

National
Rail
Skills
Hub

Track Welder—analysis of NCVER data

May 2023

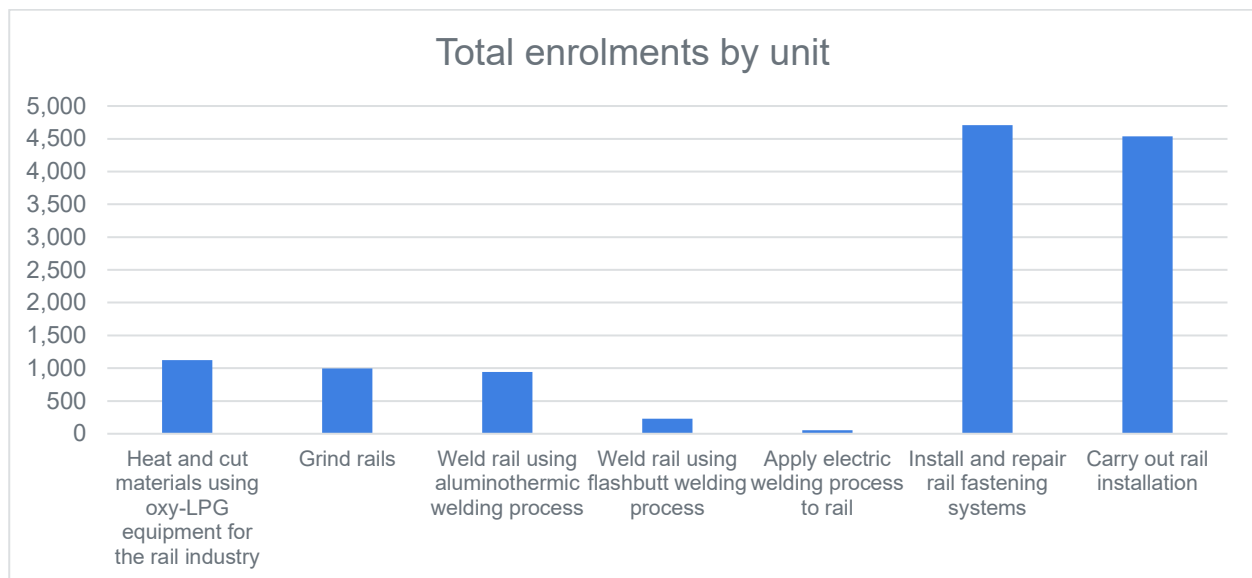
Analysis of Track Welder training data

The National Rail Skills Hub has analysed National Centre for Vocational Education Research (NCVER) data¹ relating to seven units of competency relevant to working as a railway track welder.²

Up to five of these units of competency may be taken as part of specific track welding training, depending on whether the person is specialising in aluminothermic, flashbutt and/or electric welding. The other two units—*Install and repair rail fastening systems* and *Carry out rail installation*—have been included in the analysis because they are listed as mandatory units for a role as an aluminothermic rail welder on the Rail Industry Worker National Track and Civil Matrix^{3,4}.

Among these seven units, a large majority (73%) of enrolments between 2017 and 2021 (the time period analysed) occurred in the two units related to rail installation, rather than the more welding-specific units. Among the first five more welding-specific units, most enrolments occurred in *Heat and cut materials using oxy-LPG equipment for the rail industry*, *Grind rails* and *Weld rail using aluminothermic welding process*.

There were relatively few enrolments in the flashbutt welding and electric welding units.



The two rail installation units were typically taken as part of the Certificate II in Rail Infrastructure, with some taken as part of non-nationally recognised qualifications. Among the five more welding-

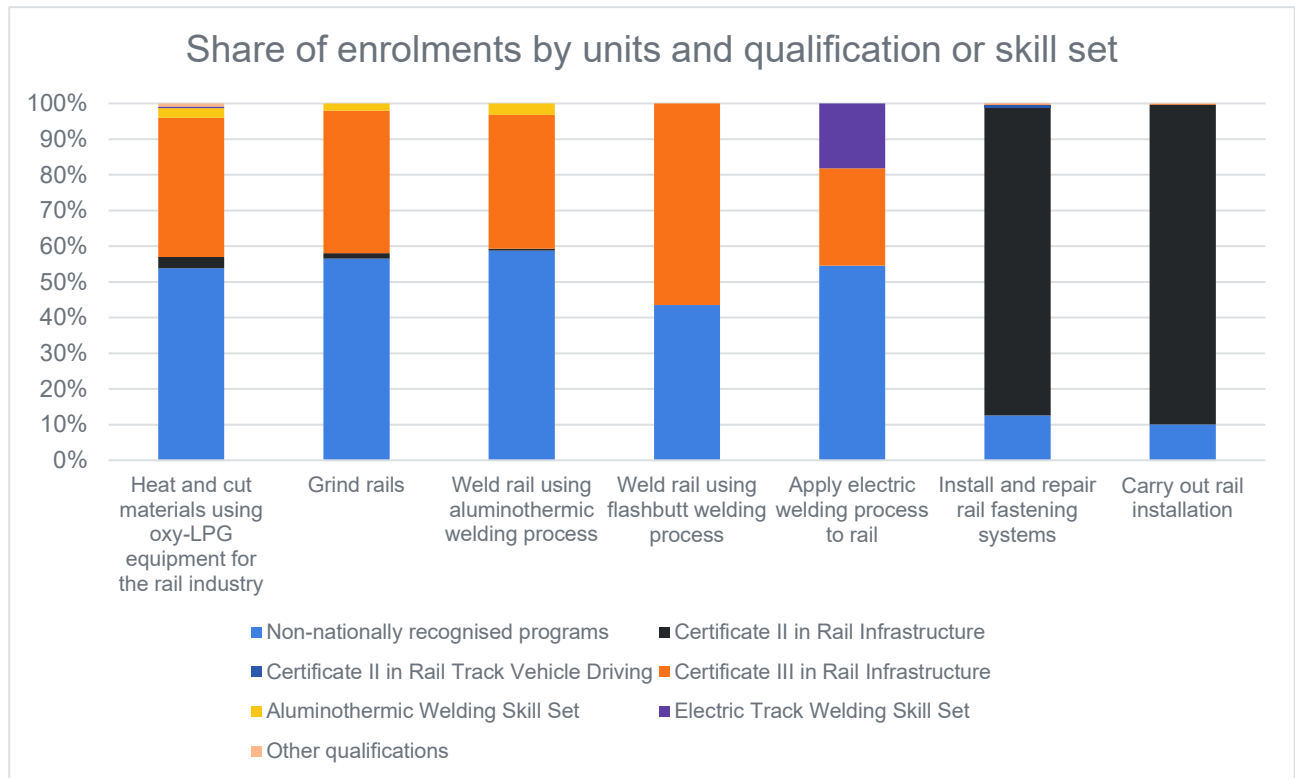
¹ NCVER, *Total VET students and courses 2021: subject enrolments DataBuilder*, 2022, accessed at: <https://www.ncver.edu.au/research-and-statistics/data/databuilder>.

² *Heat and cut materials using oxy-LPG equipment for the rail industry; Grind rails; Weld rail using aluminothermic welding process; Weld rail using flashbutt welding process; Apply electric welding process to rail; Install and repair rail fastening systems; Carry out rail installation.*

³ Rail Industry Worker, *National Track and Civil Matrix*, 2021, accessed at: <https://www.riw.net.au/wp-content/themes/MTAThemeV1/RIWMatrixes/National/National%20Track%20and%20Civil%20Matrix.pdf>.

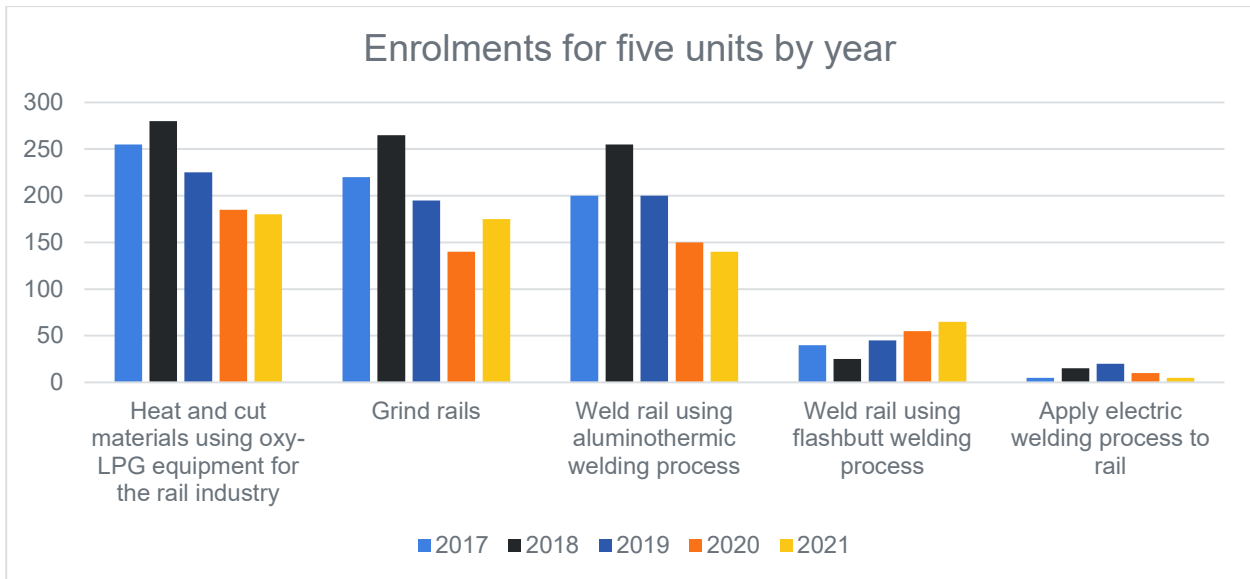
⁴ The unit *Grind rails* is not listed as a mandatory unit for welding roles on the Rail Industry Worker National Track and Civil Matrix, nor is it included in the welding skill sets listed on training.gov.au. However, it has been included in this analysis because several Registered Training Organisations include it as part of their track welding training.

specific units, most enrolments occurred either through non-nationally recognised programs or as part of a Certificate III in Rail Infrastructure (with limited usage of welding skill sets or other qualifications).



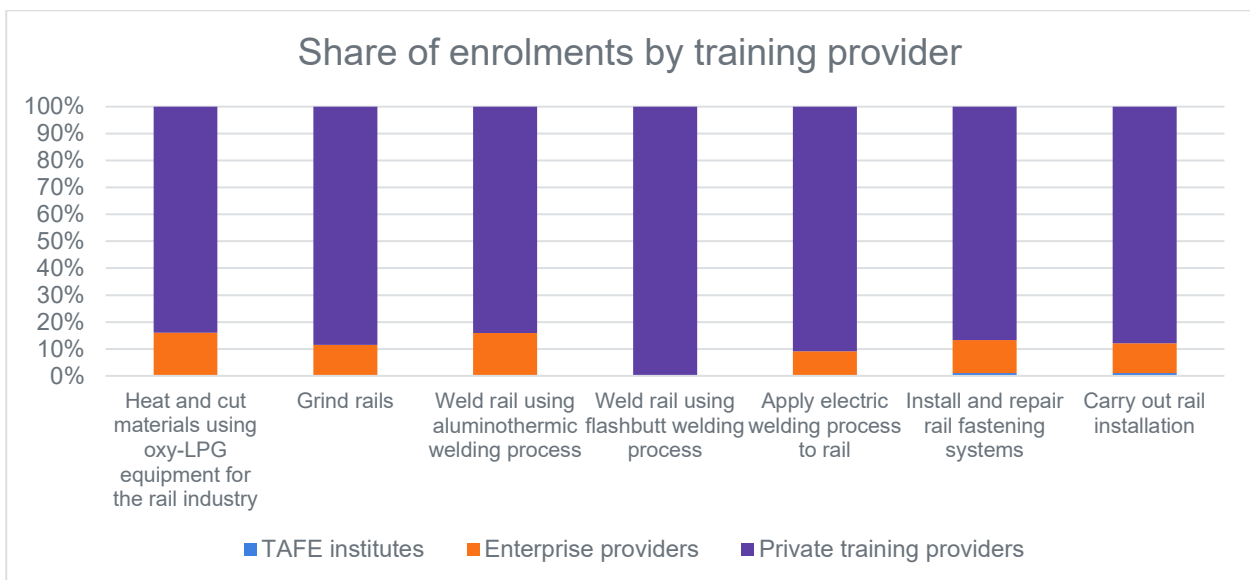
The annual trend for the five welding-specific units shows that there were typically 200 or more enrolments per year for the three units involved in training as an aluminothermic welder from 2017 to 2019, but with a reduction relative to this trend in 2020 and 2021.

By contrast, flashbutt welding enrolments were higher than their prior trend in 2020 and 2021 (albeit from relatively low levels in the early years).



Private training providers delivered the majority of this training: over 80% of enrolments for each unit of competency, and all flashbutt welding training being delivered by private RTOs.

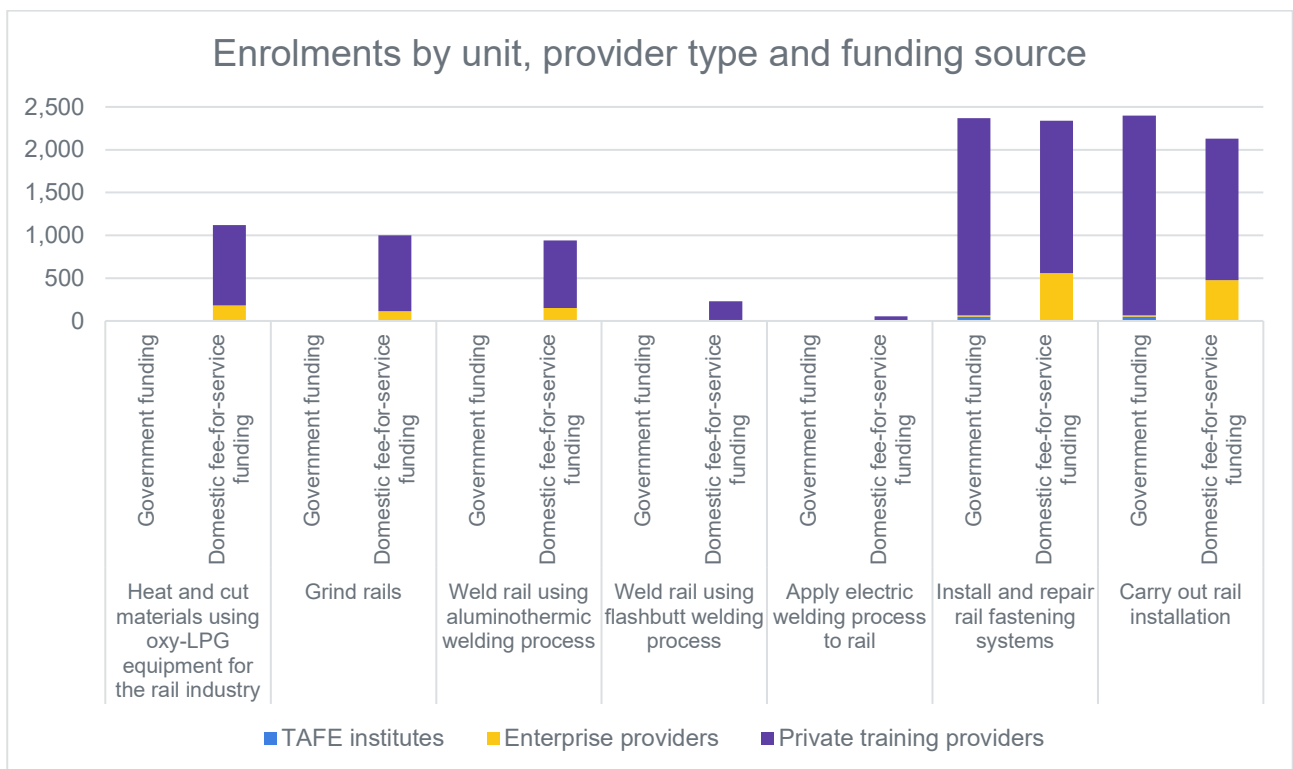
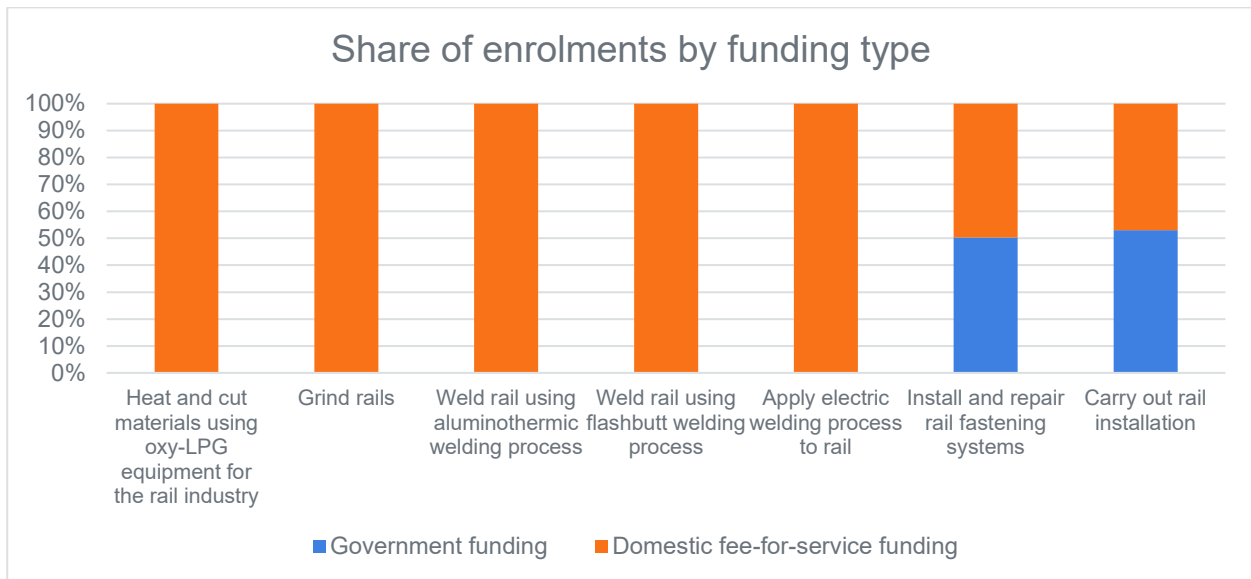
Enterprise RTOs were the other significant training providers, but the highest share of enrolments delivered by these training providers for any unit was just 16%. There was almost no use of TAFEs: only 50 enrolments occurred in each of the two units relating to rail installation (rather than welding units specifically), all of which were delivered in Queensland.



Who's paying for training?

All enrolments in the five units more specifically related to welding were funded through domestic fee-for-service funding. However, for the two units relating to track installation, around half of enrolments were government-funded.

Most of the government-funded enrolments were delivered by private training providers. Over 80% of government-funded enrolments were in Queensland, with Victoria and Western Australia the two other most significant government funders.

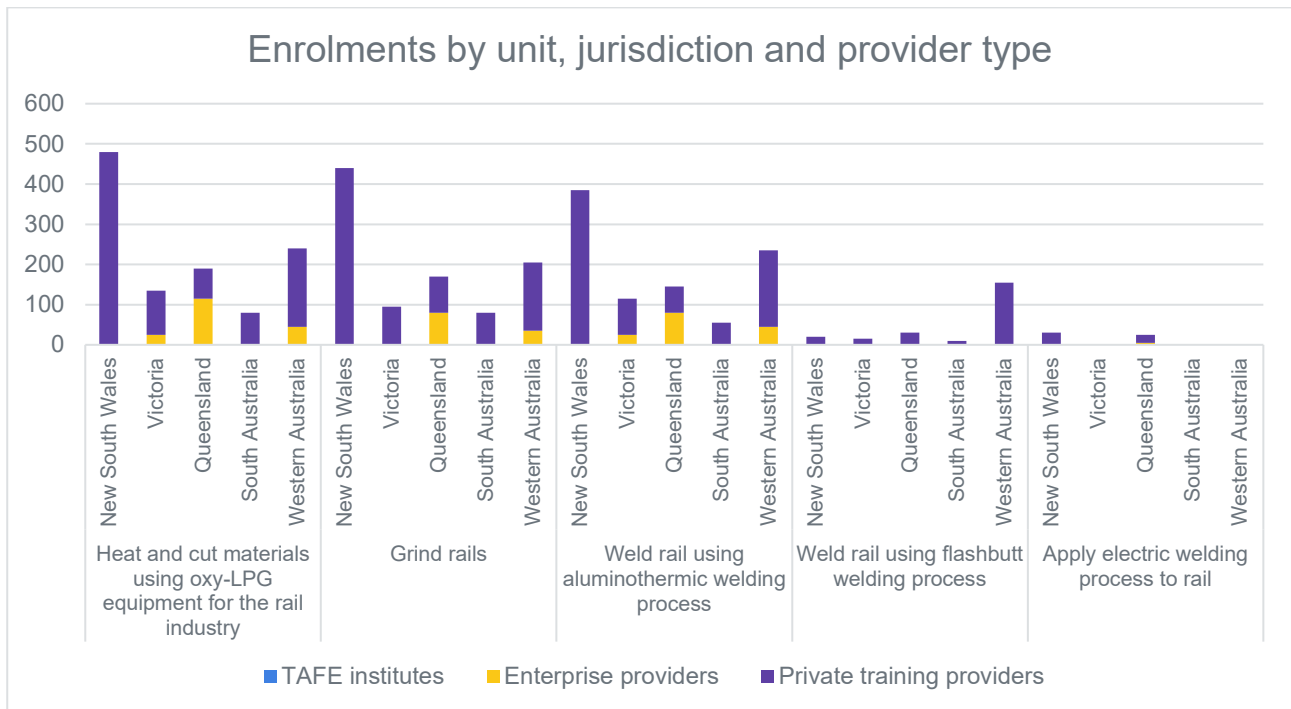


Enrolments by jurisdiction

NSW had the most enrolments in each of the three largest welding-specific units, followed by Western Australia, Queensland and Victoria (with relatively few enrolments in South Australia and almost none anywhere else).

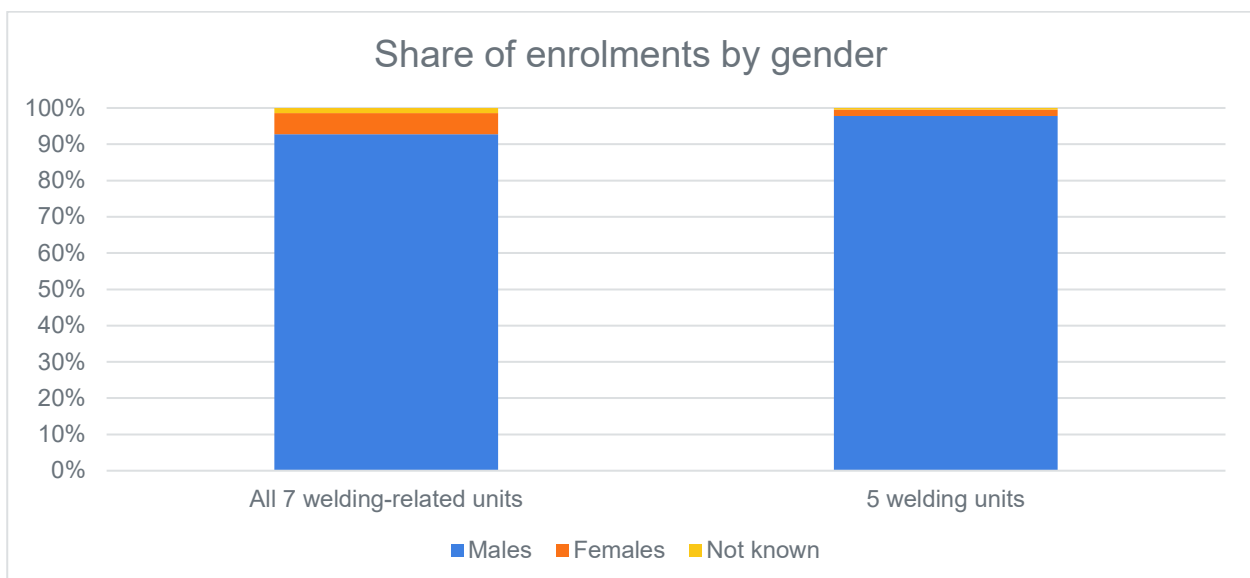
NSW exclusively used private training providers, whereas the other larger jurisdictions typically used a mix of Enterprise and private training providers, with the mix varying by unit and jurisdiction.

Western Australia was by far the largest user of the flashbutt welding unit, with its cumulative 155 enrolments over the five years analysed comprising around two-thirds of the national total for this unit.



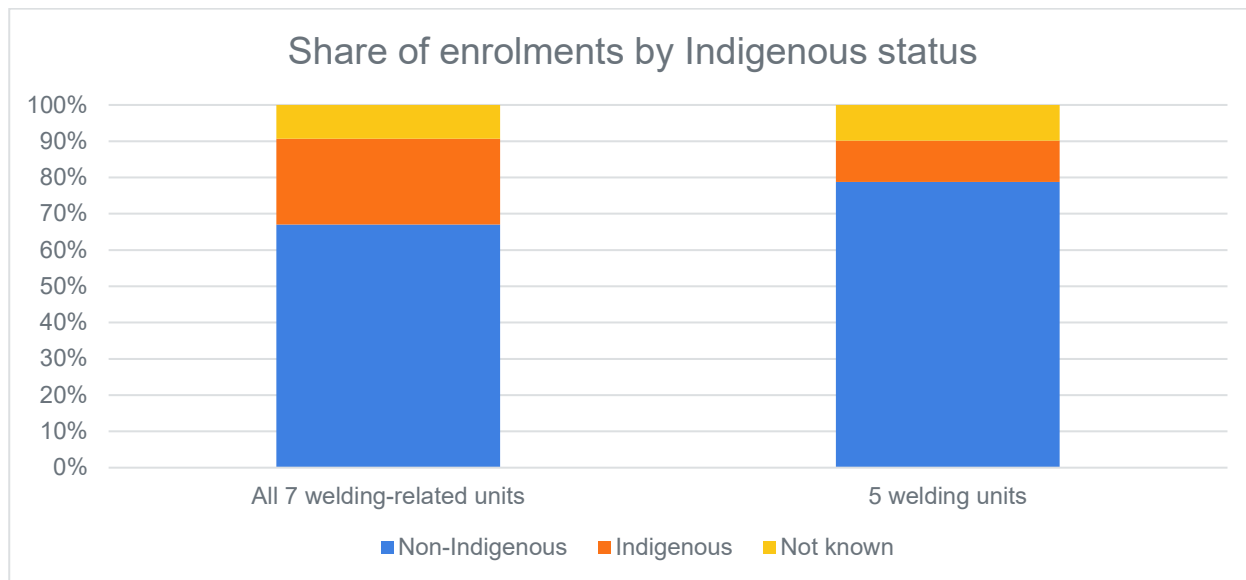
Who's training for a rail career?

Almost all enrolments in the five welding-specific units were by males (98%). Although the female share of enrolments was slightly higher for the two track installation units than for the welding units. For the seven units collectively the male share of enrolments was still very high at 93%.

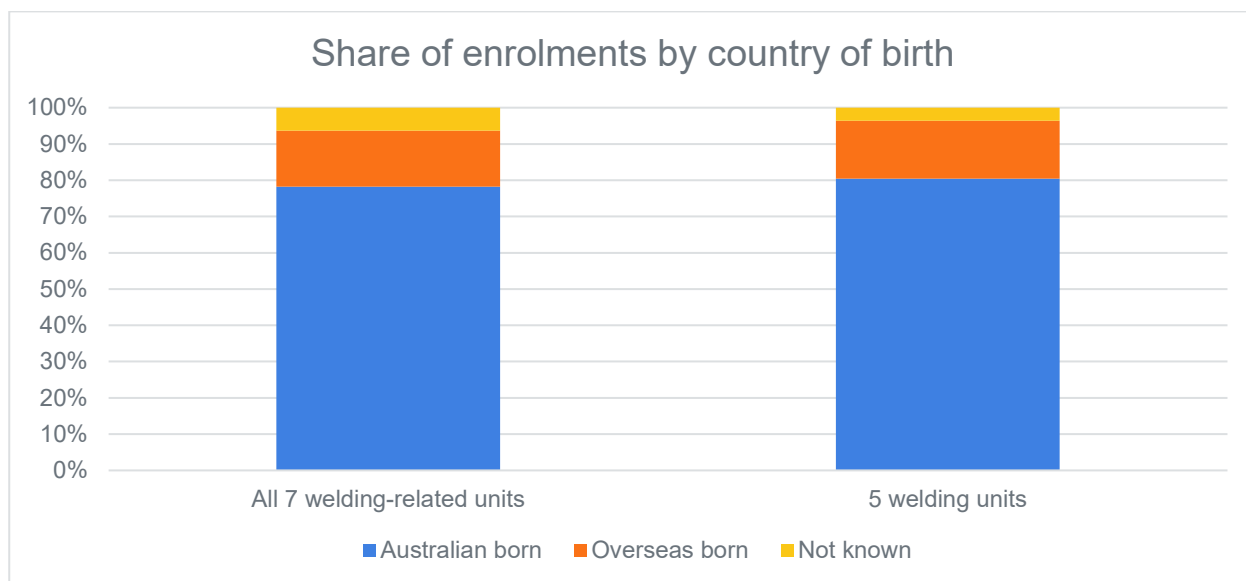


The share of enrolments by Indigenous people was 11% for the five welding-specific units and almost one-quarter of enrolments across the seven units (with around 10% of enrolments where this information was not known). These are much higher than the proportion of Aboriginal and

Torres Strait Islander people in the total population (3.2%).⁵ Queensland had the most Indigenous enrolments across the seven units, but most of these were in the two rail installation units.



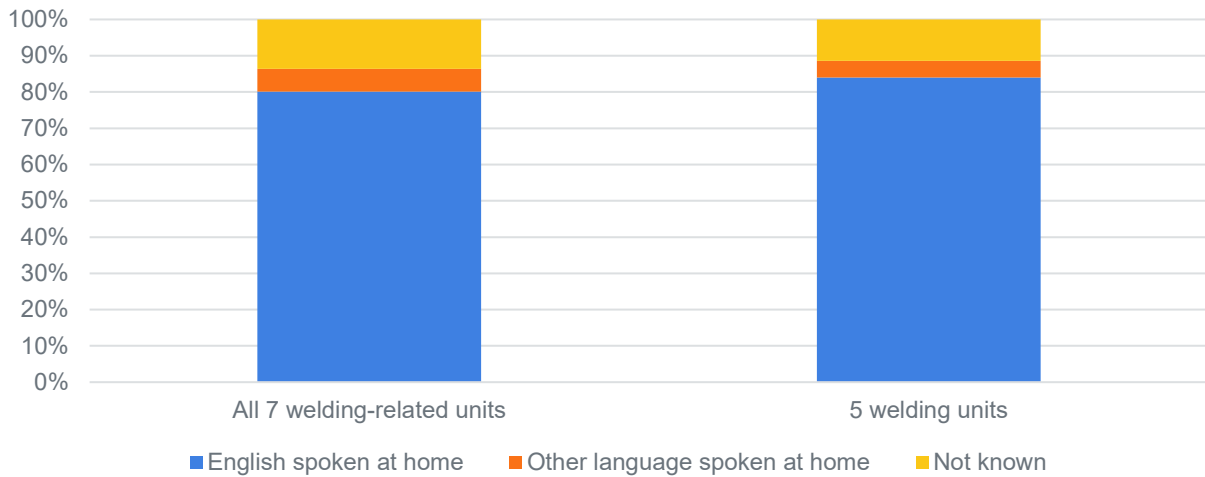
The share of Australian-born students was around 80%, with around 15% born overseas and the remainder not known. These shares were relatively similar for the welding and rail installation units.



Around 80% of people enrolling in these units spoke English at home, with 5% speaking a language other than English and the remainder not known.

⁵ Australian Bureau of Statistics, *Census of Population and Housing: Aboriginal and Torres Strait Islander people data summary*, 2021

Share of enrolments by language spoken at home



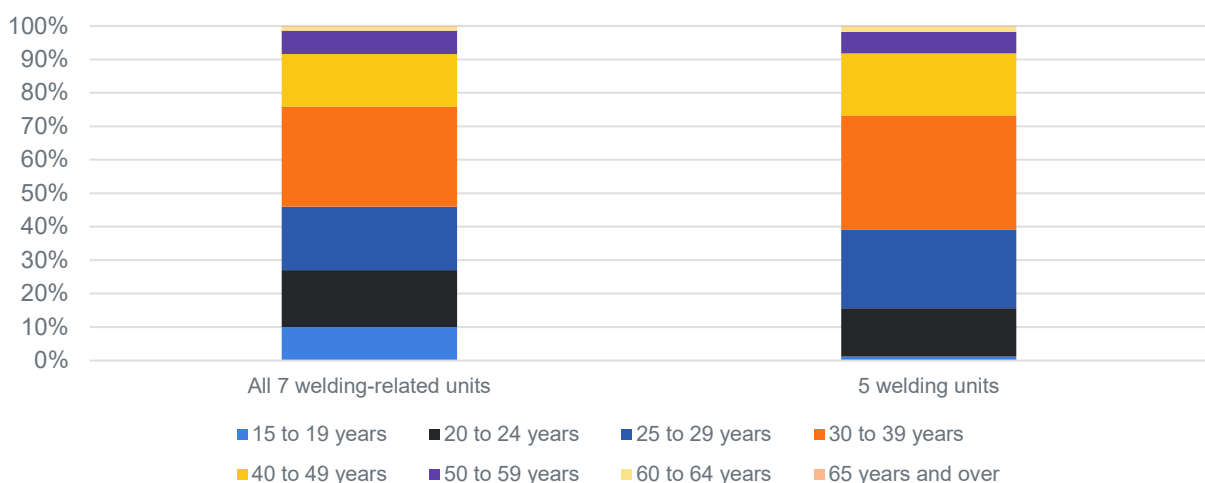
There were no apprentices or trainees enrolling in the five welding-specific units, and very low numbers enrolled in the two rail installation units.

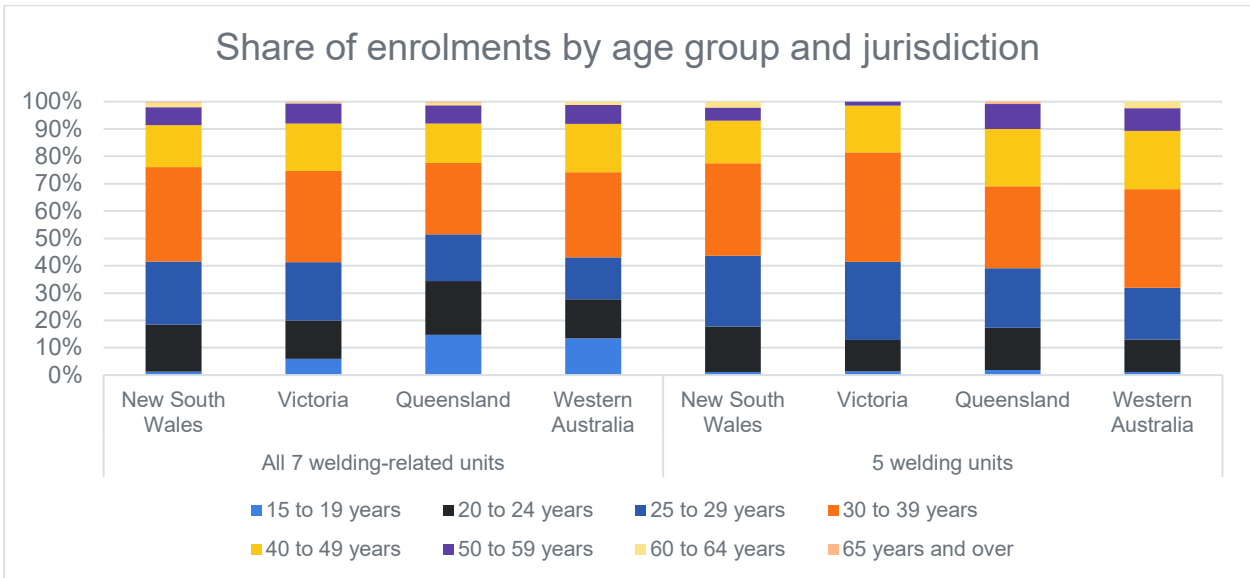
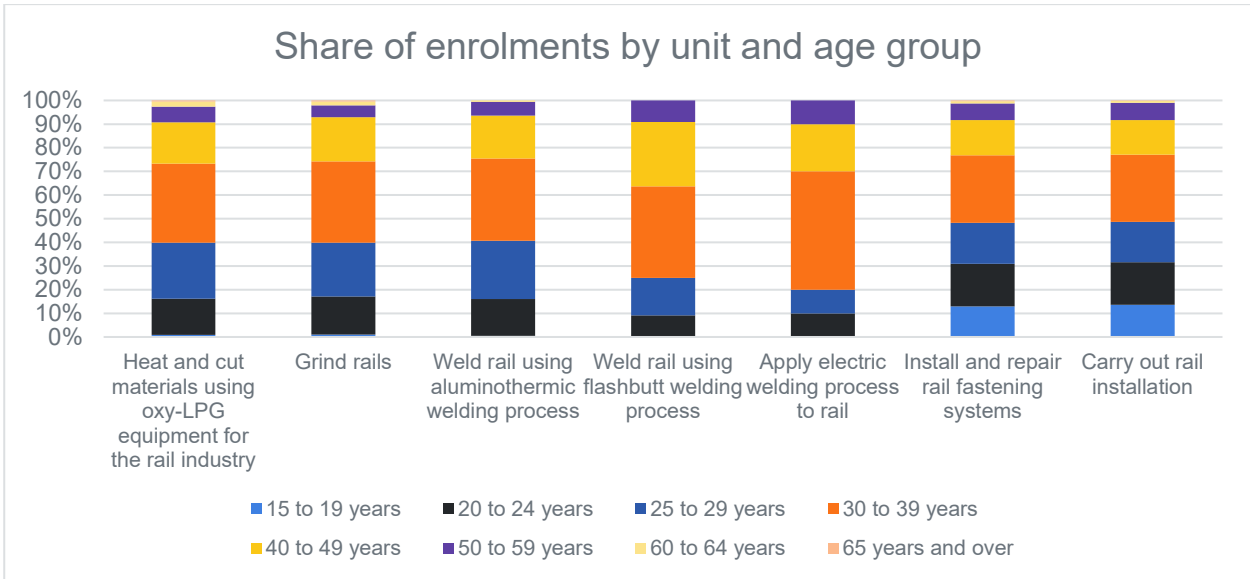
Comparing the enrolments by age group, around two-thirds of enrolments were aged between 20 and 39 for the seven units, while over 70% of the five welding-specific units were in this age range.

When analysing the results by unit, it is clear that the rail installation units tended to have younger enrolments, with over 10% aged under 20 and almost 50% aged under 30.

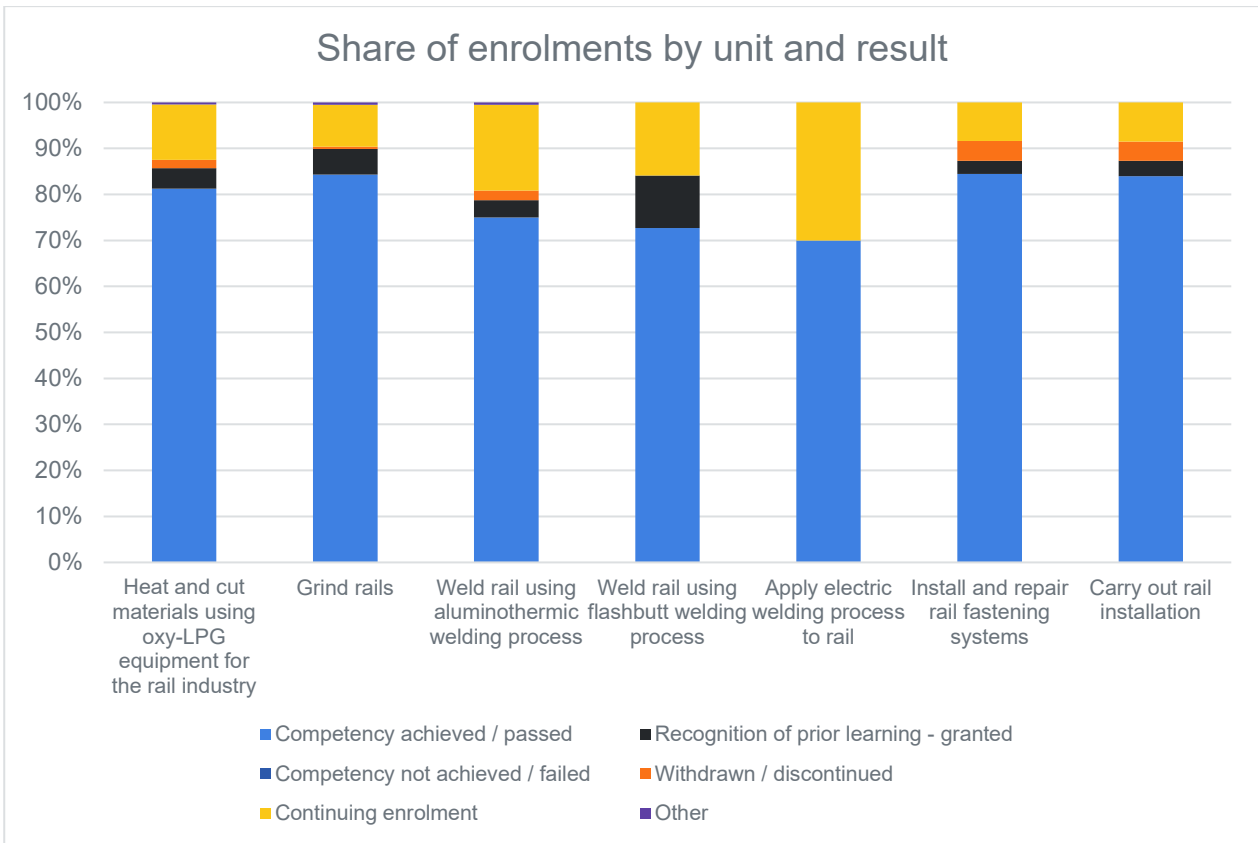
Unsurprisingly, the age profile of enrolments in the first three units—which are often delivered together by RTOs—was very similar. Queensland tended to have relatively younger people enrolling than other jurisdictions, particularly for the two rail installation units. For the five welding-specific units, Victoria had almost no enrolments over the age of 50, whereas Queensland and Western Australia both had 10% of enrolments in this age range.

Share of enrolments by age group

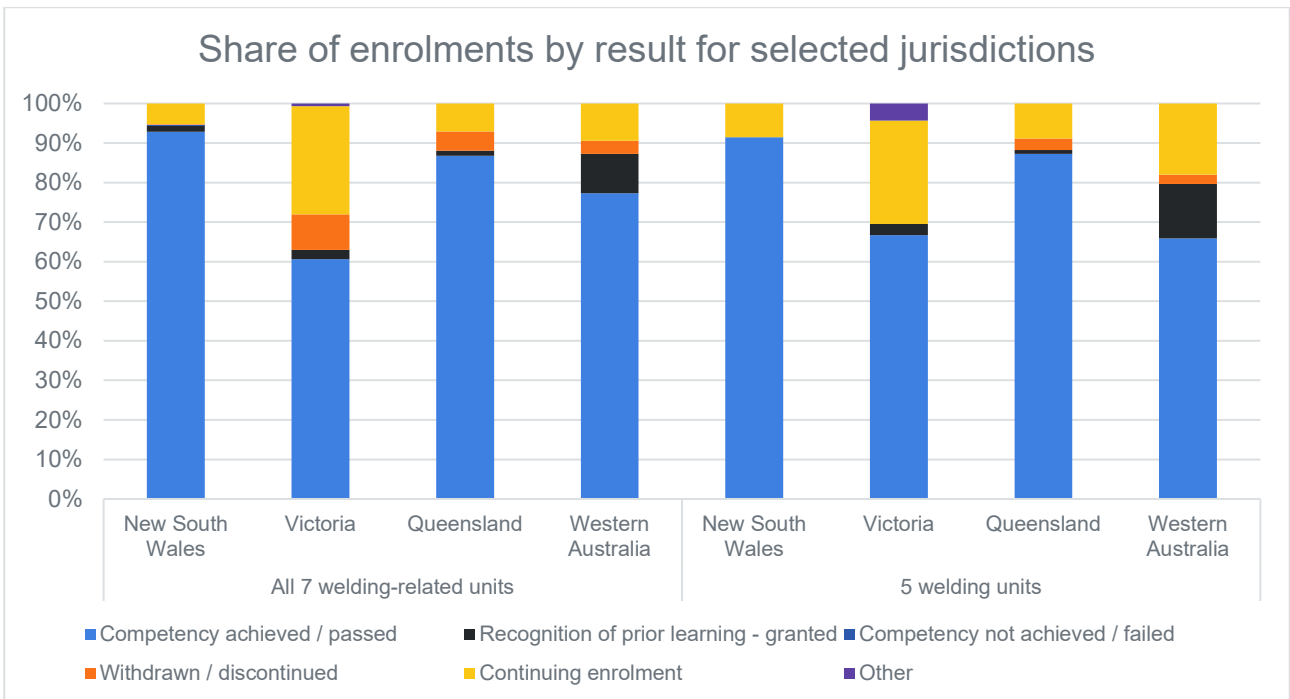




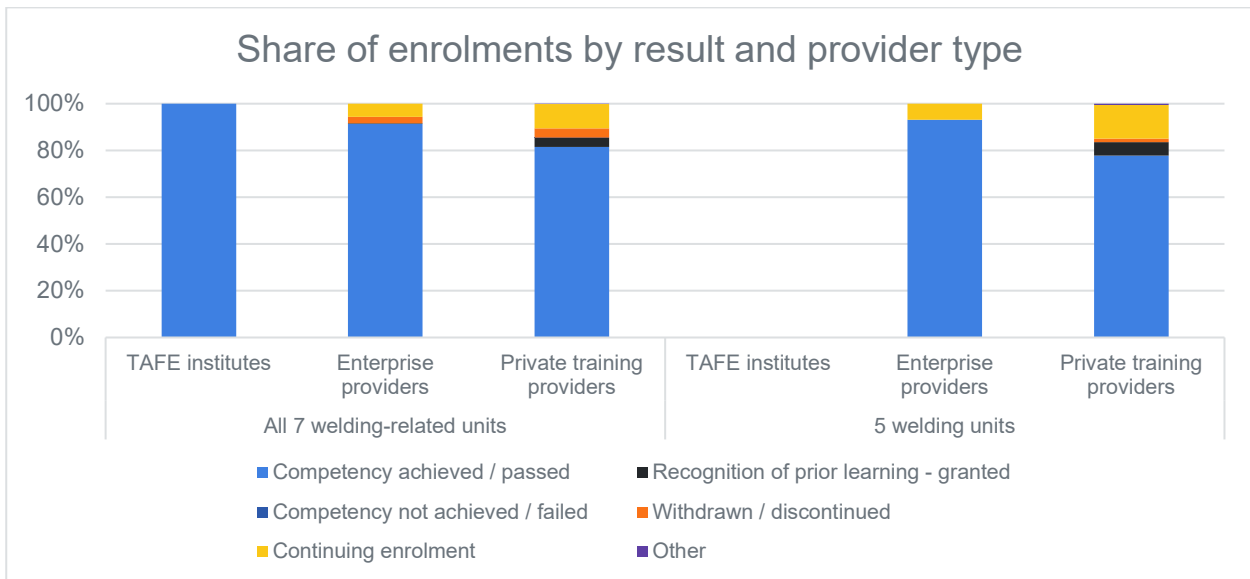
Examining the results of the enrolments for the seven analysed units in aggregate, around 83% of enrolments achieved passes, with 4% having recognition of prior learning granted, 10% having continuing enrolment and 4% withdrawing. The combined share of passes and recognition of prior learning was above 80% of total enrolments for most units, with just the aluminothermic and electric welding units being below this mark (the former only very slightly and the latter having very few enrolments overall). The remaining share mostly consisted of continuing enrolments.

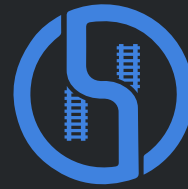


Comparing results by location of delivery for the major states, Victoria had a much lower share of passes than other jurisdictions. This was primarily due to a high share of continuing enrolments, but also a relatively high rate of withdrawals for the two rail installation units. Western Australia had a much higher share of recognition of prior learning than the other jurisdictions, for both the five welding-specific units and the seven units overall.



Comparing the two larger training provider types for these units, Enterprise providers tended to have the higher pass rates. This was primarily due to having a lower share of continuing enrolments. Private training providers were more likely to grant recognition of prior learning.





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