. 104, p. 3).

Incumbent workers also have incentives to support new OERs, particularly if grandfathered (Barker 2025). Incumbent firms may also advocate for making OERs more stringent. In some regulated occupations, such as building trades that contain many sole traders, firm and worker incentives often align. New OERs, by creating a barrier for new workers to enter the market, can reduce competition and raise incumbents' wages. Further, regulators often want to maintain cooperative relationships with industry (for example, QLD OFT 2022, p. 4; WA DPIRD 2024, p. 10), which may undermine their ability to provide a balanced perspective when considering proposed new OERs.

Box 4.3 – Licensing applies to more workers in Australia than some other countries

Many countries' licensing regimes are less stringent than Australia's. While this may reflect different attitudes to risk, it could also suggest that Australia's OERs are excessive or that Australia is not adequately using alternatives to licensing.

About 19% of Australian workers have a licence, according to one estimate (PM&C 2021, p. 7). PC analysis found that at least 15% and perhaps as many as 30% of Australian workers may be subject to registration or licensing.[a] This makes Australia more restrictive than at least nine and as many as 23 EU countries (out of a total of 27). These include Sweden, where estimates using 2012 data range from 11% to 15% of workers, Netherlands (10% to 17%), the United Kingdom (10% to 21%) and France (13% to 21%) (Koumenta et al. 2014, pp. 46–47).

Research into why OER stringency varies between countries is limited. One hypothesis is that Sweden's lower licensing levels stem from its highly developed vocational education, higher degree of unionisation and lower levels of privatisation (Osheroff and Levi-Faur 2019, pp. 9–10). Some researchers have observed a correlation between rising OERs and declining unionism (Kleiner and Krueger 2008, p. 10; Richmond 2019, p. 16). Von Rueden and Bambalaite (2020, p. 13) also suggest that some legal systems may rely more on insurance or litigation than on OERs or other mechanisms to ensure service quality.

a. Employment based on ANZSCO 4-digit occupations: ABS, Labour Force Survey, Detailed, February 2025; JSA trend data (2025c). Licensing based on ABS ANZSCO 2021. The ABS identifies registration or licensing as any restriction (legislative, regulatory or code of practice) that applies to anyone employed in that occupation.

OERs disproportionately affect certain groups

Workers who require or may require licensing or registration are more likely than other workers to be male (although OERs are prevalent in common female-dominated occupations such as nursing and teaching), to be non-Indigenous, to have higher incomes and to only speak English (appendix C, section C.4). When considering new OERs or reviewing existing ones, it is important to account for potentially disproportionate

effects on different groups of incumbents (insiders) and on potential entrants (outsiders).[68] Where OERs have negative effects on equity, alternative forms of regulation may be a more attractive way to manage risk.

Excessive qualification requirements can disadvantage some groups. They can impede social mobility, since children from lower socioeconomic backgrounds are less likely to attain post-secondary qualifications (Lamb et al. 2020, p. 16). Inflexible training schedules may impede women from undertaking apprenticeships (DEWR 2024, p. 83) and wage barriers can be greater for women since they are more likely to apply as mature-age apprentices (NECA, sub. 14, p. 11). Given that many of the almost completely male-dominated occupations are in national shortage (JSA 2025d, p. 25), ensuring entry pathways are open to women is important for female employment and for alleviating these shortages.

Formal qualification requirements may also restrict employment of Aboriginal and Torres Strait Islander people. While the proportion of Aboriginal and Torres Strait Islander people aged 25–34 years who have completed a tertiary qualification has increased, the relevant Closing the Gap target is not on track to be met (PC 2025c, p. 72). Indigenous Allied Health Australia Ltd (sub. 145, pp. 2–3) also noted that qualification requirements in the care sector failed to consider relevant experience and cultural knowledges (PC 2025b). Further, the proposed national registration of care workers could remove providers' discretion to employ workers with low-grade criminal convictions who are otherwise suitable, potentially disadvantaging Aboriginal and Torres Strait Islander people, whose incarceration rates are higher than the national average (DHDA 2025a, p. 53).

In addition, OERs may hinder employment for people in regional and remote areas, who may have restricted access to education and training infrastructure (Skills Insight, sub. 107, p. 15), or may not be able to take the in-person assessments some OERs require (Aged Care Workforce Remote Accord, sub. 98, p. 6).

However, some inquiry participants argued that OERs help professionalise occupations (particularly in female-dominated industries such as early childhood education and aged care) and provide a basis for wage and career progression (Skills Insight JSC, qr. 38, p. 9; WAVE, sub. 109, p. 15). The Royal Commission into Aged Care Quality and Safety made a similar argument in support of professionalisation through worker registration (Pagone and Briggs 2021, p. 126). However, even in these circumstances, the benefits of tightening OERs need to be assessed against the potential costs of increasing entry barriers and limiting a sector's ability to attract workers. By contrast, improving pay and conditions is a well-established pathway to attract and retain staff.

Replacing OERs with more efficient alternatives

OERs should exist only when a risk to consumers or workers cannot be addressed in a less restrictive or costly way. Generic laws that are not specific to an occupation already provide a layer of protection. When these laws are inadequate, targeted, occupation-specific regulation is required. But OERs are only one tool, and not necessarily the most efficient, that governments can use (figure 4.1). Alternatives can cost less than OERs as they do not impose preconditions on new entrants (CAV 2006, pp. 18–19).

When considering introducing or expanding OERs, policymakers should ask whether government needs to intervene, or whether other options could better deliver policy objectives (PwC 2013, p. 8; VIC DTF 2023).[69]

[68] Some inquiry participants noted that OERs are not the only barrier to entry for these groups, pointing to cultural and structural barriers such as systemic racism, inadequate training and career pathways or limited access to apprentice supports (IAHA, sub. 145, p. 2; MEA, sub. 94, p. 17; PICAC, sub. 180, p. 10; WAVE, sub. 109). For example, gender-based bias may prevent women from accessing male-dominated vocational education and training pathways (JSA 2025b, p. 19).
[69] Based on guidance material on designing and reviewing licensing schemes, including guidance authored by PwC and prepared for the NSW Independent Pricing and Regulatory Tribunal.

The costs of enforcing OERs can be difficult to justify if businesses comply voluntarily or if harm is limited or recoverable. The desired regulatory option is one that imposes least cost while mitigating the risks. Box 4.4 provides an example of alternatives to OERs in hairdressing.

Figure 4.1 – Alternatives to OERs can provide the same level of protection at lower cost

Step 1 – Do generic laws provide adequate protection?

Consumer protection laws The *Competition and Consumer Act 2010* prohibits businesses from engaging in misleading or deceptive conduct and protects consumers against harmful business practices.	**Work health and safety laws** in each state and territory aim to ensure the health and safety of workers and workplaces, and to prevent workplace injuries and illnesses.	**Public health laws** in each state and territory aim to protect population health and prevent disease, for example through food safety and infectious disease control.

Step 2 – Are additional regulatory options required?

Additional restrictions should only be applied to high-risk occupations and when the benefits of additional regulation exceed the costs.

Less burdensome ⟷ **More burdensome**

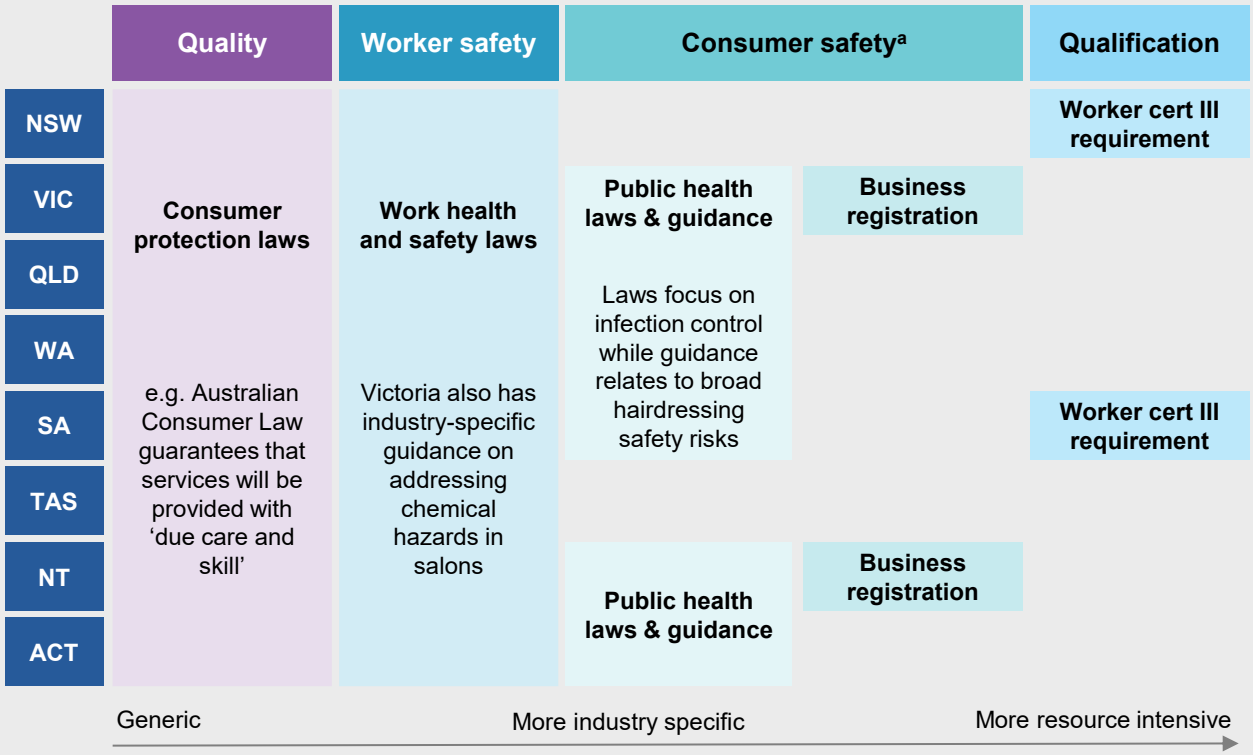
Industry measures such as voluntary certification, codes of conduct and best practice guidelines. Examples include a voluntary certificate for school principals and best practice guidelines for hairdressers in Western Australia. **Promoting market competition** to filter out poor performers. Tools include information campaigns and ensuring consumer reviews are trustworthy. For instance, the ACCC enforces regulations requiring online reviews to be independent and genuine.	**Task-based licensing** for specific high-risk tasks such as scaffolding work or operating a forklift truck, rather than entire occupations. **Negative licensing** allows anyone to practise an occupation unless they violate certain rules. Queensland has used this approach for debt collectors and South Australia for tattooists. **Stronger regulation of occupational outputs or outcomes.** Examples include food safety inspections and fuel quality inspections.	**Qualification requirements** where the worker has demonstrated their competence by obtaining a certificate or degree. **Occupational licensing and registration requirements** where the worker has applied for permission to work in an occupation – often involves demonstrating prior experience, qualifications or passing an exam.

Source: ACCC (2023b); CAV (2006); DCCEEW (2025); FSANZ (2019); PC (2023a, pp. 63–64); Shelton (2022); SWA (nd); WA DoH (2016, p. 2).

Box 4.4 – Different jurisdictional approaches to regulating hairdressing

In hairdressing, worker and consumer safety and service quality are regulated through generic laws, often complemented by industry-specific guidance. Some jurisdictions have also introduced industry-specific requirements into their regulatory mix, ranging from less burdensome registration requirements for hairdressing businesses (Victoria and the Northern Territory) to more burdensome qualification requirements (New South Wales and South Australia) (figure below). The Australian Hairdressing Council (sub. 72, p. 1) suggested that certificate III qualification requirements '[guarantee] safety, skill and confidence for both salon owners, workers and consumers'.

Box 4.4 – Different jurisdictional approaches to regulating hairdressing



a. Public health laws are referenced in the above figure where they specifically relate to hairdressing, for example, where hairdressing is designated a 'public health risk activity' under the provisions of a public health act. New South Wales and Tasmania have public health laws that do not specifically relate to hairdressing.

Industry-specific guidance can tailor generic laws and regulations to hairdressing risks. For example, public health laws and regulations focus largely on infection control, but many states and territories manage a wider array of risks through guidelines for hairdressers (for example, by providing guidance on handling sharps, hygiene measures and maintaining a safe work environment) (ACT Health 2015; NT DoH 2014; Queensland Health 2024; SA DoH 2006; Victorian DoH 2020; WA DoH 2024a).

Some regulatory gaps and potential overlaps are evident from the above figure. New South Wales imposes relatively burdensome qualification requirements, while not adopting less burdensome options such as public health laws and guidance for hairdressers. Tasmania's public health laws do not cover hairdressers, but to some extent, this gap may be minimised through the Australian Consumer Law, which requires service providers to 'take all necessary care to avoid loss or damage' (Commonwealth of Australia 2013, p. 9). In South Australia, qualification requirements overlay a combination of generic laws and industry guidance. Similarly, registration requirements in Victoria and the Northern Territory provide an additional layer of regulation in consumer safety. However these registration requirements are less burdensome than qualifications, requiring only hairdressing businesses or premises, rather than individual workers, to be registered (NT Government 2024; Victorian DoH 2019).

Jurisdictional variation may help identify excessive OERs

OERs for an occupation can vary between states and territories, although the risks faced by workers and consumers are often identical. For example, New South Wales is the only jurisdiction to not offer a restricted licence for installing and decommissioning split system air conditioners, instead requiring a full licence for any air conditioning work (appendix B). Further, in some but not all jurisdictions, plumbers may undertake roofing and mechanical services or incidental electrical work (DoF 2022, p. 21; Master Plumbers 2020). If the risks faced by workers or consumers are the same, OERs should be as well.

Variations in OER restrictiveness and scope can help identify jurisdictions where OERs may be excessive. The policy question is: if an occupation operates effectively and safely under less stringent regulation in one jurisdiction, why are more restrictive regimes necessary in others? States and territories with AMR for selected occupations already allow workers who have met less stringent requirements in other states and territories to work. These cases suggest that a jurisdiction could make its OERs less stringent while still adequately protecting consumers and workers. The intention is not to move to the regulatory environment with the least stringent OER but instead to implement the most appropriate regulatory tools to manage identified risks and protect consumers and workers without imposing unnecessary costs.

The stringency of OERs varies widely across occupations and jurisdictions (figure 4.2; appendix C, section C.4). Assuming that occupational risks are the same across states and territories, the differences in OERs suggest that stringency is either excessive or insufficient in some jurisdictions. Where more stringent OERs do not improve service quality or safety outcomes, they are likely excessive.

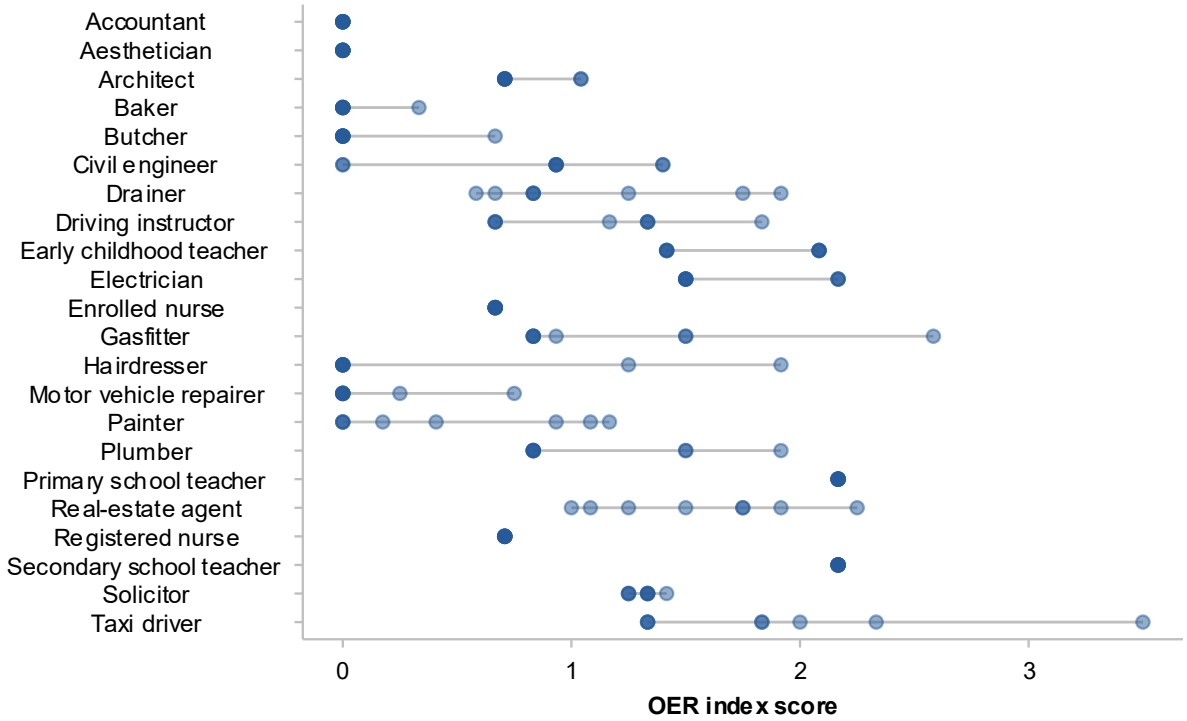
After measuring Google ratings and the OER stringency index across 12 occupations, we did not find strong empirical evidence that the stringency of OERs has an impact on service quality (appendix C, section C.4). This may be because jurisdictions with less stringent OERs are able to rely on other regulations to achieve the same quality outcomes, or because OERs have a negligible influence on average service quality for the occupations examined due to low underlying risks.

If each state and territory government reduced the stringency of OERs in 12 selected occupations, to that of the jurisdiction with the lowest OER stringency, it could boost labour productivity in the industries associated with those occupations by 0.8%.[70] This suggests that reducing the stringency of OERs could have productivity impacts through increased competition that encourages businesses to innovate and adopt best practices, and through promoting the reallocation of workers from low- to high-productivity firms. Reducing the stringency of OERs, in industries where stringency is more likely to vary across states and territories, is estimated to have the potential to increase annual real GDP in the long run by up to $6.3 billion in 2024-25 dollars (0.2% of GDP) (appendix C, section C.4).

[70] PC analysis based on OECD research and simulated falls in OER stringency across 12 occupations linked to 15 industry classes using Australian firm-level data. Further details are in appendix C, section C.4.

Figure 4.2 – OERs can vary widely across occupations and jurisdictions

OER stringency index scores across jurisdictions



Each point represents a state or territory. Point transparency indicates density – darker points mean more states or territories have the same score. A higher index score indicates that the occupation has more stringent OERs. The OER index is primarily used for comparing stringency between jurisdictions for the same occupation and may not be appropriate for comparing between occupations. The OER index was based on methodology developed by the OECD, which may not fully capture the complexity of the Australian regulatory environment. Actual OER stringency may differ when judged on other factors. The index also does not capture the underlying level of risk associated with the occupation, nor requirements that are not imposed by regulations. For example, professional bodies such as CPA Australia may impose requirements on their members, but membership is not legally required to work as an accountant. Other limitations are described in appendix C, section C.4.

Source: PC estimates.

Technological progress requires constant review of OERs

As technology advances and consumer preferences evolve, existing OERs may no longer reflect the demands of consumers or workers – a case of redundant or 'legacy licensing'. For example, if asymmetric information was used to justify the introduction of certain OERs, then introducing online review platforms that provide consumers with easy access to information about service quality would reduce the need for OERs in certain sectors (Rozner 2018, as cited in Select Committee on Red Tape 2018, pp. 9–10; Wild 2018, p. 9). Regular reviews of OERs are important to ensure that they adapt to current demands and risks in each occupation. Box 4.5 explores the successful removal of licensing in the taxi and travel agent industry due to technological change.

Box 4.5 – Technology removed the need to license taxis and travel agents

The Australian taxi industry illustrates how technological disruption can necessitate licensing reform. Improvements in navigation technology led Victoria to stop requiring taxi drivers to pass a 'knowledge' test (Transport for Victoria 2018, pp. 24, 30, 70). In New South Wales, the emergence of rideshare platforms led to some passenger transport services being regulated and others not. In response, restrictions on the number of taxi licences available and on where taxis can operate were removed, and fees were deregulated (Transport NSW 2021, p. 1).

Travel agents were previously required to be licensed and to participate in the Travel Compensation Fund, which protected consumers. The advent of the internet and increasing credit card use allowed consumers to book directly with travel suppliers, protecting their funds from travel agent collapse or misappropriation (PwC 2010, pp. 18–19). As risks lessened, travel agents were deregulated and a voluntary industry accreditation scheme was introduced (Mischin 2014; NSW Fair Trading 2018).

A starting point for replacing OERs that offer limited benefits

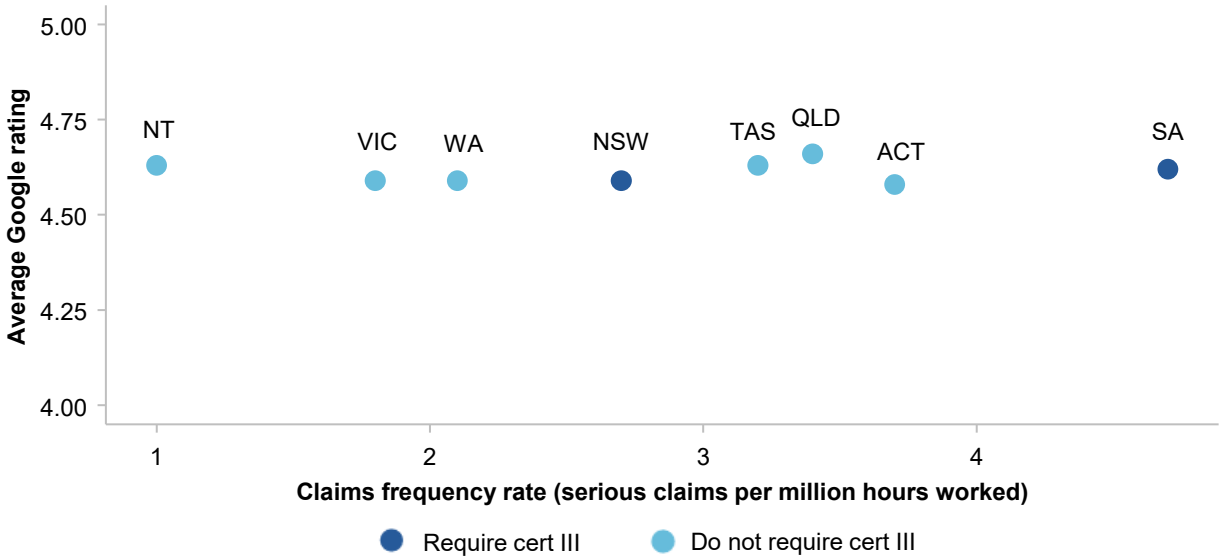
We identified opportunities for replacing excessive OER with less burdensome and more efficient alternatives by comparing the different approaches taken by Australian jurisdictions, and by considering alternatives that still protect workers and consumers.

For example, New South Wales and South Australia are the only jurisdictions that require hairdressers to have a certificate III. The lack of a strong relationship between service quality (based on Google ratings) and mandatory qualification requirements across states and territories (figure 4.3) means either that jurisdictions are using alternative regulations to achieve similar outcomes (box 4.4) or that OERs have limited impact. Further, New South Wales and South Australia have fewer hairdressers who are born overseas, relative to migrant representation in the general population, than do other states. These OERs in New South Wales and South Australia may present a barrier to employment for skilled overseas workers who would be employed in other states and territories (appendix B).

Evidence should guide OER reform. Box 4.6 explores existing licensing arrangements for motor vehicle repairers and provides evidence that questions whether they are more effective than other regulatory options for protecting consumers or workers. Other occupations that could be considered for reform include painters and decorators, and introduction agents – discussed in appendix B. Additional occupations should be examined to ensure that regulations are both evidence-based and proportional to risk. Appendix B provides a preliminary list of potential jurisdictional differences in OERs, which state and territory governments can use to start identifying occupations to consider replacing OERs with more efficient regulations.

Inquiry participants provided mixed feedback regarding OER reform. Many industry representatives for hairdressers, motor vehicle repairers, and air conditioning and refrigeration mechanics opposed reductions to OERs, citing safety and consumer protection concerns (PC 2025b). But there was some support for change – for example, the Insurance Council of Australia (sub. 97, p. 3) supported removing OERs for motor vehicle repairers given limited evidence that they improve outcomes. Hair and Beauty Australia (sub. 85, p. 5) recommended that if changes occur, alternative mechanisms should be put in place to maintain standards and protect consumers. The Australian Refrigeration Council (sub. 108, pp. 2–3) supported risk-based regulation, including restricted licensing pathways for working with split air conditioning systems (appendix B).

Figure 4.3 – Hairdresser safety and consumer satisfaction measures are not strongly correlated with qualification requirements



Unpublished workers' compensation claims data from the National Data Set for Compensation-based Statistics, 2008-09 to 2023-24, Safe Work Australia, for ANZSCO unit group 3911 (hairdressers). 2023-24 data is preliminary. Serious claims are accepted workers' compensation claims that have resulted in one or more working weeks lost. Accepted workers' compensation claims do not include claims involving fatality. Ratings data based on 990,000 Google reviews for 9,900 hairdressing businesses sourced from Google Places API, using 'hair' as the keyword. Further details in appendix C, section C.4.

Source: PC estimates based on Google Maps and Safe Work Australia data.

Box 4.6 – Motor vehicle repairers' licensing requirements

A licence to repair a motor vehicle is required in New South Wales, Western Australia and the Australian Capital Territory.[a] But it is unclear whether licensing improves service quality or worker safety over other forms of regulation. There was no strong correlation between the proportion of repaired vehicles sent back for rework (a measure of service quality) and the frequency of serious workers' compensation claims (a measure of worker safety), as the figure below shows. Very few repaired vehicles – less than 1% in all jurisdictions – are sent back for rework (Insurance Council of Australia, sub. 97, p. 3). Further, PC analysis suggests that average Google ratings across motor vehicle repair businesses in jurisdictions with licensing range from 4.67 to 4.70 – similar to the national average of 4.68.

Consumer protection laws and work health and safety laws help protect consumers and workers in unlicensed jurisdictions.

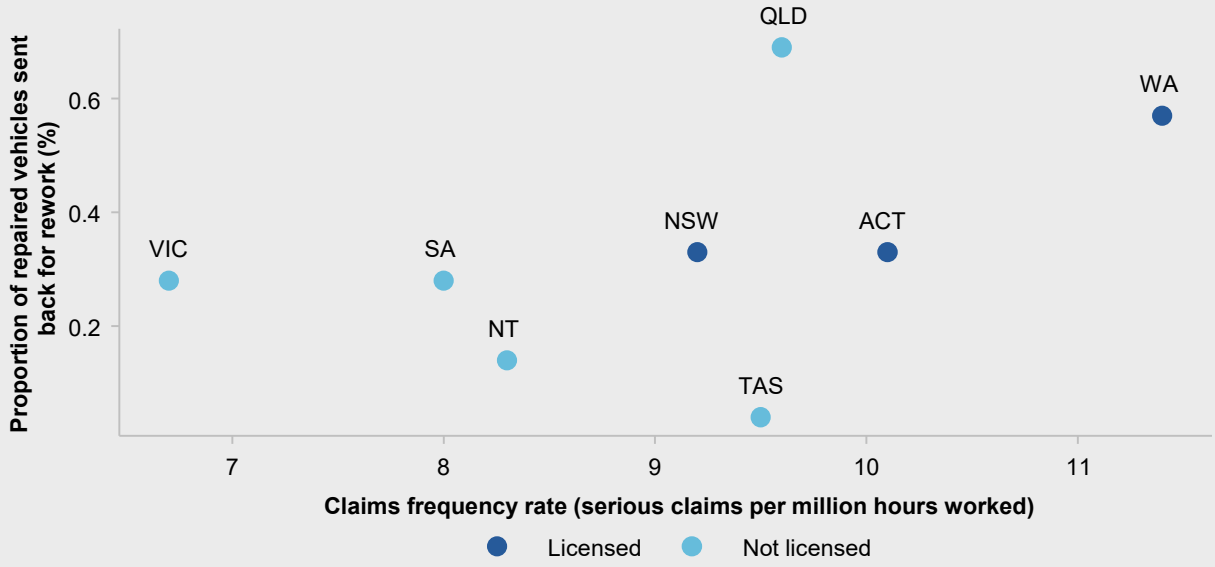
> Further protection exists where vehicles are repaired under insurance policies (which account for around 80% of motor vehicle smash repairs). In these cases, the General Insurance Code of Practice requires insurers to provide a lifetime guarantee on the quality of workmanship performed under an insurance claim. (Insurance Council of Australia, qr. 49, p. 5)

Alternatives to both OERs and general laws can also protect consumers and workers. South Australia has a mandatory code of conduct with fines for non-compliance (SBCSA 2023). Victoria's codes of conduct are voluntary through industry associations such as the Royal Automobile Club of Victoria or the Victorian Automobile Chamber of Commerce (CAV 2024).

Box 4.6 – Motor vehicle repairers' licensing requirements

Given that alternative consumer and worker protection mechanisms exist, New South Wales, Western Australia and the Australian Capital Territory should assess whether current licensing requirements for motor vehicle repairers remain fit for purpose, or whether options such as a code of conduct would be more suitable. Future mechanisms to protect consumers and workers should remain proportional to risk. For instance, if regulations are imposed on electric vehicle repair (as is being considered in New South Wales (NSW Government 2025)), less burdensome alternatives to OER should be considered.

Quality and safety metrics are not strongly correlated with licensing requirements



Source: 2024 vehicle repair quality data from Insurance Council Australia, qr. 49, pp. 5–6. Vehicle repair quality data for NSW and ACT data are combined. Unpublished workers' compensation claims data from the National Data Set for Compensation-based Statistics, 2008-09 to 2023-24, Safe Work Australia, for ANZSCO unit group 3212 (motor mechanics). 2023-24 data is preliminary. Serious claims are accepted workers' compensation claims that have resulted in one or more working weeks lost. Accepted workers' compensation claims do not include claims involving fatality.

a. Licensing requirements in the Australian Capital Territory apply only to motor vehicle repair businesses and do not include qualification requirements. This licence does not regulate employment in the occupation, however by creating a hurdle for new businesses to enter, it may reduce options for consumers and reduce employment opportunities for prospective workers.

Recommendation 4.1
Replace excessive occupational entry regulations with less burdensome alternatives

State and territory regulators should replace excessive occupational entry regulations with more efficient alternatives that continue to protect workers and consumers. Regulators should focus particularly on occupational entry regulations that exist in their jurisdiction but not in others. As a start, they should consider reforms for:

- motor vehicle repairers in New South Wales, Western Australia and the Australian Capital Territory
- hairdressers in New South Wales and South Australia
- painters and decorators in New South Wales, Victoria, Queensland, Western Australia and South Australia.

Targeting qualification requirements to risk

Qualification requirements are the biggest hurdle to entry for many workers. Education and training are essential to develop the skills to perform many occupations safely and in line with quality expectations. In many cases, regulated qualification requirements are justified. But trade-offs, including the financial and time costs of education or training for the aspiring worker, can be significant, and should be explicitly considered.

An overreliance on qualifications to assess a person's ability to perform a job – known as credentialism – can create a barrier to employment for capable candidates who lack qualifications, and consolidate traditional forms of learning and accreditation pathways (PC 2017b, p. 98). Inquiry participants raised some examples of growing credentialism (PC 2025b).

Excessive qualification requirements can also increase the costs of a service to consumers with little additional benefit, and severely limit the supply of workers in an occupation. Long training gaps are the primary driver of shortages in 41% of 114 occupations in national shortage (PC analysis using the Occupation Shortage List at unit group level (JSA 2025e)). These occupations have few qualified applicants for each job vacancy and require a certificate III or above (JSA 2024a, p. 5).

Qualification requirements should be imposed at the minimum level of education or training needed to achieve an acceptable level of competence.

Addressing credentialism in OERs

Australian, state and territory governments should consider whether qualification requirements in OERs match risk. There are opportunities to better target qualification requirements to risk across a range of professional and vocational occupations. For example, the Psychology Board of Australia is reviewing qualification requirements for psychologists to address training complexity and workforce shortages while maintaining quality standards (appendix B). Some states use restricted licences with lower qualification requirements to allow tradespeople to undertake lower-risk tasks within an occupation, for example, installing and decommissioning split system air conditioners within the broader field of air conditioning and refrigeration mechanics (appendix B).

Qualification requirements can be streamlined and better targeted to risks by removing requirements where appropriate and adopting more flexible licensing frameworks, such as modular or tiered licensing in some cases (box 4.7). For example, the Clean Energy Council (qr. 20, p. 4) suggested establishing an industrial electrician's licence, allowing apprentices to become qualified for industrial work without needing competencies in residential and commercial settings. The CFMEU Construction and General Division (sub. 191, p. 8) also noted examples of targeting high-risk work through task-based licences for scaffolders, riggers, doggers and crane operators. National Workforce Collaboration (sub. 65, pp. 7–8) pointed to the importance of qualification requirements for high-risk tasks, noting the use of micro-credentials ensure workers are sufficiently skilled for tasks such as feeding through a tube directly into the stomach. Inquiry participants identified further opportunities in licensing and qualification requirements for glaziers and electricians (PC 2025b).

Yet while flexible approaches to licensing can contribute to a more efficient and targeted regulatory environment, governments must balance the potential costs of such an approach. For example, narrower qualifications can make education, employment and regulatory systems more complex and may require workers to obtain extra qualifications and licences to switch between jobs currently covered by a single licence. Reforms to licensing must be undertaken in a coordinated way, or they could undermine labour mobility across Australian jurisdictions.

Box 4.7 – Considering risk-based licensing for registered company auditors

Registered company auditors (RCAs) examine and report on the financial statements of an organisation to ensure they accurately reflect its financial position. The Australian Securities and Investment Commission licenses and regulates RCAs. To qualify for a licence, an applicant must complete at least a three-year accounting qualification; at least a two-year law qualification; a prescribed course in auditing; and a logbook of experience in auditing competencies in the past three to five years (ASIC 2016).

CPA Australia (qr. 68, pp. 4–5) suggested the requirements were prohibitively restrictive and prevented new entrants. In 2024-25, only 23% of applications for RCAs, authorised audit company and self-managed superannuation fund auditor licences were approved (ASIC 2025, pp. 76, 96). Over the 20 years to 2025, the number of RCAs declined from over 7,000 to about 3,200, while demand for services has increased (CPA Australia, qr. 68, p. 4). Moreover, CPA Australia (qr. 68, p. 5) noted:

> RCA entry requirements are designed for large, complex, and high-risk audits, such as those of listed companies or multinational enterprises. The current rigorous entry requirements are appropriate for such audit engagements, however, RCAs are also required by different laws, regulations and procedures to undertake lower-risk audits. The RCA entry requirements are not appropriate for these audits, and adds to the costs of those being audited.

By contrast, New Zealand provides two tiers of licensing (CA ANZ 2025b). Qualified auditors can complete lower-risk assurance activities. To be eligible, applicants must demonstrate 300 to 500 days of practical audit experience in the previous five years. Meanwhile, licensed auditors are required for higher-risk assurance activities, such as for listed companies, banks and insurers. Qualification requirements for licensed auditors are just as restrictive as they are for RCAs in Australia.

Chartered Accountants Australia and New Zealand (sub. 203, p. 30) suggested that an alternative design to the two-tier New Zealand model could be implemented in Australia.

The Australian Government should consider a more nuanced approach to licensing RCAs. Some work is in progress – since August 2025, an Auditor Review Working Group has explored the demand for and suitability of the current RCA approach, and alternative pathways and competency-based assessments for prospective auditors (FRC 2025).

Recommendation 4.2
Better target qualification requirements to risk

Australian, state and territory governments should assess whether current regulated qualification requirements for occupations are proportionate to risks, and identify opportunities to streamline qualification requirements or use more modular or tiered licensing systems to target risk.

To begin, revised qualification requirements should be considered:

- by the Australian Government for registered company auditors by creating a simpler requirement for lower-risk assurance activities
- by the New South Wales Government for air conditioning and refrigeration mechanics by introducing a restricted licence for installing and decommissioning split systems.

Expanding entry pathways while ensuring competence

Most regulated, trade-based occupations require the completion of an apprenticeship, creating a bottleneck in the supply of qualified workers. Shortages are most pronounced and persistent in these occupations (JSA 2023, pp. 54–55), and large increases in demand, notably in construction and clean energy, are expected to exacerbate shortages in coming years (DEWR 2024, pp. 41–42).

Apprenticeship pathways create successful outcomes for many: 95% of trade apprenticeship completions resulted in employment in 2021 (NCVER 2022, p. 2). They are a key pathway to developing a skilled workforce (DEWR 2024, p. 35) and are strongly supported.[71] But declining apprenticeship uptake and high attrition rates suggest that alternative entry pathways are worth exploring. In 2023, only 54.1% of trade apprentices completed their apprenticeship (NCVER 2024).[72]

Barriers to the uptake and completion of apprenticeships exist on both the demand and supply side (PC 2020a). Employers cite poor-quality and irrelevant training, high supervision costs and the risks of non-completion (DEWR 2024, p. 67). Individuals may not undertake or complete apprenticeships because of low pay, workplace challenges (poor working conditions, harassment or lack of support), rigid training structures and negative perceptions (AMWU, sub. 122, pp. 6–7; DEWR 2024, pp. 81, 187). A lack of qualified vocational education and training (VET) teachers, particularly in regional and rural areas, can also create a bottleneck for students looking to access apprenticeships (MEA, qr. 95, p. 5; Skills Insight, sub. 107, p. 16).

The Australian Government is seeking to improve apprenticeship policies through work such as the *Strategic review of the Australian Apprenticeship Incentive System* (Strategic Review) (DEWR 2024) and *Unlocking the potential of VET: Improving the relevance and transferability of Vocational Education and Training qualifications* (QRDG 2024). The Strategic Review recommended more targeted employer incentives, improved support for apprentices and greater use of group training organisations to improve apprenticeship outcomes. Following the signing of the National Skills Agreement, Australian governments are also reforming VET qualifications to allow more flexibility and to place a greater emphasis on broader capabilities to assist lifelong learning and workforce mobility (QRDG 2024).

A number of inquiry participants (BCA, sub. 67; ETU, sub. 69) echoed the recommendations of the Strategic Review and called for greater use of high-performing group training organisations, where research has found consistently higher apprenticeship completion rates (DEWR 2024, p. 60; O'Dwyer and Korbel 2019).

Outside of trade-based occupations, new flexible pathways are allowing entry into some occupations without a university degree, for example, through foundation training for accountants (CA ANZ 2025a).

While traditional apprenticeship pathways remain important for most students, current apprenticeship pathways may not be the best way to promote entry into trades for all.

Explore opportunities for accelerated apprenticeships

Ongoing skill shortages in trades provide a strong motive to explore alternative entry pathways to broaden access to these occupations. Accelerated apprenticeships may enable a larger demographic of workers to access trades roles without compromising quality.

Existing avenues for accelerated learning are underused. Competency-based progression (CBP) and recognition of prior learning can in theory reduce apprenticeship lengths but are rarely practised (NSW PC 2021, pp. 100–101; PC 2020a, p. 356). While some awards contain provisions for CBP, the *Plumbing and Fire Sprinklers Award*

[71] ACTU, sub. 209; AEU Federal Office, sub. 119; AMWU, sub. 122; ETU, sub. 69; NAAA, sub. 73; PICAC, sub. 180.
[72] Individual completion rate four years after commencement for all trade occupations.

2020, *Electrical, Electronic and Communications Contracting Award 2020*, *Mining Industry Award 2020* and *Hair and Beauty Industry Award 2010* still do not provide CBP. Its exclusion in awards also affects its provision in workplace agreements. None of the 432 workplace agreements approved in 2024 that were underpinned by the *Plumbing and Fire Sprinklers Award 2020* contained provisions for CBP. Only about 13% of agreements underpinned by the *Building and Construction General On-site Award 2020* provided CBP (PC analysis using Department of Employment and Workplace Relations, Workplace Agreements Database 2025).

Accelerated apprenticeship programs have been developed for some occupations in some jurisdictions.

- The Master Builders Association of NSW provides an accelerated apprenticeship pathway for carpentry (nd). The program enables mature-age workers to complete their apprenticeship in about two years of training, compared with the standard three years, traditional for the building and construction industry. Completion rates of about 56% since the program started in 2016 (MBA NSW, pers. comm., 7 November 2025) are comparable to individual completion rates for construction trades workers generally (NCVER 2024).
- The South Australian Government will launch its Industry Accelerated Apprenticeship Pilot in 2026, fast-tracking apprenticeships for 1,000 candidates across seven trade-based occupations (SASC 2025a). The occupations were chosen to support workforce needs in defence, infrastructure, housing and hospitality, and informed by early completion data (SASC, sub. 226, pp. 5–6). Apprenticeship durations will be shortened by 12 to 18 months.
- BHP's FutureFit Academy offers two-year apprenticeships for polymer processing/conveyor belt splicing, auto electrical and boilermaking/fabrication (BHP 2024) – all which typically take three to four years.

Accelerated apprenticeships are not universally supported. Employers may not support shorter training times because they reduce the period in which a worker is highly productive while still receiving lower apprentice wages – a period that compensates employers for the upfront costs. Inquiry participants also raised concerns about potential safety implications and erosion of standards that may arise from fast-tracking apprenticeships (ETU, sub. 69, p. 7; KU Children's Services, sub. 173, p. 7; MEA, sub. 94, p. 19). There appears to be a greater level of comfort with accelerated learning for mature-age apprentices and those with previous industry or trade experience (PC 2025b) – perhaps because these workers require less induction and training in general workplace expectations and behaviours.

Overcoming the misalignment of incentives and implementation concerns will be important. The Strategic Review (DEWR 2024, pp. 266–269) called on Jobs and Skills Councils (JSCs) to develop fast-tracked apprenticeships, especially in areas such as clean energy, care and support and construction. JSCs are well-placed to support the development of accelerated apprenticeships, given their industry expertise and convening powers across government, employers and unions. Off-the-job training requirements, including the timing and structure of training and assessment requirements, will also need to be carefully considered. A well-designed development process, supported by tripartite collaboration, is essential to identify which occupations are suitable for shortened apprenticeships, and the extent to which they can be reduced, while ensuring all competencies are met.

Expand non-apprentice pathways into trades

The current reliance on apprenticeship qualifications fails to recognise the skills many workers already possess, and the non-apprentice pathways through which they may develop them. Several inquiry participants endorsed greater use of skills recognition pathways (PC 2025b).

In 2025, the Australian Government committed $78 million to its Advanced Entry Trades Training program to help experienced workers gain relevant qualifications in trade-based occupations, including construction, where more than 35% of workers currently have no formal qualification (NSC 2020, p. 6; PBO 2025). The program, to be implemented by state and territory governments, is modelled after a successful New South Wales pilot (Trade Pathways for Experienced Workers Program). The NSW program helped address barriers to attaining formal qualifications, contributing to a 56% increase in non-apprenticeship training commencements through the

program, while 76% of participants reported career advancement after the training (NSW Department of Education, pers. comm., 17 November 2025). South Australia's Occupational Recognition Service is also looking to recognise skills and knowledge gained outside an apprenticeship or traineeship (SASC 2025b).

Inquiry participants highlighted the importance of competency assessments in alternative entry pathways to maintain rigour (Ashlee Glazbrook, sub. 151, p. 2; ASQA, sub. 146, p. 7; PICAC, sub. 180, p. 4). The PC's *Shifting the Dial* report (2017, p. 100) recommended independent assessment to robustly test the skills acquired outside traditional settings. The Australian Manufacturing Workers' Union (sub. 122, p. 9) favoured an approach like that of Canada's Red Seal program, which provides independent assessments of apprentices and experienced workers seeking accreditation. The Red Seal program is similar to Victoria's use of independent assessment for plumbing (box 4.8), while also facilitating mutual recognition.

Better recognition of existing skills would increase the scope of work that otherwise unqualified workers are allowed to undertake, and improve entry pathways for migrant workers.

Box 4.8 – The Victorian Building and Plumbing Commission model

The Building and Plumbing Commission (BPC) (Victoria's industry regulator) provides multiple pathways for registration of plumbers, including an experience (non-apprenticeship) pathway that requires a combination of qualifications and four years of relevant work experience. Applicants must complete a BPC-administered exam of registration competencies for their chosen class(es), among other requirements (DELWP 2018, p. 153).

Competency exams ensure that all applicants are independently assessed before they are registered. The exams assess whether applicants can use and interpret relevant codes and standards correctly, read and interpret drawings, and perform practical plumbing tasks safely and to meet compliance requirements. This approach helps to protect consumers and workers against poor quality plumbing work.

Applicants seeking registration via the experience pathway[a] are generally migrants with verifiable qualifications and experience; workers with interstate experience who have not completed a plumbing apprenticeship; workers with experience in an unfinished apprenticeship or under a provisional registration; or workers with a registration/licence in another trade (such as electricians) who only want a restricted registration or licence to do specific restricted work (BPC, pers. comm., 16 July 2025).

BPC data indicates that from 2017-18 to 28 April 2025, the experience pathway accounted for one in five registrations (BPC, pers. comm., 16 July 2025).

In 2021, Victoria had about 43 plumbers per 10,000 residents compared with the national average of 32, and 1,660 hours worked by plumbers per 10,000 residents compared with the national average of 1,166 hours (PC analysis of ABS Census of Population and Housing 2016a, 2021b). Data from Safe Work Australia also indicates that Victorian plumbers have fewer serious workers' compensation claims than other jurisdictions (7.1 serious claims per million hours worked compared with a national average of 9.4).[b,c] It is important to note that licensing is only one of many forms of regulation impacting workplace health and safety, and it is unclear how different licensing regimes might impact outcomes.

a. Applicants are often seeking registration in a single class of plumbing work only (such as roofing work) or in a narrow component of a single class (such as fire protection work restricted to routine servicing of fire hose reels). **b.** Plumbers identified by ANZSCO unit group 3341 in these datasets may not align with registered and licensed plumbers identified by BPC. **c.** Unpublished workers' compensation claims data from the National Data Set for Compensation-based Statistics, 2008-09 to 2023-24, Safe Work Australia for ANZSCO unit group 3341 (plumbers). 2023-24 data is preliminary. Serious claims are accepted workers' compensation claims that have resulted in one or more working weeks lost. Accepted workers' compensation claims does not include claims involving fatality.

Jobs and Skills Councils can support pilots of alternative pathways

Implementing proposed alternative approaches to trades must be carefully planned. Several participants have expressed concern that such approaches risk lowering standards (ETU, sub. 69, p. 7; KU Children's Services, sub. 173, p. 6; NAAA, sub. 73, p. 2). Reconfiguring how registered training organisations deliver accelerated apprenticeships is a more straightforward administrative task, but other challenges, such as overcoming attitudes and cultural norms within industry, will be more complex (McDowell et al. 2011, p. 92; PC 2020b, p. 357; WRC 2012). In addition, any changes must not undermine the implementation of other initiatives such as AMR.

Alternative pathways should be co-designed with input from industry, unions and governments (BKI, sub. 99, p. 2; RMIT University, sub. 95, p. 13). In addition, experimentation using pilot programs allows new initiatives to be tested and evaluated, and if successful, supports greater acceptance across industry.

JSCs are well placed to design and oversee pilot initiatives that broaden pathways into trades. JSCs can support a coordinated approach to piloting different initiatives across different industries, enabling findings and lessons to be shared. They can also play a key role in encouraging the expansion and adoption of successful models – both those they lead directly and those developed by other organisations. The Department of Employment and Workplace Relations can also play a role in the initial stages by working with jurisdictions and JSCs to help identify which qualifications are most suitable for alternative entry pathways.

Recommendation 4.3
Expand entry pathways into trades

Jobs and Skills Councils, in consultation with the Australian Government Department of Employment and Workplace Relations and state and territory governments, should identify trade-based occupations that are most suitable for alternative entry pathways such as accelerated apprenticeships or expanded non-apprentice pathways and undertake projects to develop and pilot alternative entry pathways in these areas.

Jobs and Skills Councils should use existing collaborative forums to share information and evidence on alternative entry pathways among themselves and across the broader Vocational Education and Training system.

Alignment with migration skills assessments

Migration has been an important channel for augmenting the domestic workforce for many years, but migrants face several barriers to fully using their existing skills. Different groups of migrants face different challenges to have their skills and qualifications recognised.

- For skilled migrants, duplication in skills assessment and recognition processes mean it can take a long time to have skills recognised, sometimes at significant cost (Department of Home Affairs 2023b, p. 158).
- For others such as family, humanitarian and secondary skilled migrants, skills often go unrecognised, making it hard to break into employment (Department of Home Affairs 2023b, p. 160).

Despite the existence of mutual recognition arrangements with some countries and for some occupations (DEWR 2025c), current arrangements for migrant skill and qualification recognition are complex, expensive and time consuming for most.

There are separate processes for obtaining a skills assessment for visa purposes (administered via one of 39 Skilled Migration Assessing Authorities, each of which sets its own requirements and fees (DEWR 2025a)), and a licence or registration to work in a registered occupation (Department of Home Affairs 2023b, p. 158).

Skilled migrants working in licensed occupations may also have to undertake Minimum Australian Context Gap training to learn about local requirements and conditions. While performing an important function, these bridging courses increase the delay before skilled migrants can begin work, and they can be costly. For example, the gap training for a refrigeration and air conditioning qualification costs upwards of $7,000 and can take six to 12 months to complete (Get Skilled Training 2023; Superior Training Centre 2025). Where no single nationally accepted course exists (as is currently the case for plumbers, although one is being developed (BuildSkills Australia 2024)), migrants are required to meet jurisdictional requirements to demonstrate their skills and experience.

Skilled migration pathways have been heavily scrutinised in recent years (for example, Barker and Tofts-Len 2024; Department of Home Affairs 2023a; Parliament of Australia 2024a; PC 2023a; Unions NSW and MWC 2023). The PC (2023b, p. 81) most recently examined this issue in its *Advancing Prosperity* report and recommended that:

> Australian governments and regulators should coordinate to align skilled migration requirements with occupational license recognition requirements, including by removing duplication of assessment where possible.

Recently released Guiding Principles and Standards for Skilled Migration Assessing Authorities encourage assessing authorities to align requirements with those for registration or licensing (DEWR 2025b). Further work to better recognise the skills and qualifications of migrants emerged from the recent Economic Reform Roundtable, with Treasurers agreeing to work on embedding occupational licensing within the skills assessment process required for skilled visas (Chalmers 2025a). The PC continues to endorse progress in this direction.

Recommendations to address the disconnect between skills assessment and OERs also align with the second proposed reform area in Settlement Services International's *Activate Australia's Skills* campaign, which seeks to create a more seamless process that links skills recognition for migration purposes with licensing and accreditation for employment purposes (Jiang and Nguyen 2024, p. 20).

For migrants in Australia looking to enter trades (including migrants who did not enter via a skilled migration pathway), non-apprenticeship pathways, including practical assessments for experienced candidates (previously discussed) could support more efficient licensing. Improved recognition of prior learning processes (chapter 2) could also better enable migrants to use their existing skills and experience.

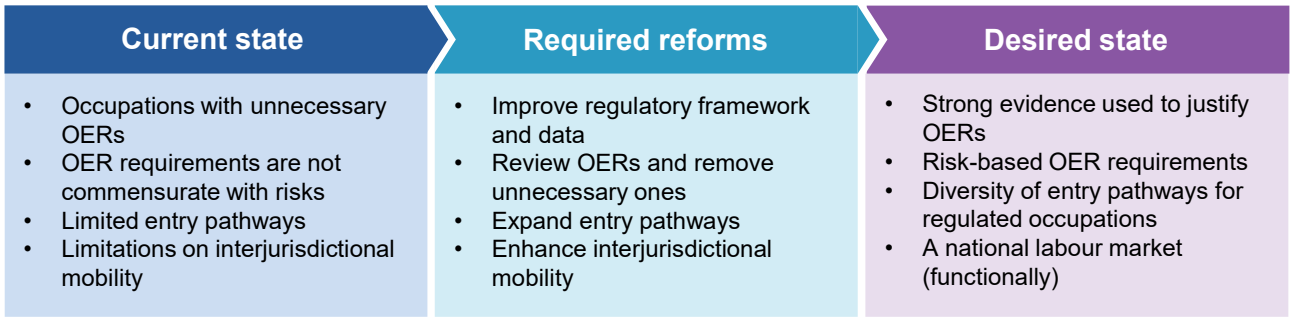
Governance is vital to reducing inappropriate OERs

Australian governments should seek to ensure that occupations are only licensed if OERs provide the least cost solution to address the inherent risks. Licensing and qualification requirements must also be commensurate with the risks of the occupation, and regulated occupations need to provide a diversity of entry pathways (figure 4.4). To achieve the desired outcomes, governments must:

- improve the regulatory system that administers OERs, including enhanced data collection to establish an evidence base
- review OERs and replace ones that are not fit for purpose with more efficient alternatives, and ensure that remaining requirements are commensurate with the risks
- look for opportunities to expand entry pathways to regulated occupations.

Despite the many challenges, Australian governments should seek to create a national labour market, allowing unimpeded mobility of workers in the long term.

Figure 4.4 – National reform pathway for OERs



Current mechanisms are not delivering efficient policy reform

Regulatory impact assessments and regular review of legislation by regulatory stewards, including through sunsetting review (PC 2025f), have the potential to prevent licensing creep and address legacy licensing. Regulatory impact assessments should provide a balanced analysis of policy options and the likely impact of new or amended regulations (PM&C 2020).

Regulations should be regularly reviewed by regulatory stewards to ensure that they are meeting their objectives (PC 2025f). One mechanism for this is sunsetting provisions that automatically repeal regulations after a set period (usually five or 10 years), unless exempted or remade. The goal is to ensure that regulations are regularly reviewed and retained only if relevant (Argument 2019, p. 38).

Yet these policy instruments are not fulfilling their potential. In the first instance, OERs are sometimes introduced in advance of detailed assessment of evidence. For example, the ACT Government is extending licensing requirements to several trades following an election commitment (ACT Government 2025; ACT Labor 2024, p. 45); one is painting and decorating for which there is no evidence of benefit in states where the trade is already licensed (appendix B). Where evidence is assessed, a lack of data can hamper decision making. The PC (2023a, p. 74) found that regulatory impact assessments of OERs relied too much on anecdotal evidence and unsubstantiated judgement calls about their net benefits. CEDA (sub. 104, p. 2) highlighted the 'need for more analysis of the costs and benefits of licensing of different occupations, against a counterfactual of more tightly targeting licensing and relying on other remedies such as consumer protection laws or regulating outputs'. A lack of data to effectively estimate the market impacts of regulation has contributed to the poor quality of assessments, despite a growing body of international evidence that indicates these impacts can be significant (box 4.2). The result is that it can be much easier to show the benefits of regulations than their direct and indirect costs.

Consultations also raised concerns about who is best placed to undertake a regulatory impact assessment. Regulators responsible for a proposed or sunsetting regulation usually play that role. But regulators may not be best placed to assess the net benefits of different regulatory options.

Implement better governance processes for efficient OERs

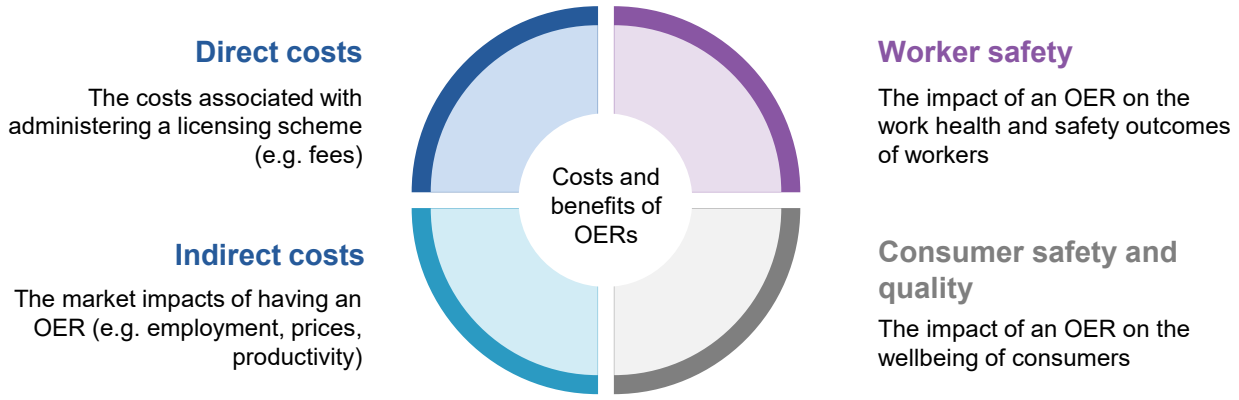
The *Intergovernmental Agreement on National Competition Policy* (NCP) provides a mechanism to pursue improvements to OERs, identifying and addressing those that are not fit for purpose, and promoting AMR. Participants endorsed the use of the NCP to reform OERs.[73] However, the Australian Institute of Company Directors (sub. 206, pp. 14–15) suggested that NCP funding will need to be substantially increased, noting the significant revenue that states and territories may forego from removing licensing. CEDA (2025, p. 14)

[73] AICD, sub. 206, p. 2; ASBFEO, sub. 211, p. 5; ARC, sub. 108, p. 2; CEDA, sub. 104, p. 3.

estimated that state and territory regulators receive $500 million per year from licensing and registration fees, which could be a useful starting point for considering an appropriate increase to NCP funding. Yet OER reforms would only reduce this income by a margin. Losses in revenue would be greater where licensing or registration requirements are removed altogether but could be minimal where qualification requirements are reduced or removed (and no revenue is currently accrued) or licensing structures altered.

When new regulations are introduced, high-quality data should be collected over the life of the regulation to inform its review. For OERs, worker and consumer safety will be the main outcomes of interest, along with the impact of regulations on prices, employment and service availability (figure 4.5). Regulators should identify administrative datasets, such as Safe Work Australia data, that provide useful insights, and design collection processes, such as surveys, where the benefits are likely to outweigh the additional costs. The Australian Centre for Evaluation (Treasury 2024) and state- and territory-based central agencies or independent authorities could help regulators to design appropriate data collection and policy evaluation processes.

Figure 4.5 – Data is required to understand the costs and benefits of OERs



Australian governments should improve review processes and make a greater effort to sunset OERs that do not provide a net benefit. If they were provided with a stronger stewardship role over their field (PC 2025f), regulators would undertake more regular, targeted reviews of OERs. As recommended by the PC (2023a, p. 87), systematic regulatory reviews by an independent authority could also identify unnecessary legacy licensing. State and territory treasury departments, or other government authorities responsible for regulatory policy advice, should work with licensing regulators to review OERs in their jurisdictions. This would allow reviews to incorporate both industry-specific regulator expertise and general principles of best-practice regulation that treasury departments often provide. The Australian Government Office of Impact Analysis – led by an independent statutory commissioner (PC 2025f) – could support best-practice impact assessment.

Getting the policy framework right for OERs is not only about removing inefficiencies in existing licences or preventing current licensing arrangements from becoming unduly stringent. It is also about providing a sound basis for regulating occupations that will emerge in future.

Recommendation 4.4
Incentivise occupational entry regulation reform through National Competition Policy

The Australian Government should use the National Competition Policy process to incentivise reform of occupational entry regulations (OERs) at the state and territory level. The process should seek to:

1. improve the regulatory systems that administer OERs, including by enhancing data collection to establish a stronger evidence base for decision making
2. review OERs and remove any that are not fit for purpose. Any remaining requirements should be commensurate with identified risks
3. look for opportunities to expand entry pathways to regulated occupations.

State and territory treasury departments, or other government authorities responsible for regulatory policy advice, should work with licensing regulators to jointly review OERs in their jurisdictions. These reviews should remove regulations deemed to be excessive and not proportional to risk. They should draw on joint expertise on industry and licensing, as well as principles for best practice regulation, and data to inform the costs and benefits of the regulations.

Licensing regulators and treasury departments should undertake sunset reviews of OERs on a scheduled basis. State and territory governments should also perform independent reviews to identify OERs that are no longer fit for purpose.

Appendices

A. Public consultation

This appendix outlines the consultation process and lists the organisations and individuals who participated in the inquiry. The Productivity Commission received the terms of reference for this inquiry on 13 December 2024 and consulted with 100 individuals and organisations (table A.1). A consultation questionnaire was released on 19 May 2025 seeking feedback on specific aspects of our policy reform areas. The interim report was released on 11 August 2025, with feedback invited via a call for submissions. In total, 226 submissions (table A.2) and 95 questionnaire responses (table A.3) were received. Read the submissions and questionnaire responses.

The PC would like to thank everyone who has participated in this inquiry.

Table A.1 – Consultations

Participants
Architects Australia
Australian Capital Territory City and Environment Directorate
Australian Capital Territory Education Directorate
Australian Council of Trade Unions (ACTU)
Australian Curriculum, Assessment and Reporting Authority (ACARA)
Australian Education Research Organisation (AERO)
Australian Education Union Federal Office (AEU Federal Office)
Australian Health Practitioner Regulation Agency (Ahpra)
Australian Industry Group (Ai Group)
Australian Institute for Teaching and School Leadership (AITSL)
Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW)
Australian Government Department of Education (DoE)
Australian Government Department of Employment and Workplace Relations (DEWR)
Australian Government Department of Health and Aged Care (DoHAC)
Australian Government Department of Prime Minister and Cabinet (PM&C)
Australian Government Treasury
Australian Hairdressing Council (AHC)
Australian National University (ANU)
Australian Public Policy Institute (formerly the James Martin Institute for Public Policy)

Participants
Australian Publishers Association (APA)
Australian Refrigeration Council (ARC)
Australian Skills Quality Authority (ASQA)
Building Commission New South Wales
BuildSkills Australia
Business Council of Australia (BCA)
Centre for Economic Development Australia (CEDA)
Clean Energy Council
Coalition of Peaks (CoPS)
e61
EdReports
Education Services Australia (ESA)
Engagement Institute (formerly IAP2 Australasia)
Engineers Australia
Financial Reporting Council (FRC)
Future Skills Organisation
Grattan Institute
HumanAbility
Indeed Global Policy
Independent Education Union of Australia (IEUA)
Independent Schools Australia (ISA)
Insight Education
Jobs and Skills Australia (JSA)
Leslie Loble AM
Master Builders Association NSW
Master Builders Australia
Master Electricians Australia (MEA)
Microsoft
MortarCAPS
My eQuals
National Aboriginal and Torres Strait Islander Education Corporation (NATSIEC)
National Aboriginal Community Controlled Health Organisation (NACCHO)
National Australian Apprenticeships Association (NAAA)
National Catholic Education Commission (NCEC)

Participants
National Centre for Vocational Education Research (NCVER)
National Indigenous Australians Agency (NIAA)
National Indigenous Employment and Training Alliance (NIETA)
National Women's Alliances
New South Wales Department of Education
New South Wales Fair Trading
New South Wales Treasury
Northern Territory Department of Education and Training
Nous Group
Oak National Academy
Ochre Education
Portable
Powering Skills Organisation
Prof. Andrew Norton
Prof. Jeff Borland
Prof. Kevin Fox
Prof. Peter Dawkins AO
Prof. Robert Breunig
Public Skills Australia
Queensland Curriculum and Assessment Authority (QCCA)
Queensland Department of Education
Queensland Department of Treasury
Queensland Office of Fair Trading
Reserve Bank of Australia (RBA)
RMIT University
Seek
Service and Creative Skills Australia (SACSA)
Settlement Services International (SSI)
Skills Insight
Skills New South Wales
South Australian Consumer and Business Services
South Australian Department of Education

Participants
South Australian Department of Treasury and Finance
South Australian Skills Commission
Tasmanian Department of Education, Young People and Children
Tertiary Education Quality Standards Agency (TEQSA)
Universities Admissions Centre (UAC)
Universities Australia
Victorian Building Authority (now part of the Victorian Building and Plumbing Commission)
Victorian Department of Education and Training
Victorian Department of Jobs, Skills, Industry and Regions
Victorian Department of Treasury and Finance
Victorian Skills Authority
Western Australian Department of Education
Western Australian Department of Local Government, Industry Regulation and Safety
Western Australian Department of Treasury and Finance
Woolworths Group

Table A.2 – Submissions

Participants	Sub no.
Accenture	176
Advanced Pharmacy Australia (AdPha)	168
Advocating for Children with Disability (ACD)	5
Aged Care Research & Industry Innovation Australia (ARIIA)	114
Aged Care Workforce Remote Accord (ACWA)	98
AI Commons for Education (AI Commons)	149
Air Conditioning and Mechanical Contractors' Association of Australia (AMCA)	110
Alethux	204
Amazon	31, 188
Andrew Smith	87
Angus Lyttle	56
Ashlee Glazbrook	151
Ausfilm	177
Australasian Institute of Mining and Metallurgy (AusIMM)	2
Australian Academy of Science (AAS)	35, 213

Participants	Sub no.
Australian Association for Research in Education (AARE)	132
Australian Automotive Aftermarket Association (AAAA)	102
Australian Catholic University (ACU)	170
Australian Chamber of Commerce and Industry (ACCI)	20, 126
Australian College of Nursing (ACN)	194
Australian Council of Social Service (ACOSS)	25
Australian Council of Trade Unions (ACTU)	30, 209
Australian Curriculum, Assessment and Reporting Authority (ACARA)	186
Australian Digital Inclusion Alliance (ADIA)	58
Australian Education Research Organisation (AERO)	92
Australian Education Union Federal Office (AEU Federal Office)	119
Australian Glass and Window Association (AGWA)	100
Australian Hairdressing Council (AHC)	72
Australian HR Institute (AHRI)	130
Australian Industry Group – Centre for Education and Training (CET)	103
Australian Information Industry Association (AIIA)	6
Australian Institute of Company Directors (AICD)	19, 206
Australian Institute of Project Management (AIPM)	51
Australian Learning Lecture (ALL)	60
Australian Livestock and Rural Transporters Association (ALRTA)	199
Australian Logistics Council (ALC)	66
Australian Manufacturing Workers' Union (AMWU)	122
Australian Multicultural Health Collaborative	147
Australian Psychological Society (APS)	201
Australian Publishers Association (APA)	141
Australian Refrigeration Council (ARC)	108
Australian Retailers Association & National Retail Association (ARA & NRA)	22, 184
Australian Secondary Principals' Association (ASPA)	82
Australian Skills Quality Authority (ASQA)	146
Australian Small Business and Family Enterprise Ombudsman (ASBFEO)	211
Australian Sustainable Built Environment Council (ASBEC)	88
Australian Technology Network of Universities (ATN Universities)	26, 160

Participants	Sub no.
Australian Academy of Technological Sciences & Engineering (ATSE)	15
AXiLe Informatics	207
Barbara Preston	76
Belinda Tobin	79
Bendigo Kangan Institute (BKI)	99
Big Picture Learning Australia (BPLA)	68
Bond University	61
Brotherhood of St. Laurence (BSL)	90
Business Council of Australia (BCA)	17, 67
Career Industry Council of Australia (CICA)	64
Carers Australia	125
Centre for AI, Trust and Governance, University of Sydney	217
CFMEU Construction and General Division	191
Chamber of Commerce and Industry Western Australia (CCIWA)	24
Chamber of Minerals and Energy Western Australia (CMEWA)	120
Chartered Accountants Australia and New Zealand (CA ANZ)	203
CheckUP Australia	134
Children's Cancer Institute (CCI)	57
Civil Contractors Federation Australia Ltd (CCF)	11
Coca-Cola System	18
Committee for Economic Development of Australia (CEDA)	104
Commonwealth Bank of Australia (CBA)	33
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	181
Confio Pty Limited	36
Consult Australia	101
Consumer Healthcare Products Australia (CHP Australia)	223
Copyright Advisory Group - Schools (CAG Schools)	171
Copyright Advisory Group - TAFE (CAG TAFE)	172
Copyright Agency	152
Council of Australian Postgraduate Associations (CAPA)	150
Council of Small Business Organisations of Australia (COSBOA)	29, 124
CPA Australia Ltd (CPA Australia)	137
Culturally Nourishing Schooling Project (CNS)	140

Participants	Sub no.
Dairy Australia	216
David Lee	50
Dementia Australia	3
Digital Health Cooperative Research Centre (DHCRC)	219
Disability Employment Australia (DEA)	148
Education Services Australia (ESA)	75
Electrical Trades Union of Australia (ETU)	69
Employment Hero	162
Endpoint Strategy Pty Ltd (trading as Test-Ed)	192
Engineers Australia	187
Erica Smith	113
Financial Advice Association Australia (FAAA)	135
Fiona Nash	70
Fiona Richards	80
Fortinet	205
Frances Barraclough	63
Future Skills Organisation (FSO)	154
Future Smart Strategies	55
Good Things Foundation Ltd (Good Things Australia)	175
Grattan Institute	159
Greg Strangman	178
Hair and Beauty Australia (HABA)	85
Heavy Vehicle Industry Australia (HVIA)	8, 196
HMS Community Homecare and Clinic	77
Housing Industry Association (HIA)	118
HumanAbility	4, 169
Ian Cornford	116
Independent Education Union of Australia (IEUA)	86
Independent Higher Education Australia (IHEA)	23
Independent Schools Australia	225
Independent Tertiary Education Council Australia (ITECA)	96
Indigenous Allied Health Australia Ltd (IAHA)	145
Industry Skills Australia	112

Participants	Sub no.
Institute of Public Accountants	13, 155
Institute of Public Affairs	136
Insurance Council of Australia (ICA)	97
Internet Association of Australia Ltd (IAA)	183
Investor Group on Climate Change (IGCC)	117
James Trevelyan	45
Jason Lodge	78
Jet Akkermans-Pearce	163
John Kennedy	49
John Seddon	1
KU Children's Services	173
Laurel Baglee	62
Lite n Easy	7
Master Builders Australia	32, 215
Master Electricians Australia (MEA)	93, 94
Master Plumbers Australia and New Zealand (MPANZ)	158
Max Vardanega	218
Michele Lemmens	167
Michele Madigan	47
Microsoft	208
MortarCAPS Higher Learning Data Standard Ltd (MortarCAPS)	40
Motor Traders' Association of New South Wales (MTA NSW)	115
MYSKILLSmanager	44
National Aboriginal Community Controlled Health Organisation (NACCHO)	37, 189
National Australia Bank (NAB)	210
National Australian Apprenticeships Association (NAAA)	73
National Electrical and Communications Association (NECA)	14
National Growth Areas Alliance (NGAA)	197
National Road Transport Association (NatRoad)	105
National Workforce Collaboration (NWC)	65
NewDirection Care	21
NSW Farmers	10
Ochre Education	81

Participants	Sub no.
Office of the Victorian Information Commissioner (OVIC)	222
Open Welding (OW)	39
Paul White	165
Peter Mickan	144
Philip Nichol	46
Plumbing Industry Climate Action Centre (PICAC)	180
Powering Skills Organisation Ltd (PSO)	221
Primary English Teaching Association Australia (PETAA)	59
Public Skills Australia	182
Queensland Catholic Education Commission (QCEC)	121
Queensland Conservatorium Griffith University (QCGU)	84
Queensland University of Technology (QUT)	83
QUT Centre for Inclusive Education (C4IE)	143
Raymond Muddle	38
ReadyTech	27
Regional Australia Institute (RAI)	16, 200
Research Australia (RA)	179
Restaurant and Catering Industry Association of Australia Incorporated (R&CA)	111
RMIT University	95
Science & Technology Australia	202
Services for Australian Rural and Remote Allied Health (SARRAH)	164
Sisters Inside	42
Skills Insight Jobs and Skills Council (Skills Insight)	107
SkillsIQ	131
Small Business Development Corporation (SBDC)	224
Social Ventures Australia (SVA)	156
South Australian Hair and Beauty Association (SAHBA)	128
South Australian Skills Commission (SASC)	226
Sue Holmes	198
TAFE Directors Australia (TDA)	71
Teachers and Teaching Research Centre (TTRC)	138
Tech Council of Australia (TCA)	185
Telstra	212

Participants	Sub no.
The Australian Association of Psychologists Inc (AAPi)	106
The Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH)	133
The Centre for Independent Studies (CIS)	74
The Group of Eight (Go8)	34, 161
The Pharmacy Guild of Australia	28
The University of Melbourne	139
Thriving Queensland Kids Partnership, ARACY (TQKP)	41
Tim Walshaw	193
TVET Global	123
United Workers Union (UWU)	174
Universities Admissions Centre (NSW & ACT) Pty Ltd (UAC)	12, 129
Universities Australia (UA)	166
University of New South Wales (UNSW)	220
University of Tasmania	157
University of Wollongong (UOW)	153
Valeriy Ogienko	43
Wendy Cato	53
Wesfarmers	214
Western Australian AI Hub (WA AI Hub)	195
Women in Adult and Vocational Education (WAVE)	109
Woolworths Group	9
Workday Australia	91
Working with Women Alliance and Australian Multicultural Women's Alliance (WwWA and AMWA)	142
Xero	89
Anonymous	48
Anonymous	52
Anonymous	54
Anonymous	127

Table A.3 – Questionnaires

Participants	qr no.
Aaron	16
Accommodation Australia and Australian Hotels Association (AA and AHA)	25
Ausfilm	33
Australasian Institute of Mining and Metallurgy (AusIMM)	81
Australian Catholic University (ACU)	53
Australian Council for Student Voice (ACSV)	26
Australian Dairy Products Federation (ADPF)	93
Australian Digital Inclusion Alliance (ADIA)	58
Australian Education Union Federal Office (AEU Federal Office)	51
Australian Industry Group (Ai Group)	66
Australian Information Industry Association (AIIA)	74
Australian Institute for Teaching and School Leadership Limited (AITSL)	55
Australian Logistics Council (ALC)	86
Australian Trucking Association (ATA)	39
Ben Adamson	2
Broadband Today Alliance Inc Trading as Australian Smart Communities Association (ASCA)	34
Brotherhood of St. Laurence	71
Cameron McDonald	64
Centre for Community Child Health (CCCH), Murdoch Children's Research Institute (CCCH)	45
Chartered Accountants Australia and New Zealand (CA ANZ)	56
Clean Energy Council	20
Community and Public Sector Union (PSU Group)	52
CPA Australia	68
Deakin University	40
Education Services Australia (ESA)	67
Electrical Trades Union of Australia (ETU)	89
Engineers Australia	87
Grant Sciberras	78
GW Priddle Pty Ltd	17
Heavy Vehicle Industry Australia (HVIA)	47

Participants	qr no.
Independent Education Union of Australia (IEUA)	13
Independent Schools Australia	80
Insurance Council of Australia (ICA)	49
Karen May	79
Keith Wilson	22
Kerry Brookes	4
Leah May Pappas	72
Leslie Loble	23
Lyndsay Connors and Jim McMorrow	42
Master Electricians Australia (MEA)	95
Microsoft	76
Mining and Automotive Skills Alliance Ltd (AUSMASA)	75
Montu Group Pty Ltd	59
Mortgage and Finance Association of Australia (MFAA)	63
Municipal Association of Victoria (MAV)	50
MYSKILLSmanager, The Business Builder, Peter Brown Plumbing Services	83
National Catholic Education Commission (NCEC)	29
National Disability Services (NDS)	77
National Growth Areas Alliance (NGAA)	73
Paul Butler	35
Professor Leanne Wiseman	14
Property Council of Australia	91
Rachel Wilson	19
Real Estate Institute of Australia (REIA)	24
Regional Universities Network (RUN)	57
RMIT University's Policy, Strategy and Impact Group	61
Rosie Hodson	84
Schools Copyright Advisory Group (CAG Schools)	60
Skills Insight Jobs and Skills Council (Skills Insight JSC)	38
Speech Pathology Australia	82
TAFE Copyright Advisory Group	65

Participants	qr no.
TAFE SA	70
Teach For Australia	31
Teachers and Teaching Research Centre - The University of Newcastle	88
The Centre for Future Work at the Australia Institute	96
The Front Project	44
The Tech Council of Australia (TCA)	92
The University of Melbourne	54
The University of Sydney	46
Universities Admissions Centre (NSW & ACT) Pty Ltd (UCA)	90
Universities Australia (UA)	94
University of Newcastle	69
Vicki Winfield	12
Working with Women Alliance, Australian Multicultural Women's Alliance (WwWA and AMWA)	43
XBase Pty Ltd	28
Youth Law Australia (YLA)	5
Anonymous	1
Anonymous	3
Anonymous	6
Anonymous	7
Anonymous	8
Anonymous	9
Anonymous	10
Anonymous	11
Anonymous	15
Anonymous	18
Anonymous	21
Anonymous	27
Anonymous	30
Anonymous	32
Anonymous	36
Anonymous	37
Anonymous	48
Anonymous	62
Anonymous	85

B. Occupational entry regulations – case studies and jurisdictional differences

Relaxing overly stringent occupational entry regulations (OERs) while maintaining safety and quality standards can lead to economic benefits (chapter 4). This appendix provides some background and rationale for considering replacing OERs for certain occupations with less burdensome alternatives, and better targeting qualification requirements to risk, as proposed in recommendations 4.1 and 4.2 (section B.1). Section B.2 also outlines several instances in which OERs are currently being reviewed, such as initiatives to redesign qualification pathways to improve consumer access to services. Section B.3 provides a preliminary list of potential jurisdictional differences in OERs, which state and territory governments can use to start identifying occupations for which to consider replacing OERs with more efficient regulations.

B.1 Overly stringent occupational entry regulations

In addition to motor vehicle repairers (chapter 4), other occupations where OERs appear to be more stringent than necessary and could be replaced have been identified.

Mandatory qualifications for hairdressers

Hairdressing often falls under state and territory public health regulation and is generally considered to be low risk (WA DoH 2024b). New South Wales and South Australia are the only Australian jurisdictions that require a certificate III to work as a hairdresser (LCA 2025, p. 5). While businesses in other states and territories may prefer to hire hairdressers that hold formal qualifications, it is not a regulatory requirement. A 2016 discussion paper released as part of a NSW Government review noted that the NSW hairdresser qualification requirements impose additional regulatory burden without significant benefits (NSW Business Chamber 2016, p. 21; NSW DFSI 2016, p. 9). Other states and territories use other regulatory tools to manage risks in the hairdressing profession (chapter 4).

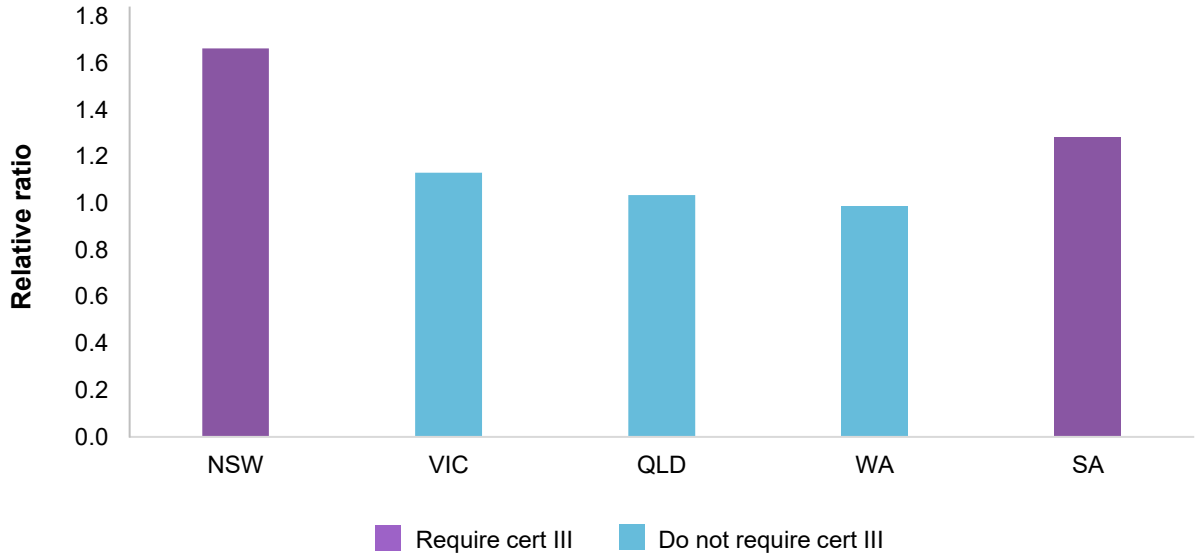
The requirement to obtain a certificate III may dissuade potential hairdressers from entering the profession,[74] reducing choice for consumers. Many students may still study a certificate III, however this requirement can pose a significant barrier for migrants who already possess the skills and whose overseas qualification or experience may not be automatically recognised by local authorities. A certificate III can cost between $13,000 and $28,000 and take 12 to 34 months to complete (NSW PEC 2024, p. 10; TAFE SA nd).

Migrants with hairdressing skills but without Australian qualifications face barriers to working in the industry. Productivity Commission analysis using 2021 Census data suggests that New South Wales and South

[74] While enforcement of hairdressing qualifications may be limited (Bradshaw 2021, p. 1), the existence of the legislation may still affect behaviour.

Australia have fewer hairdressers who are born overseas than other states, relative to migrant representation in the general population (figure B.1). While services such as South Australia's new Occupational Recognition Service enable migrants to be assessed for trade recognition (SASC 2025b), lifting restrictions that prevent qualified migrants from working in certain states and territories would be a less costly process, particularly where there is little evidence that regulated qualification requirements improve outcomes compared to jurisdictions without these requirements.

Figure B.1 – States requiring a certificate III have a relatively higher prevalence of hairdressers who are born in Australia



The relative ratio compares the foreign-born to Australian-born population of workers, in relation to the ratio of foreign-born to Australian-born hairdressers. A higher value means hairdressers born overseas are relatively less prevalent in the state. Tasmania, the Northern Territory, and the Australian Capital Territory are excluded from the table due to small population sizes and different demographic and economic compositions.

Source: PC analysis of ABS Census (2021b) – Persons, Place of usual residence.

The hairdressing industry has stated that removing regulations would compromise consumer safety (Campitelli as cited in Select Committee on Red Tape 2018, p. 9) and reduce quality (Ryan 2010). Many submissions to this inquiry from the hairdressing industry also opposed changes to qualification requirements (PC 2025b), but there was no compelling evidence that showed that jurisdictions with qualification requirements outperformed those without in terms of safety or quality. PC analysis found that worker safety and consumer satisfaction in the hairdressing industry were not strongly correlated with qualification requirements (chapter 4).

Others in the hairdressing industry have stated that deregulation would result in unqualified hairdressers undercutting salons (Peta 2018). However, competition leading to lower prices can be a desirable outcome for consumers if they are guided by reviews and are aware that new entrants may possibly provide worse service. Online reviews have made public feedback more accessible, so poor quality hairdressers are more likely to receive negative reviews and experience fewer new and returning customers.

Other forms of regulation can mitigate safety risks without restricting access to the profession, including consumer protection laws, work health and safety laws and public health laws and guidance (chapter 4). For example, Queensland and Victoria both note that hairdressing is low risk but ensure safety under general health, safety and consumer protection legislation (QLD Health 2025; VIC DoH 2019). The Western Australia

Department of Health (2016, p. 1) also noted that hairdressing is highly competitive with strong incentives for businesses to adhere to hygiene practices.

Given the existence of less intrusive forms of regulation and the costs it imposes on hairdressers, the New South Wales and South Australian governments should consider replacing requirements for hairdressers to obtain a certificate III with best practice industry guidelines that will maintain standards, support salon owners, and ensure workers and consumers remain protected.

Regulation of painters and decorators

Painting and decorating involves applying coatings such as paint, wallpaper and frescos to interior and exterior surfaces. OERs for painters and decorators differ across Australian states and territories. The most restrictive regulation is in South Australia, which requires all building work (including painting work) contractors to be licensed (SA Government 2024, Building Work Contractors Regulations 2011 (SA)).

New South Wales, Victoria, Queensland and Western Australia apply licensing requirements only to some larger painting jobs (with value thresholds across these states ranging from $1,000 to $5,000 and some states do not require licensing for standalone contracts that only cover paintwork) (BPC 2025; NSW Building Commission 2024; QBCC 2021b, 2021a; WA Government 2024). Tasmania, the Australian Capital Territory and the Northern Territory do not currently have OERs for painters. However, the Australian Capital Territory is looking to extend licensing to several trades, including painting and decorating (ACT Government 2025).

One rationale for licensing is the benefit to consumers in reducing poor quality painting (Wurm 2012, p. 9). While there are costs associated with poor quality painting, remedies are available through the Australian Consumer Law, such as fixing damage, cancelling contracts and refunds (CAV 2023b), which provide a pathway to resolve such issues.

Industry stakeholders also state that building trust in, and professionalisation of, the industry is another potential reason for licensing (Wurm 2012, p. 10). However, US research found that prices and reputation are the primary factors influencing decisions to hire a home improvement service professional, and less than 1% of respondents included licensing among their top three factors (Farronato et al. 2024, p. 565).

Painters themselves can face safety risks – for example through exposure to chemicals, lifting, falls from heights and equipment use (PC 2025b; WorkSafe Victoria 2025). The PC's analysis of Safe Work Australia data does not suggest a strong relationship between jurisdictions with more stringent licensing and the relative frequency of serious workers' compensation claims for painters (figure B.2). The three states with the highest frequency of serious claims per million hours worked (Queensland (11.3), South Australia (9.5) and Western Australia (8.0)) also have relatively stringent rules for when painting licensing applies.

The industry operates in a broader regulatory environment that also differs between states and territories and this could affect safety outcomes. For example, codes of practice help promote safe working conditions under work health and safety legislation. Safe Work Australia provides model codes of practice on topics such as managing the risk of falls, which state and territory regulators can adapt (SafeWork NSW nd; SWA 2016). While understanding how to follow safety regulations is important (CFMEU Construction and General Division, sub. 191, pp. 4–5), this can be taught through the completion of a short course, rather than a full certificate III, as is required to be a licensed painter in many states and territories.

Overall, general legislation and codes of practice should be able to be relied on to safeguard against risks associated with painting. There is scope to reduce regulation of painters in the states and territories that impose licensing – for example: to remove the need for licensing of standalone paint jobs in jurisdictions where this currently is not the case; to increase the value threshold before licensing applies; or to remove licensing altogether.

Figure B.2 – Painter safety and consumer satisfaction measures are not clearly correlated with licensing requirements

Unpublished workers' compensation claims data from the National Data Set for Compensation-based Statistics, 2008-09 to 2023-24, Safe Work Australia, for ANZSCO unit group 3322 (painters). 2023-24 data is preliminary. Serious claims are accepted workers' compensation claims that have resulted in one or more working weeks lost. Accepted workers' compensation claims do not include claims involving fatality. Ratings data based on 33,000 Google reviews for 753 painting businesses sourced from Google Places API, using 'painter' as the keyword. Further details in appendix C, section C.4.

Source: PC estimates based on Google Maps and Safe Work Australia data.

Entry pathways for air conditioning and refrigeration mechanics

Air conditioning and refrigeration (AC&R) mechanics work in an industry that involves high-risk tasks. As such, occupational entry is regulated. Many inquiry participants highlighted the importance of OERs in the occupation (PC 2025b). However, there is scope to improve entry regulations to be more proportionate to risks for different tasks.

At the national level, the Australian Refrigeration Council (ARC) administers the refrigeration and air conditioning permit scheme – the ARCtick scheme – consisting of licensing, compliance monitoring, and education and engagement. The ARC assesses eligibility and issues permits to hold Refrigerant Handling Licences (RHLs) and Refrigerant Trading Authorisations that allow handling of fluorocarbon refrigerants – a key input to cooling systems (ARC nd). The licensing scheme protects the environment and ensures adherence to Australia's international environmental commitments by preventing certain refrigerant gases from leaking into the atmosphere (ARC nd). There are a variety of RHLs, tailored to the different equipment and work involved and each have different education requirements.

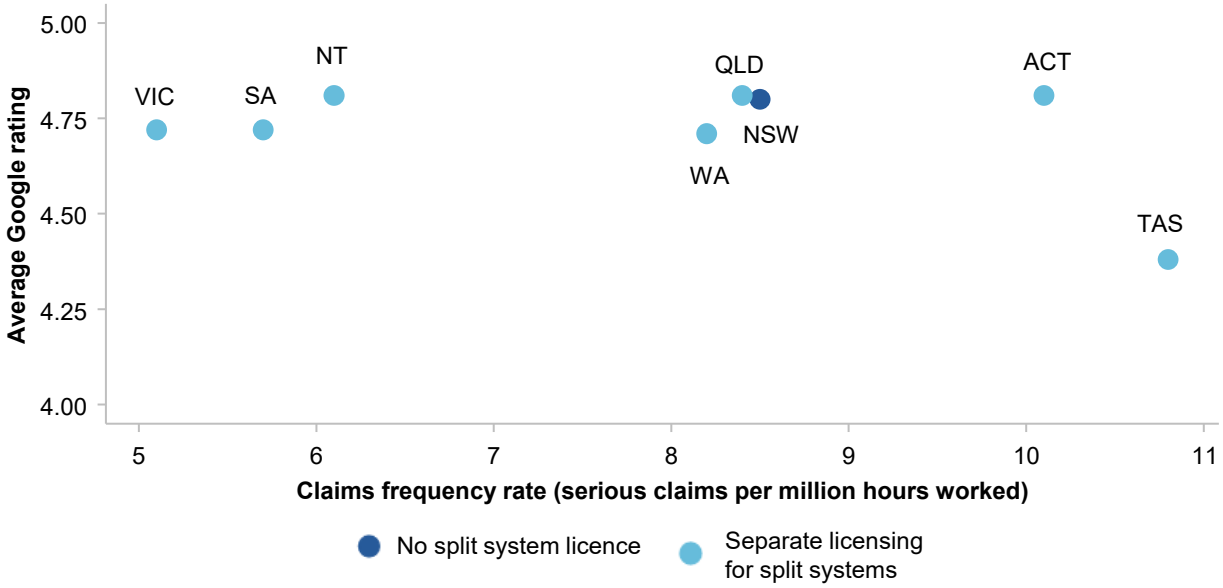
Some states and territories also regulate occupational entry for AC&R mechanics, with requirements that can vary substantially between jurisdictions. State-based licensing schemes are not always compatible with the national ARCtick scheme or with other jurisdictions. For example, New South Wales does not have a restricted licence for installing and decommissioning split systems (PSO 2025, pp. 21–22), a lower-risk task with lower qualification requirements at the national level (ARC nd). The restricted RHL means that this type of work can be undertaken by workers with qualifications such as a Certificate II in Air Conditioning Split System. It also means that these AC&R services can be performed by related trades, such as plumbers and electricians, with no evidence of poorer quality or riskier work provided (PC 2023a, pp. 70, 74). Data from the

ARC indicates that restricted licence holders make up nearly 20% of the total number of RHLs – about 16,500 licences out of more than 90,000 (ARC, sub. 108, p. 3). Due to the absence of a restricted licence, there are potentially much fewer split system services available in New South Wales.

Analysis undertaken for this inquiry did not find better worker safety outcomes or better consumer ratings for air conditioning businesses in New South Wales (figure B.3). The frequency of serious workers' compensation claims per million hours worked in New South Wales (8.5) is comparable to Queensland (8.4) and higher than Victoria (5.1).

Overall, New South Wales should consider expanding entry pathways for AC&R mechanics to align with other jurisdictions and national licences, such as by introducing a restricted licence for installing and decommissioning split systems.

Figure B.3 – Safety and consumer satisfaction measures for air conditioning and refrigeration mechanics are not clearly correlated with licensing requirements



Unpublished workers' compensation claims data from the National Data Set for Compensation-based Statistics, 2008-09 to 2023-24, Safe Work Australia, for ANZSCO unit group 3421 (airconditioning and refrigeration mechanics). 2023-24 data is preliminary. Serious claims are accepted workers' compensation claims that have resulted in one or more working weeks lost. Accepted workers' compensation claims do not include claims involving fatality. Ratings data based on 110,000 Google reviews for 992 businesses sourced from Google Places API, using 'air conditioning' as the keyword. Further details in appendix C, section C.4. Data captures safety and satisfaction of air conditioning and refrigeration mechanics – it may not capture outcomes of split system air conditioning services undertaken by other tradespeople.

Source: PC estimates based on Google Maps and Safe Work Australia data.

Introduction agents have outlasted their need for licensing

Victoria and Queensland impose restrictions on introduction agents – people or companies offering personal introduction or matchmaking services for those looking for potential partners or companions for social activities (CAV 2023a; Queensland Government 2024a). Regulation was introduced more than two decades ago in response to unfair practices such as non-existent services and money extortion (Dixon 2001, p. 3). At the time, non-legislative approaches, such as self-regulation, voluntary codes and consumer information, were not seen as able to improve standards (Introduction Agents Bill 1997 Explanatory Memorandum (VIC), p. 1; Introduction Agents Bill 2001 Explanatory Notes (Qld), pp. 1–2).

Since legislation was introduced, the industry has changed substantially with the emergence of online dating apps such that there are now far fewer introduction agents – down in Queensland from at least 76 in 2001 (Dixon 2001, p. 2) to 14 as of May 2025.[75] All other jurisdictions rely on standard consumer protection laws to address any issues in the industry. Further, with consumer information on scams such as catfishing more readily available in the digital era, people are now likely more aware of the risks of introduction services than they were in the past.

Given the cost of regulating a small number of entities and the limited ongoing benefits, Victoria and Queensland governments should consider removing OERs for introduction agents and relying on consumer protection laws.

B.2 Qualification requirements are being reviewed for some occupations

Redesigning qualification pathways for psychologists

General registration as a psychologist in Australia requires a four-year undergraduate degree, plus a two-year master's degree or a one-year master's and a one-year internship (PsyBA 2016, p. 2). Additional study and supervised training are required for area of practice endorsement, such as for clinical psychology. Unlike other health professions, there is no one single, short practical course of study to qualify as a registered psychologist, making the psychology training pathways out of step with other health professions (PsyBA Chair (Rachel Phillips), pers. comm., 29 July 2025). Unsurprisingly, there is a shortage of psychologists in all Australian states and territories (JSA 2025e).

The Psychology Board of Australia (PsyBA) was asked by the Department of Health, Disability and Ageing to investigate options to redesign the training pathway to registration as a psychologist (PsyBA 2025a, 2025b, 2025c). PsyBA is now undertaking a review to address training complexity and workforce shortages while maintaining quality standards. The review is examining:

- options for the design of a single, shorter and more practical qualification for eligibility for general registration
- standardisation of pathways to improve equity and access for those pursuing general registration
- industry demand for psychologists across sectors, including possible demand for assistant psychologists.

To become a psychologist, students need to graduate from three degree programs (bachelor, honours, master) and undertake several unaccredited units of study (such as arts or science subjects) on their journey to general registration because undergraduate psychology sequences are approved by subject, rather than by qualification (PsyBA Chair (Rachel Phillips), pers. comm., 29 July 2025). Moreover, funding arrangements mean that there are more bachelor graduates seeking entry into master's programs than there are available places, creating a bottleneck in supply (APS 2021; Melville 2023).

Reducing qualification requirements and the costs associated with long, rigid entry pathways will improve access to psychological services in the community while improving productivity. While training is essential to ensure that psychologists have the appropriate skills, there is scope to shorten the time it takes to gain these skills. A better designed training pathway may provide an equivalent level of competence at lower cost.

[75] Data based on Queensland licence register for regulated introduction agents (Queensland Government 2025).

Reforming qualification requirements for financial advisers

OER requirements for financial advisers were increased in 2019 following numerous cases of inappropriate financial advice and concerns about the quality and consistency of training standards in the industry (Corporations Amendment (Professional Standards of Financial Advisers) Bill 2016, p. 5). This included requiring financial advisers to hold a degree or higher qualification focused on financial advice, pass an exam, undertake a professional year, undertake continuous professional development and comply with a code of ethics. The changes sought to improve consumer outcomes and restore confidence in the profession. However, the changes also reduced the number of potential entrants (Deakin University, qr. 40, p. 7). From 2019 to 2025, the number of advisers fell from 28,000 to fewer than 16,000 (Assistant Treasurer and Minister for Financial Services 2025) which has reduced the public's access to affordable financial advice (CPA Australia, qr. 68, p. 4; Treasury 2022, pp. 17, 70).

In response, the Australian Government has announced it is intending to reform entry pathways to ensure Australians have access to high-quality, accessible and affordable financial advice (Treasury 2022, 2025). Proposed changes to the education standard include removing the requirement to hold an approved qualification focused on financial advice. This will be replaced with a requirement to hold a bachelor's degree or higher in any discipline, complete minimum relevant study in areas such as finance, economics or accounting, and complete prescribed accredited financial advice subjects such as in ethics, law and regulatory obligations and the financial advice process. The reform aims to halve the study time and lower the cost to meet the education standard for most students studying a commerce, economics or finance degree (Treasury 2025, p. 2). The remaining professional standards will continue to support the overall development of financial advisers.

The Australian Government is also seeking to introduce a new class of financial adviser that can provide safe and simple advice with a reduced qualification requirement and be restricted to providing advice on a narrower set of products and topics compared to a professional adviser (Australian Government Department of the Treasury 2023, p. 2; Treasury 2025, p. 2).

These reforms, combined with other forms of robust regulation of the industry, should ensure that consumers are protected whilst entry requirements are not unnecessarily burdensome. This can be achieved by considering alternatives to OERs and aligning restrictions to risk.

B.3 State and territory differences in OERs may identify excessive restrictions

To identify potential opportunities to replace excessive OERs with less burdensome and more efficient alternatives, OpenAI's GPT-5 model was used to help categorise OER for the most common occupations according to the ABS 2021 Census. Table B.1 outlines whether an occupation requires licensing or has qualification requirements in each state and territory. Rows bolded and in purple highlight occupations where there may be jurisdictional differences in OERs. As noted in recommendation 4.1, regulators should focus particularly on OERs that exist in their jurisdiction but not in others. Differences may suggest that OERs are excessive if worker and consumer risks, and quality and safety outcomes are the same as in other states and territories.

When interpreting the table, it is important to note several limitations.

Occupation categories may not perfectly align with licence or registration definitions. For example, Tasmania does not have a separate licence for carpenters or joiners; instead those with a Certificate III in Carpentry or

Joinery can apply for a builder licence (CBOS 2025). Tasmania is considered to have OER for carpenters and joiners in the table. As another example, New South Wales has a licence for users of blasting explosives (SafeWork NSW 2025), which is required for tasks that shot firers undertake. Therefore New South Wales is considered to have OER for the occupation 'drillers, miners and shot firers' in the table, despite there being no general miner's licence.

Differences in state and territory OER stringency may exist, however this table only identifies if licensing or registration apply and does not explore the stringency of OER. For example, certain occupations may only require licensing above a certain threshold, such as painters in New South Wales, Victoria, Queensland and Western Australia (BPC 2025; NSW Building Commission 2024; QBCC 2021b, 2021a; WA Government 2024). These jurisdictions are all considered to have OERs in the table.

Users should note that the table was developed using OpenAI's GPT-5 model and may contain errors. Some limited manual review was conducted and corrections were made, with assistance from some state and territory regulators and other government bodies. However, factual errors may remain. Users of the table should take caution and conduct a more comprehensive check of OER arrangements in each state and territory for any occupations of interest. Further details about the construction of the table can be found in appendix C, section C.4.

Table B.1 – Occupational entry regulation status by state and territory

Top occupations by employment

Occupation	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
Sales Assistants (General)	No	No	No	No	No	No	No	No
Registered Nurses	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
General Clerks	No	No	No	No	No	No	No	No
Aged and Disabled Carers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Retail Managers	No	No	No	No	No	No	No	No
Primary School Teachers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Child Carers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Truck Drivers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Receptionists	No	No	No	No	No	No	No	No
Accountants	No	No	No	No	No	No	No	No
Secondary School Teachers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commercial Cleaners	No	No	No	No	No	No	No	No
Storepersons	No	No	No	No	No	No	No	No
Advertising, Public Relations and Sales Managers	No	No	No	No	No	No	No	No
Electricians	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Contract, Program and Project Administrators	No	No	No	No	No	No	No	No
Software and Applications Programmers	No	No	No	No	No	No	No	No
Kitchenhands	No	No	No	No	No	No	No	No
Carpenters and Joiners	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**No**	**Yes**
Office Managers	No	No	No	No	No	No	No	No
Construction Managers	**Yes**	**Yes**	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**
Nursing Support and Personal Care Workers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Accounting Clerks	No	No	No	No	No	No	No	No
Education Aides	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Checkout Operators and Office Cashiers	No	No	No	No	No	No	No	No

Occupation	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
Bar Attendants and Baristas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Motor Mechanics	**Yes**	**No**	**No**	**Yes**	**No**	**No**	**Yes**	**No**
Chefs	No	No	No	No	No	No	No	No
Waiters	No	No	No	No	No	No	No	No
Metal Fitters and Machinists	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Real Estate Sales Agents	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advertising and Marketing Professionals	No	No	No	No	No	No	No	No
Plumbers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bookkeepers	No	No	No	No	No	No	No	No
Sales Representatives	No	No	No	No	No	No	No	No
Chief Executives and Managing Directors	No	No	No	No	No	No	No	No
Purchasing and Supply Logistics Clerks	No	No	No	No	No	No	No	No
Management and Organisation Analysts	No	No	No	No	No	No	No	No
ICT Managers	No	No	No	No	No	No	No	No
Welfare Support Workers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Human Resource Professionals	No	No	No	No	No	No	No	No
Delivery Drivers	No	No	No	No	No	No	No	No
Solicitors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Architectural, Building and Surveying Technicians	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Livestock Farmers	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**
Gardeners	No	No	No	No	No	No	No	No
General Practitioners and Resident Medical Officers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Structural Steel and Welding Trades Workers	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**No**	**No**
General Managers	No	No	No	No	No	No	No	No
Shelf Fillers	No	No	No	No	No	No	No	No
Police	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Finance Managers	No	No	No	No	No	No	No	No
Production Managers	No	No	No	No	No	No	No	No
Packers	No	No	No	No	No	No	No	No
Managers	No	No	No	No	No	No	No	No
Forklift Drivers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cafe and Restaurant Managers	No	No	No	No	No	No	No	No
Human Resource Managers	No	No	No	No	No	No	No	No
Hairdressers	**Yes**	**No**	**No**	**No**	**Yes**	**No**	**No**	**No**
ICT Support Technicians	No	No	No	No	No	No	No	No
Drillers, Miners and Shot Firers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Policy and Planning Managers	No	No	No	No	No	No	No	No
Information Officers	No	No	No	No	No	No	No	No
Personal Assistants	No	No	No	No	No	No	No	No
Fast Food Cooks	No	No	No	No	No	No	No	No
University Lecturers and Tutors	No	No	No	No	No	No	No	No
Civil Engineering Professionals	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**	**Yes**	**No**
Building and Plumbing Labourers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Security Officers and Guards	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Occupation	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
Call or Contact Centre and Customer Service Managers	No	No	No	No	No	No	No	No
Cafe Workers	No	No	No	No	No	No	No	No
Bank Workers	No	No	No	No	No	No	No	No
Enrolled and Mothercraft Nurses	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Graphic and Web Designers, and Illustrators	No	No	No	No	No	No	No	No
Keyboard Operators	No	No	No	No	No	No	No	No
Painting Trades Workers	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**
Supply, Distribution and Procurement Managers	No	No	No	No	No	No	No	No
Couriers and Postal Deliverers	No	No	No	No	No	No	No	No
Crop Farmers	No	No	No	No	No	No	No	No
Sports Coaches, Instructors and Officials	**No**	**Yes**	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Domestic Cleaners	No	No	No	No	No	No	No	No
Call or Contact Centre Workers	No	No	No	No	No	No	No	No
Bus and Coach Drivers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cooks	No	No	No	No	No	No	No	No
Welfare, Recreation and Community Arts Workers	No	No	No	No	No	No	No	No
Automobile Drivers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Specialist Managers	No	No	No	No	No	No	No	No
Pharmacy Sales Assistants	No	No	No	No	No	No	No	No
Private Tutors and Teachers	No	No	No	No	No	No	No	No
ICT Business and Systems Analysts	No	No	No	No	No	No	No	No
Earthmoving Plant Operators	**Yes**	**No**	**No**	**No**	**Yes**	**Yes**	**Yes**	**No**
Database and Systems Administrators, and ICT Security Specialists	No	No	No	No	No	No	No	No
Financial Investment Advisers and Managers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Retail Supervisors	No	No	No	No	No	No	No	No
Food and Drink Factory Workers	No	No	No	No	No	No	No	No

95 of the top 100 occupations by employment. Some ANZSCO occupations (such as 'inspectors and regulatory officers') were excluded due to the wide range of occupations they could cover. AI-generated outputs can contain inaccuracies – users of the table should take caution and conduct a more comprehensive check of OER arrangements in each state and territory for any occupations of interest. Further details about the construction of the table can be found in appendix C, section C.4.

Source: PC analysis using OpenAI's GPT-5.

C. Technical appendix

C.1 Modelling the economy-wide impacts of providing high-quality instructional materials and adopting edtech in school education

The Productivity Commission has used the PC National computable general equilibrium (CGE) model to assess the potential long-run economy-wide effects of providing high-quality national lesson plans and adopting edtech in school education (box C.1). The model and the approach used is the same as that employed in recent PC studies to model the effects of various National Competition Policy reforms (PC 2023c, 2024a). Consequently, the results presented here are subject to the same limitations outlined in these studies. Box C.1 provides an overview of the model.

Box C.1 – Overview of the PC National CGE model

The PC National model is a CGE model that has been used previously by the PC to analyse the economic impacts of various policies on the Australian economy, including tariff removal and examining the national effects of a variety of protectionist trade policies (PC 2017a, 2022b) and National Competition Policy and related reforms (PC 2023c, 2024a, 2025h).

The PC National database is based on Australian input-output tables for the financial year 2018-19, capturing the structure of the Australian economy for that year (ABS 2021a). These input-output tables disaggregate and relate connections of production and consumption between 114 industrial categories that comprise Australia's economy. Producers and consumers in this model are households, government and industry itself, and all are assumed to follow profit- or utility-maximising behaviour. Consumers and producers respond to, among other things, changes in relative prices, incomes and technological change. Domestic products and imports are imperfect substitutes for each other (the so called 'Armington assumption'), with substitution based on constant elasticity of demand functions that depend on their relative prices. Domestic producers use intermediate inputs (product), labour and capital to produce their output and are subject to taxes on the use of primary factors (labour and capital) in production. The prices paid by buyers (whether they be producers or different types of final demand) include the margins (such as transport and retail mark-ups) and taxes levied on those products. The model is documented in PC (2017a) and Zhang (2025) and a basic version of the model can be downloaded free of charge from the PC web site (PC National model and database: the basic version).

To estimate the potential long-run benefits from reform, the modelling adopts a long-run modelling environment (closure). Two important features of this are that:

- aggregate employment is held fixed[a] with wages allowed to vary

Box C.1 – Overview of the PC National CGE model

- capital stocks (both at the industry level and in aggregate) adjust to maintain the rate of return that that capital earns. Increases in foreign-owned capital would entitle foreign investors to an increased share of the additional capital income generated.

The model results are updated from 2018-19 dollars to 2024-25 dollars for presentational purposes.

a. The economy-wide modelling assesses the impacts relative to the structure of the economy in the model database rather than that which will exist in 20+ years to avoid making assumptions about what the pattern of economic growth and demographic change will look like over the next 20+ years.

Nature of the reforms modelled

The proposed reforms to school education involve providing all teachers with a baseline set of high-quality instructional materials and adopting a national approach to edtech in school education. More equitable access to teaching resources for all schools is aimed at improving the quality of education provided to all students, including those in less well-resourced schools or sectors, or from disadvantaged backgrounds. Chapter 1 discusses the details of these reforms.

Ultimately, the objective of the proposed reforms is to lift the performance of all students in standardised testing, and by doing so, increase the productivity of the future workforce. Given that students spend up to 13 years in schooling, these improvements should accumulate over time (from kindergarten or foundation to Year 12). Improved student outcomes are expected to translate into higher workforce productivity once students join the labour market. Over time, these workers will account for an increasing share of the labour market.

The impact of the reforms was modelled using existing estimates of the impacts of improving teacher quality on student outcomes for multiple teachers in a student's school journey. The literature used includes:

- Jackson and Makarin (2018) who estimate the impact on student outcomes of the provision of high-quality instruction materials and learning and development support to teachers
- Lee (2018) who estimates the cumulative impact of teacher quality from successive teachers on student outcomes.

Overview of the economy-wide modelling

The proposed reforms will take a long time to have a discernible impact on Australian labour markets. A child in kindergarten or foundation today will not enter the labour market for at least 13 years, even longer if they undertake tertiary education. Even then, the flow of new entrants into the labour market each year only makes up a small proportion of the overall stock of workers. Thus, it will take many years for the students benefiting from these reforms to account for a significant proportion of the Australian labour market.

Given this, the economy-wide modelling focuses on the possible long-run effects of reform once the economy has adjusted. This means that the modelling does not detail the adjustment processes that give rise to these long-run impacts. The results reflect the difference between the economy with and without reform. This makes the modelling comparative static rather than dynamic. No assumptions have been made about how the economy will evolve over the interim. Two important aspects of the long-run modelling environment used for the results presented here (often referred to as a closure) are that:

- wages vary to maintain aggregate employment, with employment at the industry level varying in response to, among other things, industry output, wage rates and the relative cost of capital

- capital stocks adjust through flows of foreign-owned capital to maintain the rate of return on capital.

This means that the economy will be flexible and enable resources to be reallocated to where they can be used most efficiently. This is a reasonable assumption for considering the long run – a period 20 years from now – when the economy will have adjusted to the supply of better-trained workers.

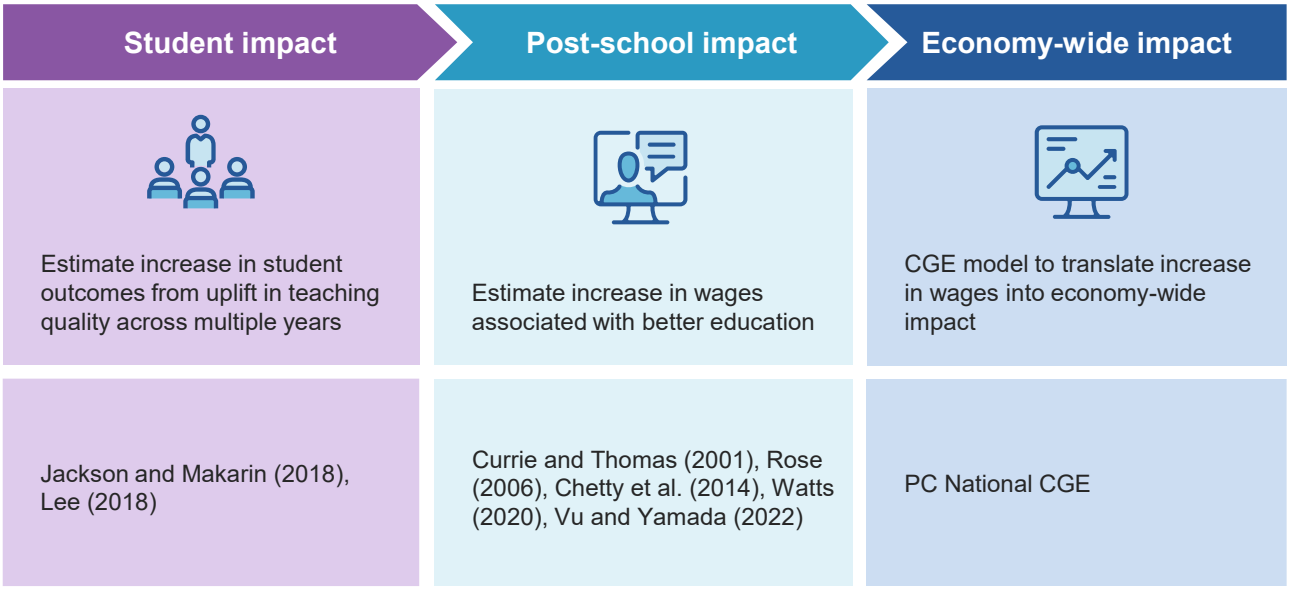
Given the uncertainties involved, two scenarios are modelled to provide a lower and an upper bound of the potential gains. The lower bound represents the lowest long-term productivity impact identified (0.4% per year in the lower bound scenario), while the upper bound represents the highest impact identified (0.7% per year in the upper bound scenario). As these improvements are accumulated gains from each year of schooling, their achievement will require sustained commitment and ongoing effort.

Development of the model shocks

The reforms are designed to lift the teaching quality of under-prepared and under-resourced teachers by providing access to high-quality resources. This will support better student outcomes and ultimately more capable, productive workers (figure C.1).

This work aims to quantify the benefits of our proposed reforms. The output does not explicitly represent the exact impact of the policy recommendations – rather the outputs provide readers with an understanding of the *potential* impact of the reforms. The PC took a similar approach in its analysis in *Advancing Prosperity*, which sought to estimate the impact of turning three hours per week in lesson planning into more face-to-face teaching (PC 2023b).

Figure C.1 – Approach to quantifying the benefits of improvements in teaching quality



Deriving inputs into PC National

The size of the shock to productivity from improved teacher quality primarily draws from Jackson and Makarin (2018) and Lee (2018).

Jackson and Makarin investigated the impact on student outcomes of providing high-quality instructional materials and professional development to teachers. The authors find that supplying teachers with access to higher-quality materials and additional supports resulted in an improvement of 0.09 standard deviations (SDs) for the average classroom over the course of a school year. When the authors examined the effects

for teachers across the quality distribution, they found that the impact of the materials was higher for teachers in the bottom 60% of quality (an improvement of 0.11 SDs) but the effects fall away for teachers of higher quality. With our reforms being non-compulsory for teachers, we use this finding as the principal outcome for our reforms rather than a uniform 0.09 SD increase from all teachers.

The effects measured by Jackson and Makarin are for a single teacher/class across one year. To model the impact of multiple teachers improving in quality we rely on the work done by Lee to estimate the cumulative improvement in student outcomes. In this study, Lee constructs a cumulative teacher effectiveness index by summing each student's six senior school (years 7–12) mathematics teachers' value-added scores and then standardising this sum across students. A one-SD increase in this cumulative index is associated with a 0.262 SD increase in year 12 mathematics achievement. The change in outcomes can be represented by:

$$\text{Equation 1: } \Delta Y = 0.262 \times \frac{\sum_{y=1}^{years\ of\ schooling} SDs\ of\ cumulative\ improvement}{\sqrt{years\ of\ schooling}}$$

By assuming that the effect remains stable over different teachers and across subjects, we can extend the analysis to cover K–10 by including additional years of schooling (K–6), and excluding years 11 and 12 which are typically not included in banks of lesson materials. The change in outcomes formula becomes:

$$\text{Equation 2: } \Delta Y = 0.262 \times \frac{\sum_{y=1}^{11} SDs\ of\ cumulative\ improvement}{\sqrt{11}}$$

To use the estimates from Jackson and Makarin in equation 2, we establish a baseline case where one teacher with access to high-quality instructional materials and learning and development improves the outcomes of the student by 0.11 SDs.

$$\text{Equation 3: } 0.11 = 0.262 \times \frac{\sum_{y=1}^{1} SDs\ of\ improvement}{\sqrt{1}}$$

This establishes that the quality improvement from 11 years of the intervention is approximately 0.42 SDs.

Inputting the 0.42 SD improvement for 60% of teachers into equation 2 gives an estimated increase in student outcomes of 0.22 SDs. These improved student outcomes becomes the upper bound estimate for the reforms.

To determine our lower bound estimate we use the 0.22 SD improvement in teacher quality and consider that there are already states and territories with access to state-produced instructional materials. Taking a conservative approach, we have assumed that our reforms would only benefit students in schools that do not already have access to these materials. As of 2024, 55% of students are in schools that do not have access to state-produced instructional materials across all year levels and for all subjects (for simplicity, this is taken to be all non-government schools, and government schools in Victoria, the Australian Capital Territory and Tasmania) (SCRGSP 2024). Assuming these students would receive the full effect while others would not see any gains reduces the impact of the reforms. Reducing the average impact to 55% of the total sets the lower bound average increase in student outcomes to 0.12 SDs.

The final step in the process is to translate increases in student outcomes into future wage growth and productivity gains to input into PC National. This conversion follows the same path laid out in *Advancing Prosperity* (PC 2023b). Each SD gain in student outcomes results in a 13.5% increase in future wages and labour productivity. This is the midpoint impact from previous studies and used in *Advancing Prosperity* (Chetty et al. 2014; Currie and Thomas 2001; PC 2023b; Rose 2006; Vu and Yamada 2022; Watts 2020). The wages and productivity gains for affected workers in the upper bound scenario (where student outcomes increase by 0.22 SDs) is 3.0%, while the increase in the lower bound scenario is 1.6%.

The modelling assumes that the reforms only improve the labour productivity of new workers that join the labour market and do not apply to the existing stock of workers. The shocks applied to PC National are the productivity improvements rising from improved student outcomes, scaled down to account for the existing stock of workers that do not benefit from the reforms. ABS Labour Force data shows people under 30 account for about 25% of total hours (ABS 2025d), so we apply a 25% weight to the shock to estimate economy-wide effects. The resulting improvements in aggregate labour productivity range for 0.4% (lower bound) to 0.7% (upper bound) (table C.1).

The modelling also assumes that these improvements in aggregate labour productivity apply equally across all industries in the economy. The improvements in labour productivity are modelled as labour-augmenting technical change.[76]

Table C.1 – Summary of inputs into PC National

	Impact on teacher quality (standard deviations)	Average impact on student outcomes (standard deviations)	Impact on future student earnings	Impact on long-run (20 years) productivity
Upper bound scenario All states and territories benefit, teacher quality improves for bottom 60% of teachers	0.42	0.22	3.0%	0.7%
Lower bound scenario Only students in classrooms without prior access to comprehensive state-based instructional materials are impacted, teacher quality improves for bottom 60% of teachers	0.42	0.12	1.6%	0.4%

What the modelling does not account for

The estimates of impacts on future wages and productivity do not account for time and changes to labour force composition that would likely increase the size of the gains to GDP.

The estimates of how an increase in student outcomes leads to higher future wages does not account for any change in the proportion of school students that transition to tertiary education. Research suggests that higher student outcomes in school lead to higher rates of participation in tertiary education (Chetty et al. 2014). Participation in higher education is also a strong predictor of future wages (Leigh 2024b). If taken into account, this would mean that the GDP impact from the reforms would likely be higher than our model estimates.

The modelling also does not consider the very long-term impacts of the reforms, beyond 20 years. As the timeframe in which to model the impacts increases, a greater proportion of the future labour force would benefit from high-quality education. After a period of time, the labour force would be wholly composed of workers that benefited from the reforms. For example, extending the time scale to over 60 years would result in an impact on GDP and productivity of 1.6% to 3.0% (that is, a 100% shock to labour productivity).

[76] Labour-augmenting technical change in PC National has the opposite sign to the change in labour productivity. Negative labour-augmenting technical change indicates that less labour is needed to produce a unit of output.

However, significant uncertainties arise when modelling that far in the future that make it difficult to reliably estimate the size of the GDP impact. Additional shocks accounting for a changing economic environment would be needed. For example, over a 60-year time frame, there is likely to be substantial changes in the composition of many industries.

Additional assumptions

Normal distribution: We are assuming that teacher quality is normally distributed for the purposes of estimating various cumulative SD improvements from our estimates. Early in the project, we analysed National Assessment Program – Literacy and Numeracy (NAPLAN) data (as a proxy for teacher quality) which showed a relatively normal bell curve for student outcomes (albeit with very long tails) once several control variables were included.

Independent distribution of student-based teacher quality: We are assuming that the distribution of students is independent of teacher quality. That is, there is no streaming of higher achieving students into classes with higher-quality teachers.

Economy-wide effects

The modelling indicates that providing high-quality, nationally-available instructional materials and adopting edtech has the potential to increase annual GDP in the long run (in 20 years' time) by between $11 billion and $25 billion in 2024-25 dollars (0.4% to 0.7% of GDP) (table C.2).

The increase in labour productivity means that each worker produces more output per hour worked. This reduces the labour cost of each unit of output and lowers production costs. The model assumes that competition ensures that these lower production costs flow through into lower output prices. With cheaper output, demand increases.

Additional production is needed to meet this increase in demand. This requires the use of additional foreign-owned capital in production, which, in turn, entitles the owners of the foreign capital to a larger share of the income that accrues to the owners of capital.

The additional production gives rise to the increase in real GDP.

The modelling shows that improving labour productivity increases nominal and real wages of workers and, with it, aggregate labour income. The increase in wages reflects the increase in the value of activity (output) that each worker can now produce.

The modelling indicates that these reforms have the potential to lead to a significant increase in GDP and economic activity in the long run.

Table C.2 – Long-run economy-wide impacts from providing high-quality nationally-available instructional materials and adopting edtech in school education

Percentage change from the base

	Lower bound	Upper bound
Real gross domestic product (GDP)	0.41	0.74
Real household consumption	0.27	0.49
Real investment	0.22	0.39
Real government consumption	0.18	0.32
Export volumes	0.10	0.19
Import volumes	0.37	0.66
Real wages[a]	1.10	1.99
Rate of return[b]	0.20	0.36
Employment[b]	0.28	0.51
Capital stock	0	0
Exchange rate[c]	0	0
GDP deflator	0.44	0.80
Consumer price index	0	0
Export prices	-0.26	-0.48
Import prices	-0.21	-0.38
Terms of trade	-0.22	-0.39
Rental price of capital	0	0
Investment price index	-0.22	-0.39
Government price index	-0.20	-0.36

a. Real wage deflated by the consumer price index. **b.** The rate of return to capital and aggregate employment are held fixed in the modelling environment. **c.** Model numeraire. Held fixed by assumption.

Source: PC estimates.

Converting student outcomes gains to NAPLAN scores

In chapter 1, we report the impact of our reforms on student outcomes as percentage increases in average NAPLAN scores rather than in standard deviations:

> The estimated lift in student outcomes is equivalent to a 2% increase in average NAPLAN scores.

To convert the standard deviation impact of our reforms to a percentage increase we used the 2025 NAPLAN national averages and their reported standard deviations. We calculated the percentage increase of a 0.12 SD improvement and a 0.22 SD improvement for each NAPLAN domain and year level, as there is no aggregation across domains or year levels (table C.3). For example, a 0.12 SD increase in Year 3 reading scores was equivalent to an increase in NAPLAN score of 10.7, which is a 3% increase. The average increase from a 0.12 SD increase in student outcomes was a 2% increase in NAPLAN scores, while the average increase from a 0.22 SD increase was a 4% increase in NAPLAN scores.

Table C.3 – Percentage increase in average National NAPLAN scores

Year level	Domain	Average NAPLAN score	Standard deviation (SD)	0.12 SD increase (as % of average score)	0.22 SD increase (as % of average score)
3	Reading	402.2	89.2	10.7 (3%)	19.5 (5%)
3	Writing	413.9	69.4	8.4 (2%)	15.2 (4%)
3	Spelling	405.1	89.6	10.8 (3%)	19.6 (5%)
3	Grammar and punctuation	408.4	102.6	12.4 (3%)	22.5 (5%)
3	Numeracy	405.3	72.0	8.7 (2%)	15.8 (4%)
5	Reading	491.8	75.6	9.1 (2%)	16.5 (3%)
5	Writing	479.6	76.4	9.2 (2%)	16.7 (3%)
5	Spelling	487.4	80.9	9.7 (2%)	17.7 (4%)
5	Grammar and punctuation	497.2	89.2	10.7 (2%)	19.5 (4%)
5	Numeracy	491.8	77.0	9.3 (2%)	16.9 (3%)
7	Reading	538.4	79.3	9.6 (2%)	17.4 (3%)
7	Writing	538.3	88.1	10.6 (2%)	19.3 (4%)
7	Spelling	541.6	76.7	9.2 (2%)	16.8 (3%)
7	Grammar and punctuation	538.9	89.6	10.8 (2%)	19.6 (4%)
7	Numeracy	544.9	88.0	10.6 (2%)	19.3 (4%)
9	Reading	567.7	77.8	9.4 (2%)	17.0 (3%)
9	Writing	575.0	98.1	11.8 (2%)	21.5 (4%)
9	Spelling	569.0	66.5	8.0 (1%)	14.5 (3%)
9	Grammar and punctuation	559.0	93.8	11.3 (2%)	20.5 (4%)
9	Numeracy	572.6	87.0	10.5 (2%)	19.1 (3%)

Source: ACARA (2025b).

C.2 Enabling tertiary education pathways

This section describes analyses undertaken for chapter 2, including:

- estimating the income benefits of removing barriers to further study
- estimating cost savings and income benefits of faster degrees
- identification and analysis of vocational education and training (VET) to higher education pathways.

Income benefits of removing barriers to further study

Eliminating barriers for those who want to pursue a bachelor's degree could boost the economy by an estimated $2 billion each year due to the higher wages and greater employment participation of more highly-educated people.

This analysis adapts modelling done by the Department of Education's (DoE) Economic Analysis Team. Key steps of this analysis:

1. Estimate the income and employment benefits of getting a bachelor's degree compared to Year 12 (*B*)
2. Assume the number of people without a bachelor's degree who can attain a bachelor's degree by eliminating barriers to further study (*N*)
3. Aggregate the total benefits across the cohort that attains a bachelor's degree (*N x B*)

Step 1 used DoE analysis of data from the Household Income and Labour Dynamics in Australia (HILDA) survey that estimates the lifetime returns from a bachelor's degree compared to year 12, accounting for ability bias. These estimates were done for individuals aged 25 to 64 years who were not studying. DoE analysis shows that further study leads to an income benefit of approximately $23,000 a year.

Step 2 used data from the ABS Work-Related Training and Adult Learning Survey (ABS 2022b). Around 214,000 people cited either 'too much work / no time', 'financial Reasons' or 'did not have the pre-requisites' as their main reason for not enrolling in a bachelor's degree in the past 12 months. Of these, about 88,000 had highest educational attainment of less than a bachelor's degree.

Therefore, the aggregate income benefits per year is:

$$88{,}000 \times 23{,}000 \approx 2\ billion$$

There are several assumptions underlying this analysis.

- All people who face time, financial or pre-requisite barriers to further study have these barriers removed. Removing these barriers would be very challenging and require more than just tertiary harmonisation.
- Barriers to study are removed instantaneously. However, it could take several years for this to happen.
- All people without a higher education degree get a $23,000 income premium from getting a bachelor's degree. This is likely an overestimation since some of this cohort already have a VET qualification, and this $23,000 premium is based on people moving from year 12 to a bachelor's degree. However, some of this cohort have less than Year 12 so would probably get a larger premium from attaining a bachelor's degree. It is also possible that those who already have a bachelor's degree or above would still get an income boost from further study.
- This analysis is static in that removing barriers only impacts the current cohort of people who face these barriers. Policy changes that alleviate these barriers are likely to affect future cohorts as well.

Because of these assumptions, the estimate should not be interpreted as the potential benefit of the reforms in chapter 2. Rather, it is an illustrative example of the potential gains to be made from reducing barriers to further study.

Cost savings and income benefits of faster degrees

If higher education students with a diploma finished their degrees faster, there would be around $1.5 billion in cost savings and income benefits each year.

Key steps of this analysis:

1. Assume that those with a diploma would save one year of study, consistent with the Australian Qualifications Framework (AQF) Pathways Policy (DoE 2013b). Finishing a degree one year faster saves a student *$C* in education costs and earns them *$I* in income (where the opportunity cost of an extra year of study is one year of full-time work)
2. Assume *N* people finish their degrees one year faster due to prior study
3. Calculate the total benefits as *N x (C + I)*

For step 1, *C* is assumed to be $10,000.[77] *I* is assumed to be $75,000, using the median graduate salary from the Graduate Outcome Survey (QILT 2025).

For step 2, of those currently enrolled in a bachelor's degree, 52,600 have a diploma (ABS 2025c). This includes all enrolments, from students in their first year to students in their last. Since a bachelor's degree is typically three years, we scaled this number down by 1/3 to capture one year of people in a graduating cohort.

The total benefit for the graduating cohort of students with a diploma was estimated to be:

$$\frac{52{,}600}{3} \times 85{,}000 \approx 1.5\ billion$$

A key assumption behind this analysis is that all people with a diploma receive credit towards a bachelor's degree. This is unlikely to be the case since not all diplomas would be relevant to the bachelor's degree. Furthermore, as shown in chapter 2, many people already get credit for their diploma. This means that such cost savings and income benefits are already being realised for some people.

Therefore, this estimate should not be interpreted as the potential benefits of our reforms. It is an illustrative demonstration of the potential gains from students finishing their degrees faster.

Analysis of education pathways

Analysis of education pathways in chapter 2 used linked VET and higher education data from the Person Level Integrated Data Asset (PLIDA). A VET-to-higher-education pathway was defined as someone who had enrolled in a VET qualification within two years of starting a higher education qualification.

To do this analysis, several data filters were applied to try to appropriately identify potential education pathways for each student.

- For VET data, observations without a program identifier as well as some one-off or compliance-related programs (like first aid) were removed.
  - However, not all compliance-related programs were removed due to the difficulty in identifying a comprehensive list.
- VET data was filtered to the 'highest' VET qualification per student each year.
- Higher education data was filtered to the student's first enrolment over the full sample (2005 to 2021). In cases of students with multiple course enrolments, data was filtered to a student's major course.

[77] Higher education costs vary depending on the field of study, from around $4,600 to almost $17,000 per year (Australian Government 2025).

  - Instead of filtering to a major course, an alternative would be to filter to the course where the student received the most credit. This may have been more appropriate because where students receive a lot of credit, this may result in the course no longer being recorded as a major course. However, this would only be relevant to a relatively small share of students.

- To link to the PLIDA spine, higher education data only includes students who had a higher education loan program (HELP) loan.
- Once the VET and higher education data had been filtered, an education pathway was identified if a student's last enrolment in a VET program was within the two years before their first enrolment in a higher education qualification.
  - If a student had multiple VET courses prior to their higher education course, data was filtered to the VET course that is most recent.
- Once education pathways were identified, observations were pooled across 2015 to 2019 (starting with 2015 due to the VET data, ending in 2019 to avoid the COVID-19 period).
- For analysis of course length, data was filtered to observations that link to the higher education completions data (i.e. those who have finished their higher education degree).
  - Therefore, analysis by course length used a relatively small sample of students.

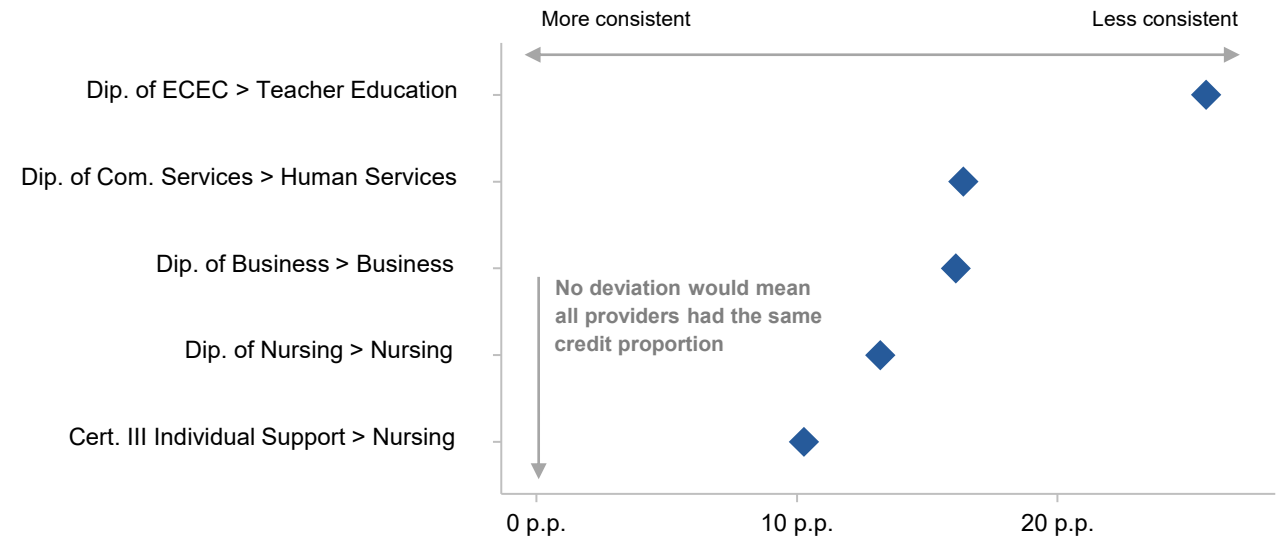
Other notes about the higher education and VET data:

- While some of the filters attempted to identify one observation per student, there were still some students with multiple observations in the final sample (e.g. students starting multiple higher education courses recorded as a major course in the same year, or students who had enrolled in multiple VET courses of the same level in the same year). This resulted in some double counting, but as a robustness check, students with multiple observations were dropped and this did not significantly impact the results.
- Higher education data was not filtered based on the level of qualification. As a robustness check, filtering to just bachelor's degrees did not significantly impact the results.
- VET data was also not filtered based on the level of qualification. Filtering to, for example, certificate III and above may have been an effective way to remove smaller, one-off courses.

Despite high levels of credit recognition on common VET-to-higher-education pathways, we found considerable variation in the proportion of students who receive credit across institutions (figure C.2). Here, variation was measured using the median absolute deviation of the proportion of students who received credit at each provider. We used mean absolute deviation instead of the standard deviation since it is less impacted by outliers.

High variation across institutions suggests scope for more coordinated management of credit recognition, which could result in shorter course completion times for students. However, low variation across providers can also reflect that most institutions consistently do not offer credit to many students, which is the case for the Certificate III in Individual Support to nursing pathway.

Figure C.2 – Variation in the proportion of students who receive credit



p.p. = percentage points. VET-to-higher-education pathways are identified from students who were enrolled in VET within two years prior to being enrolled in higher education. Data is pooled over the years 2015 to 2019. To link to the PLIDA spine, data only includes students who had a HELP loan. Variation across providers is measured by the median absolute deviation of the proportion of students who received credit at each provider. To be included, the provider needed to have at least 20 students who had undertaken this pathway over the sample period. ECEC stands for Early Childhood Education and Care.

Source: PC analysis of higher education and VET data in PLIDA.

C.3 Work-related training in small and medium enterprises

This section describes analyses of work-related training in small and medium enterprises (SMEs) undertaken for chapter 3, including:

- skill and industry analysis of training rates by firm size
- estimates of the impact of training on productivity.

Skill and industry analysis of training rates by firm size

This analysis used the following data from the Work Related Training and Adult Learning Survey 2020-21, extracted using TableBuilder (ABS 2022b):

- participation in work-related training: proportion of employees participating in work-related training in the last 12 months for which they did not incur a cost
- industry: industry of current main job
- skill level: skill level of the occupation of current main job
- firm size: number of employees in current main job throughout Australia.

Firm size, employee status, industry and skill level were based on the employee's current main job and may differ from the job held at the time that work-related training was undertaken.[78]

The training rate in small firms if they had the same industry or skill composition as large firms ($T_{S=L}$) was calculated as:

$$T_{S=L} = \sum_{j=1}^{N} t_{Sj} . e_{Lj}$$

where *S* is small firms, *L* is large firms, *j* is industries or skill level groups, t_{Sj} is the training rate of industry/skill level *j* in small firms, e_{Lj} is the employment share of industry/skill level *j* in large firms, and *N* is the number of industries or skill levels.

An equivalent calculation was used to calculate the training rate in medium-sized firms if they had the same industry or skill composition as large firms.

By industry

Industries were aggregated from the Australian and New Zealand Standard Industry Classification (ANZSIC) 2nd edition 1-digit level following PC (2021) as follows:

- **goods**: agriculture, forestry and fishing; mining; manufacturing
- **distribution services**: retail trade; wholesale trade; transport, postal and warehousing; information media and telecommunications
- **business services**: financial and insurance services; rental, hiring and real estate services; professional, scientific and technical services; administrative and support services
- **personal services**: accommodation and food services; arts and recreation services; other services
- **non-market services**: public administration and safety; education and training; health care and social assistance
- **utilities and construction**: electricity, gas, water and waste services; construction.

Training rates and employment shares by industry are shown in table C.4.

Table C.4 – Training rates and employment share by industry and firm size

	Training rate by firm size (t_{ij})			Employment share by firm size (e_{ij})		
	Small (0–19)	Medium (20–99)	Large (100+)	Small (0–19)	Medium (20–99)	Large (100+)
Goods	10.2	19.6	34.3	11.5	14.3	10.2
Distribution services	12.7	15.8	29.3	17.5	17.5	20.4
Business services	19.4	26.5	39.6	19.0	21.7	16.1
Personal services	8.5	17.8	37.0	21.5	14.3	7.2
Non-market services	25.1	39.5	46.1	14.9	20.6	41.1
Utilities and construction	14.7	26.2	39.8	15.6	10.6	4.9
Total	**15.3**	**25.6**	**39.4**	**100.0**	**100.0**	**100.0**

Employment shares may not sum to 100% due to rounding and TableBuilder data perturbation.

Source: ABS (2022b).

[78] Data on firm size, industry and skill level of the job held at the time work-related training was undertaken is not available. Data on employee status at the time training was done is available, but was not used so that the populations are consistent for all measures used.

By skill level

Skill level was determined using the Australian and New Zealand Standard Classification of Occupations (ANZSCO), which assigns a skill level to occupations. Training rates and employment shares by skill level are shown in table C.5.

Table C.5 – Training rates and employment share by occupation skill level and firm size

	Training rate by firm size (t_{ij})			Employment share by firm size (e_{ij})		
	Small (0–19)	Medium (20–99)	Large (100+)	Small (0–19)	Medium (20–99)	Large (100+)
Level 1 (most skilled)	20.5	32.7	46.1	22.3	35.0	41.0
Level 2	15.0	23.4	41.1	10.2	12.1	11.2
Level 3	15.3	22.2	37.6	21.0	13.4	8.3
Level 4	15.5	22.3	35.6	26.3	27.1	24.3
Level 5 (least skilled)	9.7	16.1	26.4	19.8	12.3	14.8
Total	**15.3**	**25.6**	**39.4**	**100.0**	**100.0**	**100.0**

Employment shares may not sum to 100% due to rounding and TableBuilder data perturbation.

Source: ABS (2022b).

Estimating the productivity impact of increasing training in SMEs

Several studies have estimated the effect of work-related training on labour productivity at the industry or firm level, although none use Australian data. Estimation is complicated because selection into training is likely to be endogenous: unobservable individual or firm characteristics affect both the likelihood of participating in training and the productivity returns to training (De Grip and Sauermann 2013). Most recent studies control for endogenous selection using panel data methods (typically system-GMM estimators), which result in lower estimates than ordinary least squares regression models.

Various measures of training are used in existing studies. Ideally, training should enter a production function as a *stock* of human capital. However, most data on training (including for Australia) captures a *flow* (e.g. the proportion of workers taking part in training in the last year, or number of hours spent in training per year). Some studies use flow variables in production function estimates, with the underlying assumption that human capital from training fully depreciates each year (Colombo and Stanca 2014; Dearden et al. 2006; Konings and Vanormelingen 2015; Liu and Lu 2016; Zwick 2002). Other studies convert flow data to stocks, typically using a perpetual inventory method that assumes firms' stock of human capital from training depreciates at a certain rate each year as well as due to employee turnover (Ballot et al. 2006; Conti 2005; Konings and Vanormelingen 2015; Morikawa 2021).

The potential firm-level productivity effect of increasing training in SMEs was estimated using existing estimates of productivity effects from firm-level studies using flow measures of training (table C.6).

The change in training modelled was increasing training in small firms (defined as having 0–19 employees) to the level in medium-sized firms (20–99 employees); and increasing training in medium-sized firms to the level in large firms (100+ employees). The impact of increasing training in small firms and medium-sized firms on productivity was calculated as follows:

- for estimates of the impact of changes in training rates, productivity effects were multiplied by the gap (in percentage points) in the percentage of employees participating in training

- for estimates of the impact of changes in training hours, productivity effects were multiplied by the gap in annual hours or days (assuming that one day equals eight hours) of training per employee
- for estimates of the impact of changes in training expenditure, productivity effects were multiplied by the gap (in percentage) in annual hours of training per employee, assuming the training cost per hour is fixed.

Table C.6 – Estimates of effect of training on labour productivity

	Country	Years	Effect of training on firm-level productivity (value add per worker)
Colombo and Stanca (2014)	Italy	2002–2005	↑ employees participating in training by 10 p.p → ↑ productivity by 0.74% ↑ annual training per employee by 1 hour → ↑ productivity by 0.06%
Konings and Vanormelingen (2015)	Belgium	1997–2006	↑ employees participating in training by 10 p.p. → ↑ productivity by 3.2% ↑ annual training per employee by 1 hour → ↑ productivity by 0.76%
Liu and Lu (2016)	China	2003–2007	↑ training expenditure by 10% → ↑ productivity by 1.1%
Zwick (2002)	Germany	1997–2000	↑ employees participating in training by 10 p.p. → ↑ productivity by 2.3%

Reported effects are from panel specifications that control for unobserved firm- or industry-level heterogeneity and endogeneity of training participation (typically system-GMM estimators. p.p. = percentage points. Colombo and Stanca (2014) report the productivity effect using a standardised measure of annual days of training. The productivity effect has been converted using reported values for mean and standard deviation in Colombo and Stanca's sample and the assumption that one day equals eight hours of training.

The estimated productivity effects (table C.6) capture the impact of training on productivity within firms or industries, rather than economy-wide. If there are inter-firm spillovers from training, the productivity effects will be higher in industry-level than in firm-level analysis (Dearden et al. 2006, p. 405). Estimates include spillovers within firms (such as from trained to untrained workers) but neither type of analysis will include spillovers that occur across industries (such as those that increase adaptability or reallocation across industries). We have been unable to find any estimates of the impact of training on aggregate productivity.

Two measures of training were used: participation in training; and average time spent on training (including as a proxy for training expenditure) (table C.7). The mean and median estimated effect on productivity of increasing training in SMEs is shown in table C.8.

The results are shown in figure 3.2 of chapter 3.

Table C.7 – Work-related training indicators by firm size

	Training participation rate[a] (% of employees)	Average time spent on training[b] (hours per employee per year)
0–19 employees	15.3	13.2
20–99 employees	25.6	33.8
100+ employees	39.4	75.8

a. Percentage of employees taking part in work-related training in the last 12 months for which they did not incur a cost.
b. Product of number of courses in the last 12 months, the proportion of work-related training courses that are employer-funded and the average hours spent on the last employer-funded course, divided by the total number of employees.

Source: ABS (ABS 2022b).

Table C.8 – Estimated effect of training on labour productivity in SMEs

		Productivity impact of increase in training (%)	
Source of estimates	Training measure	Small to medium	Medium to large
Colombo and Stanca (2014)	% of employees participating in training	0.8	1.0
	Annual hours of training per employee	1.2	2.5
Konings and Vanormelingen (2015)	% of employees participating in training	3.3	4.4
	Annual hours of training per employee	15.7	31.9
Liu and Lu (2016)	% of employees participating in training	9.9	8.5
Zwick (2002)	Annual hours of training per employee	2.4	3.2
Median estimated effect		2.8	3.8
Mean estimated effect		5.5	8.6

Percentage increase in firm-level labour productivity. Small to medium is effect of increasing training in small firms (0–19 employees) to those of medium-sized firms (20–99 employees). Medium to large is effect of increasing training in medium firms to that of large firms (100+ employees).

Source: PC estimates.

C.4 Analysis of occupational entry regulations

Chapter 4 on occupational entry regulations (OER) is supported by a range of analytical work. This section outlines the methodological details of the analyses across the following areas:

- developing the OER stringency index
- estimating the labour productivity effects of easing OER stringency
- estimating the economy-wide impacts of easing OER stringency
- Google Business ratings as an indicator of occupational service quality
- identifying the presence of OERs across jurisdictions using OpenAI
- characteristics of workers in licensed occupations.

Developing the OER stringency index

The OER index, as described in an OECD working paper by von Rueden and Bambalaite (2020) and outlined below, can be used to compare OER stringency across occupations and jurisdictions. The index methodology has previously been applied to select Australian jurisdictions and occupations by Barker (2022) and Bowman et al. (2024). The PC has extended the index to a total of 22 occupations and to all Australian states and territories to support analysis of differences in stringency.

The OECD's published methodology requires a degree of interpretation when determining responses to questions that form part of the index. This section summarises the PC's interpretation of the questionnaire through additional guidance and examples. It outlines the OECD's original index questions, possible responses and definitions – drawing on annex D of the OECD working paper (von Rueden and Bambalaite 2020) and Australian work conducted by the Reserve Bank of Australia (RBA) and NSW Treasury (Bowman et al. 2024) – in addition to guidance developed by the PC and applied in this inquiry.

The index has several shortcomings. Limitations that apply generally include that:

- the narrow set of questions and response options are not able to fully capture the complexity of the Australian regulatory environment (specific examples are below)

- choices about how to weight each individual question and scale the final score are subjective and will affect the final index value and comparisons. We have adopted the OECD's choice of weights and scaling (described below) to better enable comparisons with past analysis
- stringency reflects some of the costs associated with OER; the index is not designed to capture the benefits of OER.

Additional limitations that apply to specific questions are outlined below.

In some instances, the PC's OER index scores do not match scores produced by others for Australian occupations and jurisdictions (such as Bowman et al. (2024)). This is explained by factors such as changes in OERs over time and differences in interpretation and application of the OER index questions. For example, in assessing the number of pathways into an occupation (question 4), the PC has counted pathways with reference to groupings of AQF levels.

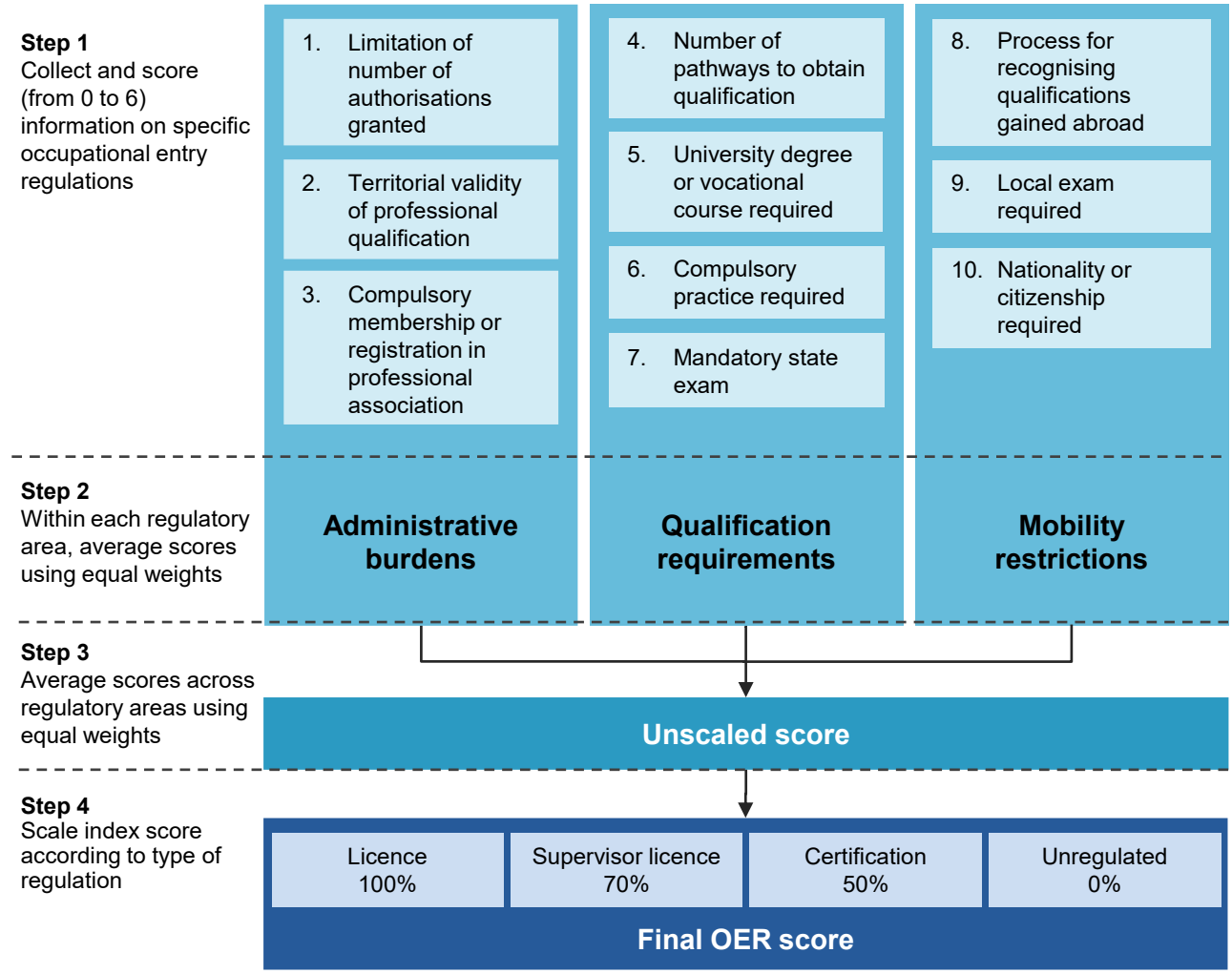
The PC has used the OER index in chapter 4 to help identify where there are differences in stringency across jurisdictions for the same occupations. However, given the shortcomings of the index, it should not be used for assessing whether the level of OER for any occupation is appropriate. Rather, the PC has drawn on additional information to explore whether the level of stringency associated with select occupations is appropriate.

Overview of OER index methodology

The structure of the OER stringency index is illustrated in figure C.3. The data underlying the index consists of scored responses to 10 questions, covering three areas of regulation: administrative burdens, qualification requirements and mobility restrictions. A score for each regulatory area is calculated by averaging individual scores within each regulatory area. The unscaled index score is then calculated by averaging scores across the three regulatory areas. Finally, the index score is scaled according to the type of regulation that applies to the occupation: a licence, supervisor licence, certification or no regulation. These terms are defined below.

The final index score is between 0 and 6, where a higher number indicates higher stringency.

Figure C.3 – Structure of the OER stringency index



Source: Based on von Rueden and Bambalaite (2020).

The OER index questionnaire consists of five questions to understand the type of regulation that applies to the occupation, and 10 questions scored from 0 to 6 that contribute to the index score.

Questions – type of regulation

Question A

Question: Is the profession regulated in this jurisdiction?

Answer: Yes

No

OECD guidance: None.

PC guidance: Identify legislation referring to either the occupation title or deferring powers to another regulatory body that in turn refers to the occupation title.

Legislation that refers to the premises and not the worker should still be considered regulated, but under a supervisor licence (refer to question D).

Where an occupation only has entry regulations through education and training requirements, it must require at least six months of cumulative training time to be considered regulated for the purposes of the index.

If the profession in the OECD list of occupations examined does not perfectly align with any profession in the Australian jurisdiction, refer to the closest Australian occupation based on the OECD core activities list.

Examples:

- Butchers in New South Wales have regulations applicable to the premises but not to the individual. The premises must abide by food health and safety standards and at least one individual must produce evidence of a food handling hygiene certificate (NSW Food Authority nd). This profession is regulated however the type of licence is a supervisor licence (questions D and E). The following questions should be answered from the perspective of the premises.
- A hypothetical occupation only requires a three-day fire safety course and a two-week food handling course in order to practice. As the total training time is less than six months, we would not consider this profession to be regulated for the purposes of the index.
- Taxi drivers are included in the OECD list of occupations but are not an explicit occupation category referred to in legislation in Western Australia. However, the core activities of a taxi driver closely align with passenger transport drivers, which are regulated in Western Australia (WA DTMI nd). As such, all future questions should be answered from the perspective of passenger transport drivers.

Limitations:

- The definition of a regulated occupation and its scope of practice may differ across jurisdictions. This complicates cross-jurisdictional comparisons as reserved activities can differ.

Question B

Question: Are there any reserved activities?

Answer: Yes

No

OECD guidance: A profession has an exclusive right to an activity if it is the only one allowed to provide the activity.

A profession has a shared exclusive right when that profession and a limited number of other professions are the only ones allowed to provide the activity. For example, in some countries, lawyers and notaries may both have the shared exclusive right to administer oaths. It may be possible that the right to exercise a specific activity is shared by the profession with the state.

There is no exclusive right to an activity if anyone can provide this activity without having to fulfil any special criteria.

PC guidance: If there are multiple hierarchies of licences, where professions higher in the hierarchy can complete all the activities of those lower in the hierarchy, then those professions lower in the hierarchy should not be considered to have reserved activities.

The ability to perform the activity via an apprenticeship or through study should not be considered as violating a profession's exclusive right to an activity.

If licensing only applies to the activity if its value exceeds a certain threshold or if it is combined with other activities, the occupation is still considered to have reserved activities.

Examples:

- Enrolled and registered nurses do not have any reserved activities, as all activities can be completed by a nurse practitioner or a doctor. The answer is 'no'.
- Hairdressing apprentices in New South Wales can perform some hairdressing activities during their apprenticeship despite not having the required qualification to work in the occupation (NSW Fair Trading nd). Hairdressers are still considered to have an exclusive right to the activity. The answer is 'yes'.
- In New South Wales, stand-alone contracts for internal paintwork do not require a licence unless the paintwork is part of other home building work (NSW Fair Trading nd). A contractor licence is required to do residential building or trade work (including painting) when valued at more than $5,000 in labour and materials (NSW Fair Trading nd). Painters are considered to have a reserved activity. The answer is 'yes'.

Question C

Question: Is the profession title protected by law?

Answer: Yes

No

OECD guidance: A professional title is a name used to indicate a particular qualification. A professional title is protected when public authorities define the conditions for conferring it or give a particular body (e.g. a professional association) the power to do so and if they protect the use of that title by imposing fines or other measures when this is used improperly.

A professional title may be combined with the existence of exclusive or shared exclusive rights or not. When there are no reserved activities, anyone can exercise those activities, but the use of the title is restricted to those that meet the requirements and have been authorized to use it.

Question D

Question: How is access to the profession regulated?

Answer: Unregulated

Licence

Supervisor licence

Certification

RBA guidance: Licensing: Practitioner must obtain legal authorisation to practice.

Supervisor licence: Practitioners can undertake the regulated activity under the supervision of a fully licensed professional.

Certification: Practitioners can voluntarily be certified to use a legally protected title, but no one is barred from practicing.

Unregulated: Practitioners can freely practice without any restriction.

PC guidance: Supervisor licence is used when an employee with a high school education can start working in the occupation without any other qualifications as long as there are supervisory arrangements. These arrangements could include another employee being present with the required licence or working at an approved premises. If there is a supervisor licence, all future questions should be answered from the perspective of the supervisor.

Examples:

- A gas fitter in the Northern Territory can work without any qualifications under a provisional gasfitter licence if they are supervised by a general gasfitter licensee (NT WorkSafe nd). All future questions should be assessed from the perspective of the supervisor and the final OER index number will be scaled by 70%.

Limitations:

- For some professions, there may be multiple tiers of licensing available. For example, some licences allow the practitioner to contract, some allow the practitioner to practice but not contract work, and some licences may allow practitioners to practice but only under supervision of someone with a higher level of licence (the supervisee still requires a licence). This question does not capture where there are additional tiers of licensing.

Question E

Question: Does only a supervisor need to obtain authorisation?

Answer: Yes

No

OECD guidance: It is possible that people can exert the regulated activity so long as they do so under the supervision of one fully certified/licensed professional. For example, electricians in Belgium can do electrical work without holding any qualification provided that they are under the qualified person's effective and permanent control.

Questions – administrative burden

Question 1

Question: Limitation to number of authorisations granted?

Answer: Yes (6)

No (0)

OECD guidance: None.

PC guidance: Answer 'yes' only if legislation or regulatory bodies explicitly state that there are a limited number of licences available.

Examples:

- For a hypothetical occupation, it is known that only a few people enter the training program each year due to tough academic requirements which artificially put a limit on the number of authorisations granted. In this circumstance, answer 'no' because there is no clear limit on the number of licences.

Limitations:

- The number of people in some professions may be restricted through an entrance exam. It is possible that the 'pass-rate' of the entrance exam varies to limit the number of licences in the profession. In these circumstances there is no official limit on the number of professions allowed to practice so question 1 has been answered 'no'. However, there may be an unofficial limit controlled through the exam and affecting OER stringency, which is not captured by the index.

Question 2

Question: Restrictions on territorial validity of professional qualification

Answer: Yes (6)

No (0)

OECD guidance: The question tries to ascertain if a professional can exercise in the whole jurisdiction or only in parts of the jurisdiction. The answer should be yes, even if such restrictions can be overcome by taking additional steps (i.e. taking additional exams, obtaining additional licences/authorisations, etc.).

PC guidance: Replace this question with, does this state or territory automatically recognise licences or authorisations from other jurisdictions? If so, the answer should be 'no'.

The answer should also be 'no' if there are no reserved activities, including in cases where the occupation requires a supervisor licence, a certificate or is unregulated.

The answer should be 'yes' if people with licensing and qualifications from other jurisdictions are not automatically allowed to work in the jurisdiction.

Examples:

- Queensland has not signed up to automatic mutual recognition for real estate agents (DEWR 2025c). The answer should be 'yes'.
- Victoria has signed up to automatic mutual recognition for real estate agents (CAV nd). The answer should be 'no'.

Question 3

Question: Compulsory membership or registration in professional association?

Answer: Yes (6)

No (0)

OECD guidance: None.

PC guidance: Consider registration with professional associations and regulators. The registration body can be Australian and not specific to the jurisdiction. The registration body should be specific to the occupation and not a general body that operates a registration scheme for a wide variety of unrelated occupations.

Examples:

- Select healthcare professionals such as medical practitioners, chiropractors, midwives and psychologists are required to register with the Australian Health Practitioner Regulation Agency (Ahpra) and their

respective National Boards. Practicing without an Ahpra registration, even if registered with a jurisdiction specific board, is prohibited (Ahpra nd). The answer should be 'yes'.

Questions – qualification requirements

Question 4

Question: How many pathways are there to obtain the qualifications to legally practice the profession?

Answer: One = full restrictive (6)

Two = half restrictive (3)

Three or more = no restrictions (0)

OECD guidance: A pathway is the process by which a person can obtain the qualifications to legally practise the profession (e.g., one pathway may require an undergraduate degree plus one year of compulsory practice, while another could require a short vocational course and a much longer period of compulsory practice).

PC guidance: Determine how many entry pathways allow someone to practise the profession, where qualifications are counted within the following groupings:

- certificate/diploma: AQF level 1–6
- higher education: AQF level 7–10
- work experience: the experience should last at least six months duration.

If an occupation requires either a bachelor's degree or a master's degree to qualify, as both degrees fall within the higher education grouping, the answer is 'one'.

If the only pathway requires both higher education and work experience, the answer should be 'one'.

The following are not considered pathways:

- rare circumstances that grant temporary authorisation due to emergencies or temporary staff shortages
- mutual recognition
- reapplication for a licence.

Examples:

- Hairdressers in New South Wales require a Certificate III (NSW Fair Trading nd). This is a single pathway. The answer should be 'one'.
- Land agents in South Australia can complete a diploma of property or a degree in law or business (SACBS 2024). There are two pathways. The answer should be 'two'.
- School teachers in Tasmania require completion of an accredited initial teacher education program, which includes accredited bachelor's degrees and master's degrees (TRB Tasmania nd). These types of degrees both fall under higher education. The answer should be 'one'.

Question 5

Question: Is an undergraduate university degree or a vocational course required in order to legally practice or to obtain the professional title when this is protected by the law, whether this is required by law or by self-regulation by professional bodies, or a combination of the two? If so, for how long?

Answer: No (0)

Yes, up to 1 year (1)

Yes, more than 1 year to 2 years (2)

Yes, more than 2 years to 3 years (3)

Yes, more than 3 years to 4 years (4)

Yes, more than 4 years to 5 years (5)

Yes, more than 5 years (6)

OECD guidance: None.

PC guidance: Answer should be 'no' if it is possible to obtain entry into the occupation via prior experience instead of a qualification. Duration of degree or course should be treated as the shortest, full-time equivalent study time for either the certificate/diploma or higher education pathway from the perspective of an individual with a high school diploma and no further qualifications.

Examples:

- To obtain a qualification to participate in a hypothetical occupation, the regulator mandates either a certificate IV or a diploma. The certificate IV takes 18 months of full-time equivalent study to complete. The diploma takes 12 months. As the diploma is the shortest full-time equivalent study time, the answer should be 'yes, up to 1 year'.

Question 6

Question: Is relevant compulsory practice required to legally practice or to obtain the professional title when this is protected by the law, whether this is required by law or by self-regulation by professional bodies, or a combination of the two?

Answer: Yes (6)

No (0)

OECD guidance: Compulsory practice is done after the completion of the studies or in some cases could be alternative to studying. Instructions: The answer should be 'no', if an internship is required as part of the academic course.

PC guidance: Compulsory practice must be separate from the process of obtaining the qualification. Work-integrated learning, placements, or apprenticeships are not included.

Answer should be 'no' if practice is not required when completing a certificate/diploma or higher education.

Answer should be 'yes' if the work experience pathway is present in question 4 and the certificate/diploma and higher education pathways are absent.

Answer should be 'yes' if compulsory practice is required and the certificate/diploma and higher education pathways are present in question 4 and the experience pathway is absent.

Question 7

Question: Is there a requirement to pass one or more professional examinations in order to legally practice or to obtain the professional title when this is protected by the law?

Answer: Yes (6)

No (0)

OECD guidance: A professional examination is any exam the candidate professional has to successfully pass to be allowed to practice. A typical example is the bar exam that is necessary to pass to become a lawyer.

PC guidance: Exam should refer to tests of occupation specific skills, not tests of medical fitness nor tests that people may take without any interest in the occupation such as a driving test or English proficiency tests. Examination must be separate from the process of obtaining a qualification, such as higher education exams.

Answer should be 'yes' if there are no supplementary or alternative pathways to obtaining the qualification other than successfully passing the examination. This applies even when the examination may occur prior to the commencement of a pathway.

Answer should be 'no' if examination can be avoided by completing a certificate/diploma, higher education, or work experience.

Examples:

- To obtain a licence to drive a public passenger vehicle and hence become a taxi driver in Tasmania, you must successfully complete a passenger vehicle knowledge test at a service centre (Service Tasmania nd). The answer should be 'yes'.
- All plumbers in Victoria must pass a registration exam for the classes of plumbing they wish to register in (BPC nd). The answer should be 'yes'.

Questions – mobility restrictions

Question 8

Question: Do laws or regulations establish a clear and transparent process for recognising qualifications that have been earned abroad?

Answer: Yes (0)

No (6)

OECD guidance: None.

PC guidance: A 'clear and transparent' process consists of a government body (or legislation) outlining criteria for recognising qualifications gained abroad or demonstrates a pathway to recognising qualifications gained abroad. Qualifications gained in New Zealand should not be treated as qualifications gained from abroad.

Answer should be 'yes' if there exist jurisdiction-wide programs (including at the Commonwealth level) that offer qualification recognition processes for a range of occupations.

Answer should be 'yes' if a process exists to recognise qualifications gained from any country (excluding New Zealand).

Answer should be 'no' if no process exists to recognise qualifications gained abroad or if the only country the process is available for is New Zealand.

If there is no qualification relevant to the occupation in the jurisdiction, the answer should be 'yes', even if no process exists.

Examples:

- The South Australian Department of State Development offers an overseas qualification recognition service. Determinations are on a case-by-case basis and eligibility only applies to certain qualifications. Further criteria are not publicly available but more information can be gained by contacting the department (SADSD nd). As an assessment process is present, the answer should be 'yes'.
- Hairdressers in Victoria do not require a qualification (NSW PEC 2024). The answer is 'yes' even if there is no process for recognising qualifications from abroad.

Question 9

Question: Are foreigners required to take a local examination in order to practice?

Answer: Yes (6)

No (0)

OECD guidance: None.

PC guidance: The exam should be designed for foreigners and not an exam that Australian nationals would also be expected to take. The exam should refer to tests of occupation-specific skills, not tests of medical fitness nor tests that others may take without any interest in the occupation such as a driving test or English proficiency tests.

Question 10

Question: Is nationality or citizenship required for the professional to practice in your country?

Answer: Yes (6)

No (0)

OECD guidance: None.

PC guidance: Nationality or citizenship of a country needs to be explicitly mentioned as a requirement to practice. Requirements to pass generic security clearance tests or working visas are not restrictions on nationality or citizenship.

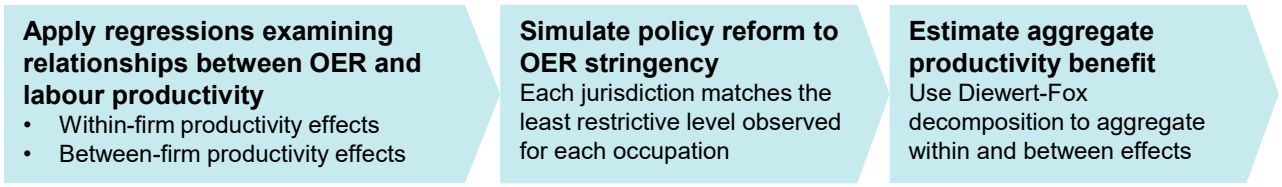
Answer should be 'yes' if only Australians and New Zealand citizens are allowed.

Estimating the labour productivity effects of easing OER stringency

OERs for an occupation can vary between states and territories, although the risks faced by workers and consumers are often identical. We examined the extent to which productivity could be improved through OER reform, focusing on differences in stringency across states and territories. If each state and territory government reduced the stringency of OERs in 12 selected occupations, to that of the jurisdiction with the lowest OER stringency, it could boost labour productivity in the industries associated with those occupations by 0.8% (chapter 4).

Figure C.4 summarises the approach taken for this estimate.

Figure C.4 – Approach to quantifying the benefits of reducing overly stringent OERs



Relationships between OER stringency and labour productivity

Reducing the stringency of OERs can affect productivity in a number of ways.

- Within-firm effects: because OERs can limit competitive pressures and restrict the supply of workers, reducing their stringency can have the opposite effect of enhancing firm capabilities and incentives to improve efficiency.
- Between-firm effects: more productive firms attract more skilled workers than lower productivity firms, but OERs can hinder this reallocation of labour. Reducing OER stringency can therefore improve productivity through this channel.

Bambalaite et al. (2020, pp. 21–23) estimated regression equations to test the relationships between OER and these productivity channels, using firm-level data on OER stringency, employment and labour productivity across EU countries from 2014 to 2016.

The baseline specification of the within-firm productivity estimation captures the relationship between OER and productivity growth after accounting for how fast frontier firms are growing, and how far the firm is from the frontier (the gap). Faster frontier growth is expected to lift the growth of firms below the frontier, with this 'catch up' effect stronger for firms with a larger gap because they have more potential to benefit from innovating and adopting new technology.

$$\Delta Prody_{f,i,c,t} = \alpha_1 + \alpha_2\, \Delta Frontier_{i,t} + \alpha_3 Gap_{f,i,c,t-1} + \beta Regulation_{i,c} + \gamma X_{f,i,c,t} + \delta_{c,t} + \delta_i + \varepsilon_{f,i,c,t} \quad (1)$$

- f, i, c, t refer to firm, industry, country and year, respectively.
- $\Delta Prody_{f,i,c,t}$ is firm labour productivity growth (change in logarithm of labour productivity).
- $\Delta Frontier_{i,t}$ is the productivity growth of the top 5% most productive firms in the industry for a given year.
- $Gap_{f,i,c,t-1}$ is the lagged distance from the firm's productivity to the productivity frontier.
- $Regulation_{i,c}$ is the stringency of OER for the industry.
- $X_{f,i,c,t}$ represents firm-level control variables (firm age and size as measured by the logarithm of the number of employees).
- $\delta_{c,t}$ and δ_i refer to fixed effects for country-time and industry respectively, accounting for unobserved characteristics across these dimensions.

β is the main coefficient of interest and is expected to be negative as OERs limit productivity growth by constraining firm capabilities and incentives to improve efficiency. However, if there are other industry-country specific factors (such as other labour market regulations) that are correlated with OER stringency that affect productivity growth, this coefficient may reflect those other effects.

The baseline specification of the between-firm productivity estimation examines how higher productivity firms attract more labour when the market allows for the efficient allocation of resources, with OER potentially affecting this reallocation.

$$\Delta Employment_{f,i,c,t} = \alpha_1 + \alpha_2 Prody_{f,i,c,t-1} + \alpha_3 Prody_{f,i,c,t-1} * Regulation_{i,c} + \gamma X_{f,i,c,t} + \delta_{c,i,t} + \varepsilon_{f,i,c,t} \quad (2)$$

- $\Delta Employment_{f,i,c,t}$ is firm employment growth.
- $Prody_{f,i,c,t-1}$ is the lagged logarithm of labour productivity of the firm, demeaned by industry and year.
- $X_{f,i,c,t}$ represents firm-level control variables (firm age and size as measured by the logarithm of the number of employees).
- $\delta_{c,i,t}$ refers to country-industry-time fixed effects, accounting for unobserved characteristics across these dimensions.

α_3 is the main coefficient of interest and is expected to be negative as OERs slow down the efficient reallocation of labour. Like the previous regression, if there are other industry-country specific factors that are correlated with OER stringency and that also affect labour reallocations, this coefficient may reflect those other effects.

Note that this between-firm productivity estimation only considers the intensive margin of employment growth among firms. Between-firm productivity effects could also occur through less productive firms exiting and more productive firms entering the market; however, such relationships were not explored in the analysis.

Bambalaite et al. (2020, pp. 3, 23–29) found a statistically significant negative relationship between OER stringency and productivity across the two productivity channels they explored (table C.9).

Table C.9 – Estimated relationships between OER stringency and productivity effects – Bambalaite et al. estimates

	(1) Within-firm channel (β)	(2) Between-firm channel (α_3)
Dependent variable	**Labour productivity growth**	**Employment growth**
Regression coefficient of interest	-0.0166**	-0.00455**
Observations	254,380	275,933
R-squared	0.182	0.061

** indicates p-value < 0.05. Results of primary regressions using OER indicator are shown. Results of other regression specifications in Bambalaite et al. (2020). Data spans 11 EU countries and 11 occupations over the period 2014 to 2016.

Source: Bambalaite et al. (2020, pp. 25, 29).

We attempted to estimate these regression equations using Australian firm-level data in the Business Longitudinal Analysis Data Environment (BLADE) and an Australian version of the OER stringency index covering select occupations across all states and territories (see previous section on how this index was developed).[79] However, the regression results were either not significant or not robust to variations in

[79] The analysis explored different control variables to Bambalaite et al. (2020), drawing on similar research using BLADE data by Bowman et al. (2024).

specification.[80] A selection of regression results is presented in table C.10. The coefficients of interest were more likely to appear significant when applying heteroskedasticity consistent standard errors compared to cluster robust standard errors. As the OER stringency index only varies by industry and jurisdiction, clustering at that level reduces the variation available for inference, leading to larger standard errors and fewer statistically significant results.

Table C.10 – Estimated relationships between OER stringency and productivity effects – select PC estimates

	(1) Within-firm channel (β)				(2) Between-firm channel (α_3)			
Dependent variable	**Labour productivity growth**				**Employment growth**			
Choice of standard errors	**Heteroskedasticity consistent**		**Cluster robust**		**Heteroskedasticity consistent**		**Cluster robust**	
Choice of labour variable[a]	**FTE**	**Imputed FTE**	**FTE**	**Imputed FTE**	**FTE**	**Imputed FTE**	**FTE**	**Imputed FTE**
Regression coefficient of interest	-0.0002	-0.0052***	-0.0002	-0.0052	0.0045***	0.0008	0.0045	0.0008
Observations	464,883	1,295,866	464,883	1,295,866	525,351	1,352,239	525,351	1,352,239
R-squared	0.137	0.104	0.137	0.104	0.069	0.031	0.072	0.039

*** indicates p-value < 0.01. Control variables in both regressions include firm size categories, lagged sales growth, state-time and industry-time fixed effects. The between-firm channel regression also includes interaction terms between industry and the lagged logarithm of labour productivity. Data spans eight states and territories and 14 occupations over the period 2015 to 2019. **a.** FTE = full-time equivalent employees. Many firms do not have any employees recorded and hence no FTE data. A variation was explored, in which firms with missing FTE values were imputed using a random forest model.

Source: PC estimates.

The lack of a significant relationship in these results, when compared with the research by Bambalaite et al. (2020), may be partly because of the lower level of variation in OERs when comparing within Australia than when comparing across countries in the Bambalaite et al. (2020) analysis. They covered more countries than there are Australian states and territories. For occupations they deemed to be professional services (accountants, architects, civil engineers, lawyers and real estate agents), the OER index values between the first and third quartiles ranged from zero to at least 2.5 across European countries (Bambalaite et al. 2020, p. 20). Across Australian states and territories in our analysis, the OER index values between the first and third quartiles spanned from about 0.5 to 1.3.

Past Australian research had also estimated the relationships between OER and employment growth (the between-firm channel) and found a significant relationship (Bowman et al. 2024, p. 26). While also using BLADE data, Bowman et al. (2024) focused on OERs in New South Wales, Victoria and Queensland. Differences in the interpretation and application of the OER index questions contribute to differences in OER index values across the different studies (described above).

[80] Variations of the regressions were run for example: using different choices of standard errors (heteroskedasticity consistent standard errors or robust standard errors clustered by industry and jurisdiction); using different definitions of labour productivity (including using FTE employees, headcount and imputed FTE employees as the denominator, and value added and output as the numerator); using different time periods of data; omitting select occupations; using the OER stringency index or a measure of years to achieve required qualifications; applying an alternate specification of the within-firm regression that interacts OER with the gap variable (assuming that OERs affect the firm catch up mechanism); and applying alternate specifications in the between-firm regression that interacts lagged productivity with state employment growth.

We applied the regression relationships estimated by Bambalaite et al. (2020), rather than the Bowman et al. (2024) estimates, to ensure an internally consistent set of coefficients was used for both within-firm and between-firm productivity channels in simulating the potential effects of policy reform.

Simulating the aggregate productivity benefits of easing OER stringency

The Diewert-Fox decomposition expresses aggregate productivity growth in terms of within-firm and between-firm effects (box C.2). We applied the decomposition to simulate how changes in OER stringency could affect productivity through within-firm and between-firm channels, using Bambalaite et al.'s (2020) estimated regression coefficients, firm-level BLADE data and the Australian OER stringency index.

Box C.2 – The Diewert-Fox decomposition

The Diewert-Fox decomposition expresses aggregate productivity growth in terms of within-firm and between-firm effects (Diewert and Fox 2010).

$$\Delta\Pi_t = \sum_{f\epsilon C} \bar{s}_f \Delta\pi_{f,t} + \sum_{f\epsilon C} \Delta s_{f,t}\left(\bar{\pi}_f - \bar{\Pi}_C\right) + \sum_{f\epsilon N} s_{f,t}\left(\pi_{f,t} - \Pi_{C,t}\right) - \sum_{f\epsilon X} s_{f,t-k}\left(\pi_{f,t-k} - \Pi_{C,t-k}\right)$$

- f, t refer to firm and time, respectively.
- C, N, X are the subset of continuing firms (that survived into the current period), firms that entered this period, and firms that exited by this period, respectively.
- $\pi_{f,t}$ is the productivity of a firm at time t.
- $s_{f,t}$ is the firm's market share (represented by share of employment) at time t.
- $\Pi_{C,t}$ is the average productivity of continuing firms at time t.
- A bar above a variable denotes an average across time t and time $t-k$. This ensures that the decompositions are invariant to the treatment of time, when compared with the approach of taking the value at a specific time period. Under the Diewert-Fox approach, reversing the time periods results in symmetry, where the aggregate productivity difference will equal the negative of the original productivity difference (Diewert and Fox 2010, pp. 47–48).

The first set of terms in the equation represents within-firm productivity effects – the change in average productivity of continuing firms.

The second set of terms represents between-firm productivity effects – gains due to differences between firm productivity and average productivity, weighted by change in employment share. If a firm's employment share increases and it is more productive than the average firm, this has a positive effect on aggregate productivity.

The third and fourth set of terms represents between-firm productivity effects arising from more productive firm entrants and less productive firm exits, respectively.

In the simulation, time $t-k$ is the base period (before reform) and time t is the period after reform. The result should be interpreted as a comparative static estimate – it reflects the hypothetical effect on productivity growth if the only difference was the level of OER stringency, holding other conditions constant. The simulation only considers changes in productivity or employment that result from OER stringency, assuming that no other growth occurs. The decomposition is applied in the following way.

1. Use data on relevant firms within industries that map to occupations of interest (table C.11). These occupations are where OER stringency differs between states and territories. Firm-level data in 2018-19 is taken as the base period of the simulation, $t-k$.
2. For each firm, identify the amount that OER stringency could decrease by, based on the respective occupation and jurisdiction. The simulated policy change assumes that each state and territory aligns its OER stringency to match the least restrictive level. (Figure 4.2 in chapter 4 shows differences in OER stringency levels for the same occupation across states and territories.)
3. Calculate for time t (the post-reform period of the simulation) the percentage point change in productivity and employment for each firm by applying the relevant regression coefficients from equations (1) and (2). s represents state or territory in the equations below. In the first equation, firm productivity increases from a reduction in OER stringency. In the second equation, because $Prody_{f,i,s,t-k}$ is the lagged logarithm of productivity, demeaned by industry, employment grows when productivity is relatively high and falls when it is relatively low.
   - » $\Delta Prody_{f,i,s,t} = \beta\left(Regulation\_reduction_{i,s}\right)$
   - » $\Delta Employment_{f,i,s,t} = \alpha_3 Prody_{f,i,s,t-k} * \left(Regulation\_reduction_{i,s}\right)$
4. Given the estimates from the previous step, calculate the change in levels of productivity and employment for each firm (assuming no other factors affect these levels), and other elements required for the first two sets of terms in the Diewert-Fox decomposition formula. Employment shares are used as weights in the formula – these are calculated across all included firms to allow these weights to sum to one. Average productivity, and differences from the average, are calculated at the industry level to ensure that a firm's productivity is considered relative to the typical performance in that industry.
5. Abstracting away from firm entry and exit,[81] apply the Diewert-Fox decomposition formula to calculate the change in aggregate productivity and aggregate productivity growth rate.

The analysis found that if each state and territory government reduced the stringency of OERs in 12 selected occupations to that of the jurisdiction with the lowest OER stringency, it could boost labour productivity in the industries associated with those occupations by 0.8% (chapter 4).

Data limitations

We used firm-level data from BLADE, which includes administrative data from the Australian Taxation Office such as Business Income Tax (BIT) and Pay As You Go (PAYG) data. Variables from these datasets allowed us to estimate firm-level labour productivity (drawing on techniques used in past research (Bowman et al. 2024; Fox et al. 2020) and employment growth. Firm-level labour productivity was defined as value added divided by the number of full-time equivalent (FTE) employees.

A number of key data limitations and assumptions affected how this data was applied to the simulation.

- There are limitations in key variables required to calculate firm-level labour productivity and employment, for example:

– a measure of FTE employment is included in the PAYG data, estimated by the ABS based on PAYG headcount (Hansell et al. 2015). However, many firms do not have any employees recorded – including the majority of individuals in the BIT data (companies, trusts and partnerships are more likely to have FTE

[81] We abstracted from between-firm productivity effects arising from more productive firm entrants and less productive firm exits in this analysis due to the lack of a clear way to identify entrants and exits in such a simulation. Past research using the decomposition approach on sales mark-ups has also abstracted from such effects as they are small (Hambur 2021, p. 11). It is also assumed that firms do not move between states and territories.

data). Those firms are likely to still be providing labour inputs, but those labour inputs do not appear in the data. These firms were excluded from this analysis.
  - some firms record negative value-added, leading to negative firm-level labour productivity, which prevents the use of logarithmic transformations required under equations (1) and (2). These firms were excluded from the analysis.
- Firms are defined by industries rather than occupations. Because the OER index is defined at the occupation level, it needs to be mapped to industries in the BLADE data. We focused on occupations that could be easily mapped to industries, following similar assumptions made by Bowman et al. (2024). Twelve occupations were mapped onto 15 industries (table C.11).
- Data from 2018-19 (before COVID-19) was used for the base period of the simulation. While there is more recent relevant BLADE data available up to 2020-21 and 2021-22, employment and productivity in these years is likely affected by COVID-19-related fluctuations, where there was a short-term rise and decline in labour productivity (PC 2025i, p. 3). The OER stringency index data was collected at a point in time in 2025, which means that there is a disconnect in the time periods of data used for the simulation.

Table C.11 – Occupation and industry mapping

OER index occupation	ANZSIC 4-digit level industry
Baker	1174 Bakery product manufacturing (non-factory based)
Butcher	4121 Fresh meat, fish and poultry retailing
Taxi driver	4623 Taxi and other road transport
Driving instructor	8219 Adult, community and other education not elsewhere classified
Electrician	3232 Electrical services
Hairdresser	9511 Hairdressing and beauty services
Painter	3244 Painting and decorating services
Plumber	3231 Plumbing services
Architect	6921 Architectural services
Solicitor	6931 Legal services
Real estate agent	6720 Real estate services 6711 Residential property operators 6712 Non-residential property operators
Motor vehicle repairer	9412 Automotive body, paint and interior repair 9419 Other automative repair and maintenance

Methodological limitations

In addition to the data limitations described above, there are also methodological limitations to this analysis.

While this method aims to capture elements of both within-firm and between-firm productivity effects, some impacts still remain outside its scope. For example, it does not account for productivity gains from more efficient labour allocation across industries not included in the analysis, or the benefits of harmonised OER stringency that could improve labour mobility across states and territories. As a result, the analysis provides a partial view of the full potential impact of reform.

The simulated reduction to the lowest stringency level is an illustration only and may not be the optimal level of OER stringency. There may be cases where jurisdiction-specific factors mean that OER stringency for an occupation cannot fall to the lowest level. In other cases, states and territories may be able to reduce OER stringency to below the current lowest level without adverse safety or quality outcomes.

The OECD regressions are estimated as two separate reduced-form regression equations. However, there may be a structural relationship between these – for example in how productivity change as the dependent variable in equation (1) feeds into the next period's change in employment in equation (2). The potential for these structural relationships is not reflected in these estimates.

The simulation abstracts from the dynamic effects of productivity growth over time. While the regression equations examine the relationships between OER and annual growth rates of productivity and employment, the simulation treats the effect as a change in levels within a two-period framework. This approach may underestimate the productivity gains if examined over a longer time horizon – for example, a 0.8 percentage point higher productivity growth rate each year translates to a larger percentage difference in levels over a longer period due to compounding effects. A sustained higher productivity growth rate could accelerate employment reallocations and within-firm productivity growth over time. These gains may be partially offset by reductions in the gap between firms and the frontier, which would contribute to slowing growth (equation (1)). In practice, maintaining a 0.8 percentage point higher growth rate indefinitely each year is unlikely, as structural changes in occupations could alter the reduced-form relationships in equations (1) and (2). Factors such as capital constraints, technology and supply limitations and transitional challenges dampen the scope for sustained high productivity growth without ongoing adaptation.

The methodological limitations of the OER stringency index (described previously) also apply to this analysis.

Estimating the economy-wide impacts of easing OER stringency

The PC has used the PC National CGE model (box C.1) to assess the potential long-run economy-wide effects from easing OER stringency. The model is the same as that used in the modelling of school reforms in this inquiry (section C.1) and modelling in other recent PC studies (PC 2023c, 2024a). The results are subject to the same limitations.

The scenario modelled provides an assessment of the potential gains from reducing OER stringency. Drawing on the analysis of labour productivity effects described above, the scenario estimates the potential effects of reducing OER stringency if they result in an annual 0.8% improvement in the labour productivity of workers in specific industries (modelled as labour-augmenting technical change). The modelling assumes that this productivity improvement applies to seven PC National industries: Residential building construction; Non-residential building construction; Heavy and civil engineering construction; Construction services; Non-residential property operators and real estate services; Professional, scientific and technical services; and Automotive repair and maintenance. The seven industries were selected due to their employment of occupations that may be amenable to reductions in OER stringency. This was informed by observed variations in the OER stringency index across states and territories.

A 0.8% labour productivity improvement was applied uniformly across the industries examined. Industry-specific estimates were not applied due to the broad industry groupings in the PC National model and the limited coverage of occupations in the OER index, making it unclear how much stringency could fall by across each industry.

The resulting assessment is intended to provide a 'ballpark estimate' of the potential gains available. On one hand, it may be considered an underestimate as it will not reflect potential productivity improvements that may arise in industries other than the seven targeted. On the other hand, it may be considered an

overestimate as not all workers in those industries targeted have OER (such as administrative staff) and OER stringency in some occupations may not be excessive and not require reform.

The modelling suggests that reducing OER stringency, in industries where stringency is more likely to vary across states and territories, could increase annual real GDP in the long run by up to $6.3 billion in 2024-25 dollars (0.2% of GDP) (table C.12).

Table C.12 – Long-run economy-wide impacts from easing OER stringency

	Percentage
Real gross domestic product (GDP)	0.23
Real gross national income	0.11
Real gross domestic absorption	0.07
Real household consumption	0.05
Real investment	0.10
Real government consumption	0.08
Export volumes	0.76
Import volumes	0.10
Real wages[a]	0.16
Rate of return[b]	0
Employment[b]	0
Capital stock	0.34
Exchange rate[c]	0
GDP deflator	-0.17
Consumer price index	-0.12
Export prices	-0.15
Import prices	0
Terms of trade	-0.15
Rental price of capital	-0.24
Investment price index	-0.24
Government price index	-0.07

a. Real wage deflated by the consumer price index. **b.** The rate of return to capital and aggregate employment are held fixed in the modelling environment. **c.** Model numeraire. Held fixed by assumption.

Source: PC estimates.

Increasing labour productivity means that each worker produces more output per hour worked, reducing production costs in those industries that employ these workers. This leads to lower prices and higher demand, which stimulates additional production and raises real GDP through mechanisms similar to those outlined in section C.1.

Comparisons with past PC economy-wide estimates of OER reform

Previous PC work estimated up to a 0.39% boost to GDP (up to $10.3 billion in 2023-24 values) from streamlining OERs, based on an increase in labour productivity of 0.8% in industries with the highest incidence of OERs (PC 2023a, p. 181, 2024a, p. 24). The 0.8% was derived from the within-firm productivity effect regression coefficient from Bambalaite et al. (2020) and assuming a 0.5-unit fall in the OER index across relevant industries. The industries selected in past analysis were considered to be most likely to have OER. In comparison, this inquiry's analysis focused only on industries where state and territory variation in OER is observed to be greater and the reform potential is higher. For example, the school education sector was excluded from this analysis as OER stringency was assessed to be the same across states and territories for school teachers. As a result, the overall estimated GDP impact is smaller.

Google Business ratings as an indicator of occupational service quality

A key justification for OERs is the need to protect consumers and ensure quality. It is helpful to determine whether consumers are experiencing better outcomes in jurisdictions with more stringent OERs (chapter 4). We examined Google Business ratings (in which customers can rate from one to five stars) for select occupations, to see if businesses located in jurisdictions with more stringent OERs have higher average ratings and hence higher consumer satisfaction and product or service quality. This analysis was combined with other metrics, such as frequency of workers' compensation claims from Safe Work Australia, to build a broader understanding of the impacts of OER.

Overall, we did not find strong empirical evidence that OER stringency has an impact on service quality, as measured by Google ratings and the OER stringency index across 12 occupations (chapter 4).

Are Google Business ratings a good indicator of quality?

An advantage of Google Business ratings data is that it is widely available for many occupations. Other measures of quality can be less accessible. Other metrics, such as the frequency of motor vehicle repairs sent back for rework (chapter 4), are available, but these tend to be specific to certain occupations or address only particular dimensions of quality.

Evidence suggests that Google ratings are a valuable indicator of service quality. Google is responsible for 73% of all online reviews (ReviewTrackers 2022). Further, 83% of respondents to a survey indicated that they use Google to find business reviews (BrightLocal 2025). Consumer reviews have been linked with other measures of product and service quality, such as the rate of product returns (Sahoo et al. 2018) and have also been used to identify food handling violations (Harrison et al. 2014).

However, it is important to acknowledge limitations and potential biases. For instance, most reviews tend to be rated positively (particularly five stars) (Schoenmueller et al. 2020). Some studies have found that consumer reviews may not align with expert opinion (de Langhe et al. 2016), and people are more likely to update their reviews when their rating differs from other reviews (Pocchiari et al. 2024). Fake or inauthentic reviews, while illegal, can also affect ratings (ACCC 2023a).

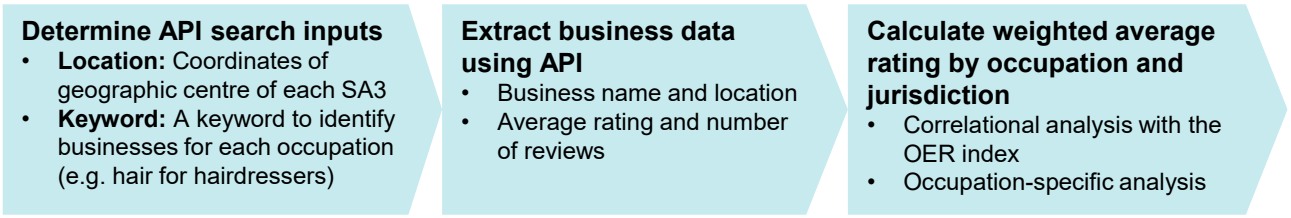
Despite these caveats, Google Business ratings remain valuable indicators of service quality especially in the absence of other measures.

Approach to extracting and summarising ratings data

Google provides an 'application programming interface' (API) for developers to access business information, including Google ratings. We used R to access the Google Places API and extract information on business ratings across Australian jurisdictions – in particular, business locations, business ratings and number of reviews.

Figure C.5 shows the approach to gathering the data and summarising business ratings.

Figure C.5 – Approach to extracting and summarising Google Business reviews data



Location and keyword choices affect search results

A key first step is to determine the API search inputs, including location and keywords used for searching businesses.

There are trade-offs when choosing the location search radius. A larger search radius may return more results, but the API only returns a maximum of 60 businesses per search.[82] Using a smaller search radius and more locations increases costs, without guaranteeing better coverage if few businesses match the keyword. Our analysis is mostly based on Statistical Area Level 3 (SA3)-sized geographic areas. In major urban areas, SA3s represent areas serviced by a transport and commercial hub (ABS 2021d). For hairdressers, smaller Statistical Area Level 2 (SA2) areas were used due to the greater prevalence of hairdressing services relative to other occupations examined – searches for a larger number of smaller-sized geographic areas allows for ratings of more hairdressing businesses to be gathered.

To manage the costs of using Google Places API, our analysis was restricted largely to areas within major cities of Australia. No SA3s in Tasmania or the Northern Territory are classified as 'major cities' under the ABS Remoteness Areas classification, so inner regional and outer regional areas respectively were included for these jurisdictions.

The analysis focused on occupations from the OER stringency index and case study occupations in chapter 4, but was restricted to occupations in which customers are more likely to leave Google reviews and where the occupation aligns closely with a type of business. Data was collated for a total of 14 occupations (table C.13).

Keywords chosen to represent each occupation may have varying degrees of accuracy – some search results may inaccurately include unrelated businesses or miss relevant ones. For example, a keyword of 'hair' may return businesses selling hair products or offering laser hair removal, rather than hairdressers. Our check of business names included in search results suggested that they generally reflect the occupations of interest. Achieving complete accuracy may not be feasible, but a large number of correctly identified businesses should help minimise the impact of any that are included in error.

[82] Sixty results were reached in 597 out of 4,242 occupation-statistical area combinations. In these instances, there may be additional businesses that we did not collect data on. This is comprised of accountant (84), bakery (60), butcher (3), driving instructor (3), hair (119), vehicle repair (158), painter (2), real estate (124), lawyer (43), taxi (1).

Table C.13 – Occupations and keywords used to extract Google Business reviews data

Occupation	Keyword	Statistical area level
Accountant	Accountant	SA3
Air conditioning and refrigeration mechanic	Air conditioning	SA3
Baker	Bakery	SA3
Butcher	Butcher	SA3
Driving instructor	Driving instructor	SA3
Electrician	Electrician	SA3
Gas fitter	Gas fitter	SA3
Hairdresser	Hair	SA2
Motor vehicle repairer	Vehicle repair	SA3
Painter	Painter	SA3
Plumber	Plumber	SA3
Real estate agent	Real estate	SA3
Solicitor	Lawyer	SA3
Taxi driver	Taxi	SA3

Summary of business data extracted

Ratings of about 38,000 businesses across Australia (based on a total of nearly 4 million reviews) were extracted across the 14 occupations and eight states and territories (table C.14). Businesses with fewer than 10 reviews were excluded from the analysis as ratings based on a small number of reviews may not reliably represent business quality. About 32,000 businesses were included in the subsequent analysis.

Table C.14 – Numbers of businesses included in analysis

Occupation	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Accountant	647	521	466	250	138	46	56	21
Air conditioning and refrigeration mechanic	254	230	221	109	62	61	23	32
Baker	973	693	691	321	222	141	108	89
Butcher	492	321	281	142	127	90	54	48
Driving instructor	369	203	136	86	45	23	27	29
Electrician	368	228	211	106	45	43	12	23
Gas fitter	164	68	88	65	42	28	18	14
Hairdresser	3085	2488	1924	1004	736	244	281	144
Motor vehicle repairer	1200	889	987	463	327	143	114	112
Painter	241	206	162	64	50	14	9	7
Plumber	260	154	176	99	52	22	18	18
Real estate agent	1136	773	854	388	209	104	105	42

Occupation	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Solicitor	434	346	386	170	106	70	41	33
Taxi driver	162	110	174	62	47	59	22	28

Excludes businesses with fewer than 10 reviews.

Source: PC estimates based on analysis of Google Places API.

Using Google ratings data

Service quality for each occupation and jurisdiction was measured by the average business rating, with businesses weighted by their number of reviews. The share of businesses with ratings over four stars was also calculated as an alternative measure of service quality.

These measures were used to explore aggregate relationships between service quality and the OER stringency index.[83] We performed the simple regression below at the jurisdiction (*j*) and occupation level (*o*) across 12 occupations for which we have a measure of OER stringency index and Google Maps ratings data. This analysis did not find a statistically significant relationship between the OER stringency index and service quality (table C.15). Correlational analysis also suggested weak correlations between the measures (of 0.132 based on weighted average rating and 0.003 based on the share of businesses with ratings over four stars).

$$Quality\ measure_{j,o} = \beta_0 + \beta_1 OER\ Index_{j,o} + \epsilon_{j,o}$$

Table C.15 – Estimated relationship between OER stringency index and Google Maps quality measures

	Quality measure	
Dependent variable	Percentage of businesses with ratings over four stars	Weighted average rating
Coefficient (β_1)	0.00041	0.04608
Homoskedastic standard error	0.01362	0.03559
Observations	96	96
R-squared	0.00000	0.01752

Data spans 12 occupations across eight jurisdictions.

Source: PC estimates.

As noted in chapter 4, this may be because jurisdictions with less stringent OERs are able to rely on other regulations to achieve the same quality outcomes, or because OERs have a negligible influence on average service quality for the occupations examined due to low underlying risks.

Chapter 4 and appendix B also include some analysis of service quality specifically for hairdressers, motor vehicle repairers, painters and air conditioning and refrigeration mechanics.

[83] Accountants were excluded from this analysis because they do not exhibit differences in OER stringency across states and territories. Air conditioning and refrigeration mechanics were excluded as the occupation was not covered by the OER stringency index.

How might other factors affect Google ratings across jurisdictions?

Any relationships between Google ratings and OER stringency cannot be interpreted as causal effects because of the many other factors that could be affecting ratings between jurisdictions.

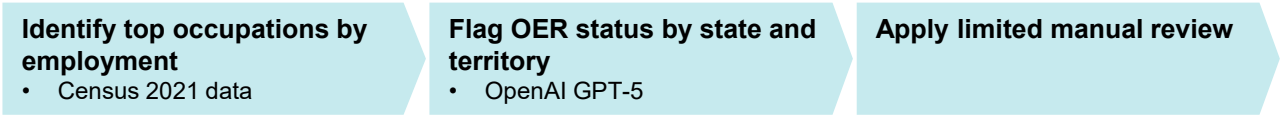
To explore the extent that people in some jurisdictions tend to rate either more or less positively regardless of OER, we examined weighted average ratings aggregated across all jurisdictions, and weighted average ratings for accountant businesses, where OER stringency does not differ across states and territories. This analysis found that average ratings in Tasmania, the Australian Capital Territory and Northern Territory tend to be slightly lower than other jurisdictions, which could indicate jurisdictional differences in rating behaviour. These smaller jurisdictions also have fewer businesses and fewer reviews included in the analysis, so the results could reflect sample size limitations.

Identifying the presence of OERs using OpenAI

Chapter 4 argues that state and territory regulators should replace excessive OERs with more efficient alternatives, and that regulators should give particular focus to occupational entry regulations that exist in their jurisdiction but not in others. To support this work, we undertook analysis to create a list of the top occupations by employment, and an indicator of whether each state and territory imposes OERs on that occupation. This is intended to help be a starting point for state and territory governments to use to identify differences in OERs and to consider whether there are more efficient alternatives that continue to protect workers and consumers.

Figure C.6 summarises the approach to identifying OER status by occupation across states and territories.

Figure C.6 – Approach to identifying the presence of OERs across states and territories



First, the top occupations by employment were identified using data from ABS Census 2021 TableBuilder, based on the ANZSCO 4-digit occupations. The definitions and names of these occupations may not precisely match definitions of licensed occupations used in state and territory regulation. For example, within the ANZSCO occupation 'construction managers', workers may only be required to be licensed builders if they are involved in on-site supervision of construction activities, but not if they are not supervising building work or if they are working alongside a licensed builder. These nuances will not be captured by the simple list.

Some ANZSCO occupations were also omitted from the list due to the wide range of occupations they could cover which makes it more difficult to attribute OER (for example, inspectors and regulatory officers). A total of 95 occupations was included in the final list.

Calls to OpenAI's GPT-5 model were used to indicate whether OERs exist for the occupation in each state and territory, with the API accessed via JavaScript through R. The system prompt provided to OpenAI was as follows.

> You are a compliance researcher investigating occupational entry restrictions in Australia. Entry restrictions include licences or mandatory qualifications that prevent people from working in the occupation. For each given occupation and state/territory, search online to determine if a licence or mandatory qualification is required to work. Respond with Yes if required, No if not, or Unsure if you cannot determine. Only respond with Yes, No, or Unsure.

We recognise that AI-generated outputs can contain inaccuracies. Some limited manual review was conducted and some corrections were made, with assistance from some state and territory regulators and other government bodies.

However, users of the list should still take caution and conduct a more comprehensive check of OER arrangements in each state and territory for any occupations of interest.

Characteristics of workers in licensed occupations

Chapter 4 noted that 'workers who require or may require licensing or registration are more likely than other workers to be male (although OERs are prevalent in common female-dominated occupations such as nursing and teaching), to be non-Indigenous, to have higher incomes and to only speak English'.

Table C.16 provides a summary of the characteristics of workers based on whether they require licensing or registration. We used the following data sources to calculate these statistics.

- ABS ANZSCO 2021 indicates occupations that require or may require licensing or registration. The ABS identifies registration or licensing as any restriction (legislative, regulatory or code of practice) that applies to anyone employed in that occupation.
- ABS Census 2021 data was used to analyse the prevalence of individual characteristics, including gender, Aboriginal and Torres Strait Islander background, income and English proficiency.

Table C.16 – Percentage of workers with licensing and/or registration

Characteristic	Percentage of licensed people[a]	Percentage of employed people
Male	57.6%	50.7%
Female	42.4%	49.3%
High income	36.0%	28.2%
Low income	13.9%	20.0%
Major city	73.3%	73.2%
Non major city	26.7%	26.8%
Aboriginal and Torres Strait Islander people[b]	1.9%	2.1%
Non-Indigenous people[b]	97.8%	97.6%
Speaks languages other than English	22.9%	23.3%
Speaks English only	77.0%	6.6%

a. Of employed people who work in occupations that may have a licence or registration, the given proportion have a certain characteristic. For example, 57.6% of all licensed workers are male. **b.** Aboriginal and/or Torres Strait Islander status is derived from the Census, recording the proportion of people who identified themselves as being of either Australian Aboriginal and/or Torres Strait Islander origin or neither. Numbers may not add up to 100% as individuals who responded with not stated and overseas visitors have been excluded.

Source: PC analysis based on ABS (2021b) Census demographic characteristics and employment data via TableBuilder.

Attachment A: Review of 'estimating the labour productivity effects of easing OER stringency'

The following referee report was prepared based on an earlier draft of the section. Feedback from the report has been considered and incorporated into the revised version.

Referee report

Jonathan Hambur, Reserve Bank of Australia

The authors intend to estimate the aggregate productivity effects of lowering OER. They do so by estimating/adopting estimates of the effects of OER on firm-level productivity growth, on the pace of reallocation of resources across firms. They then simulate of policy change, combining these effects via a standard productivity decomposition, using parameters estimated in the previous stage.

Within-firm regressions

To look at the effect on within-firm productivity growth, the authors use the results from the regression in Bambalaite et al. (2020). This measure the effect of regulation strictness on productivity growth, once accounting for growth in the global frontier, as well as how far each firm is from the global frontier.

While this equation and set of results does appear to be well suited to the intent, it may be worth setting out in a little more detail what is being estimated to help readers assess for themselves. As noted above, it captures the 'effect' of regulation on firm productivity growth, once accounting for how far they are from the frontier (and how quickly the frontier is growing). This latter point is important, as countries with high OER may tend to have lower productivity in levels, so controlling for the gap is important.

Two other small things to note here:

- One is that it is worth highlighting that a threat to identification is that the OER term may be capturing other industry-country factors the lower productivity growth that are correlated with OER. This could include other industry-specific labour market regulations other than OER.
- Second, footnote 1 could probably be removed. As the frontier is global in this regression, country-level OER should not affect it. This issue would be more pertinent if using country-level frontiers in the regression.

Across firm regressions

For the reallocation regressions, the authors use the Bambalaite et al. (2020) reallocation regressions.

Again this appears a very well suited set up. One thing to clarify here would be whether the employment growth term captures only intensive margin growth, or also extensive margin (i.e. entry and exit). This has important implications for the simulation approach later in the Appendix, as you only focus on the intensive so would want coefficients calculated based on the intensive only ideally.

Results

This section provides a good discussion of the choice to use Bambalaite et al. (2020) estimates, and potential differences to previous Australian work.

Simulations

The authors simulate the effects of a policy counterfactual, where the OER stringencies are changed.

The appendix gives a very clear account of the methodology. One small thing that could be worth noting (though is not crucial), is that the productivity indices could just be calculated directly using the actual and

counterfactual levels of employment and productivity. The Diewert-Fox decomposition is mainly there as it allows for a decomposition of the overall change into the two channels – which could be something worth highlighting, particularly given the below, as well as the fact that only the reallocation affects have been documented as significant in the Australian context.

One notable issue with this simulation is in the interpretation. The interpretation should be in terms of growth rates. So productivity growth should be 0.8 percentage points lower in these occupations for each year going forwards, rather than 0.8 per cent lower in levels terms. While the authors do note this in the limitations section, it may be worth highlighting this limitation more clearly, making it very explicit that, while the framework used implies lower productivity going forwards, they have taken it as a levels effect. This leads to significantly smaller long-run impacts. There may be good defensible reasons for this choice. For example, sizable changes to the structure of those occupations could cause this reduced form relationship to change, so we may not want to extrapolate infinitely going forwards. But being very clear about this would be valuable.

Abbreviations

ABS	Australian Bureau of Statistics
AC&R	Air conditioning and refrigeration
ACARA	Australian Curriculum, Assessment Reporting Authority
ACER	Australian Council for Education Research
AERO	Australian Education Research Organisation
AI	Artificial intelligence
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
AITSL	Australian Institute for Teaching and School Leadership
AMR	Automatic Mutual Recognition
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ANZSIC	Australian and New Zealand Standard Industry Classification
API	Application programming interface
AQF	Australian Qualifications Framework
ATEC	Australian Tertiary Education Commission
BFSA	Better Fairer Schools Agreement
BIT	Business income tax
BLADE	Business Longitudinal Analysis Data Environment
BPC	Victorian Building and Plumbing Commission
CALD	Culturally and linguistically diverse
CBP	Competency-based progression
CGE	Computable General Equilibrium
ECTS	European Credit Transfer and Accumulation System
Edtech	Educational technology
EHEA	European Higher Education Area
ESA	Education Services Australia
ESCO	European Skills, Competences, Qualifications and Occupations
EU	European Union
F–10	Foundation to year 10
FTE	Full-time equivalent
GDP	Gross Domestic Product
GenAI	Generative artificial intelligence
HELP	Higher education loan program

HILDA	Household, Income and Labour Dynamics in Australia survey
JSA	Jobs and Skills Australia
JSC	Jobs and Skills Council
MiM	Mastery in Mathematics
MOE	Ministry of Education (Singapore)
NAPLAN	National Assessment Program – Literacy and Numeracy
NCP	National Competition Policy
NCVER	National Centre for Vocational Education Research
NMBA	Nursing and Midwifery Board of Australia
NMS	National Minimum Standards
NSP	National Skills Passport
OECD	Organisation for Economic Co-operation and Development
OER	Occupational entry regulation
PAYG	Pay as you go
PsyBA	Psychology Board of Australia
PC	Productivity Commission
PLA	Prior Learning Assessment
PLIDA	Person Level Integrated Data Asset
Qr	Questionnaire response
R&D	Research and development
RBA	Reserve Bank of Australia
RCT	Randomised controlled trial
RHL	Refrigerant Handling Licence
RPL	Recognition of prior learning
RTO	Registered training organisation
SA	Statistical area
SD	Standard deviation
SME	Small and medium enterprise
ST4S	Safer Technologies For Schools
UK	United Kingdom
US	United States
VET	Vocational Education and Training

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