

Laboratory operations in Australia

Laboratory operations is not strictly speaking an industry sector, rather laboratory operations cover a diverse group of technical and scientific occupations located across the whole of industry. In general terms, non-professional employees use scientific techniques and equipment to carry out tests, and to operate and manage scientific processes.

There is increasing regulation of standards relating to use of materials and equipment. Testing and monitoring of the environment and health hazards in the food processing and rural sectors are typical areas where this is observed. Similarly, testing of products for safety and quality is particularly important in the manufacturing industry.

A second area of demand emerges from the need for greater attention to quality within manufacturing and construction. Testing of materials and products is now an inherent part of design and product quality systems.

The closest classification in the Australian and New Zealand Standard Industrial Classification (ANZSIC) is Subdivision 69 Scientific Testing and Analysis Services (Excluding Computer System Design and Related Services) in Division M – Professional, Scientific and Technical Services.

Subdivision 69 includes:

- Class 6910 Scientific research services
- Class 6923 Engineering design and engineering consulting services
- Class 6924 Other specialised design services
- Class 6925 Scientific testing and analysis services¹

The data quoted is for Class 6925 Scientific testing and analysis services unless otherwise stated.

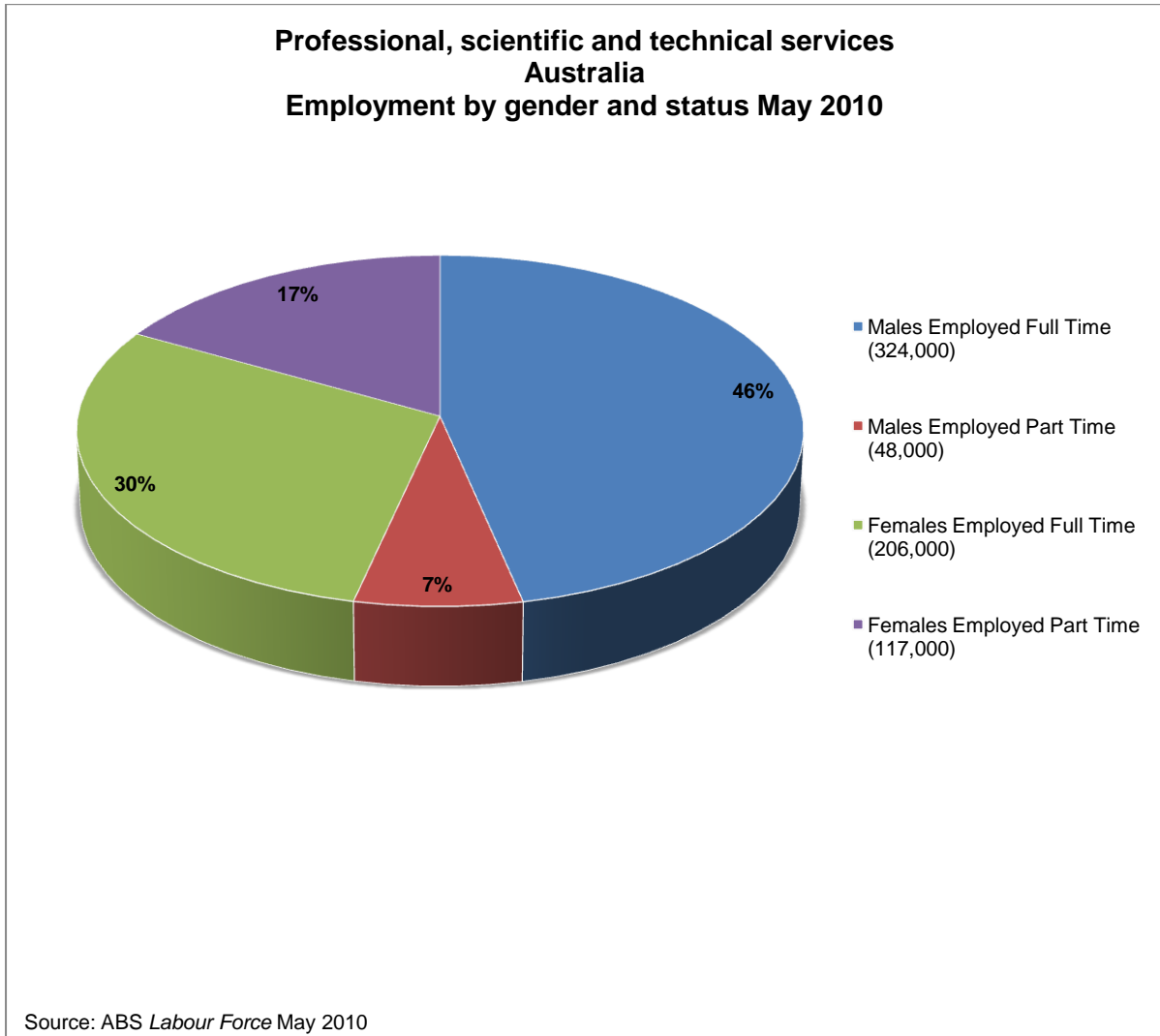
It is important to note that many workers within this classification are employed within organisations which may be classified within other industrial classifications. It is therefore difficult to obtain accurate data relating to the size of the workforce.

Note: MSA uses as its main data sources, the latest statistics available from the Australian Bureau of Statistics (ABS) and the National Centre for Vocational Education Research (NCVER). This may result in variations between MSA's data and the data collected by other sources.

¹ Australian Bureau of Statistics 2006 *Australian and New Zealand Standard Industrial Classification* (ANZSIC)

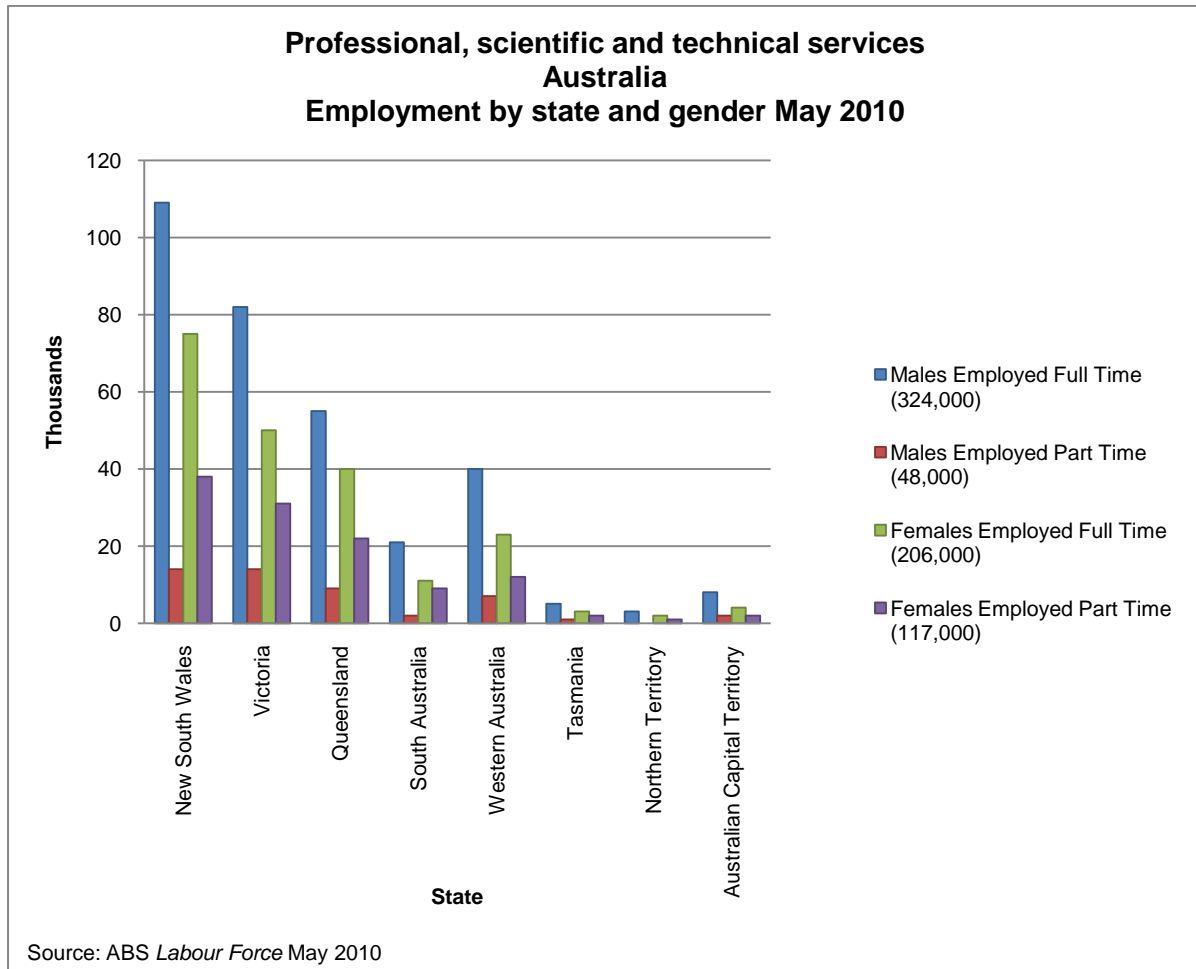
Employment

Employment data is released by the ABS quarterly (February, May, August and November). May 2010 figures showed that the Professional, scientific and technical services sector employed approximately 695,000 people. The majority were males who were employed full-time. Women made up 46% of the workforce with 36% of women employed part-time².



² Australian Bureau of Statistics *Labour Force May 2010* ST e06 accessed September 2011

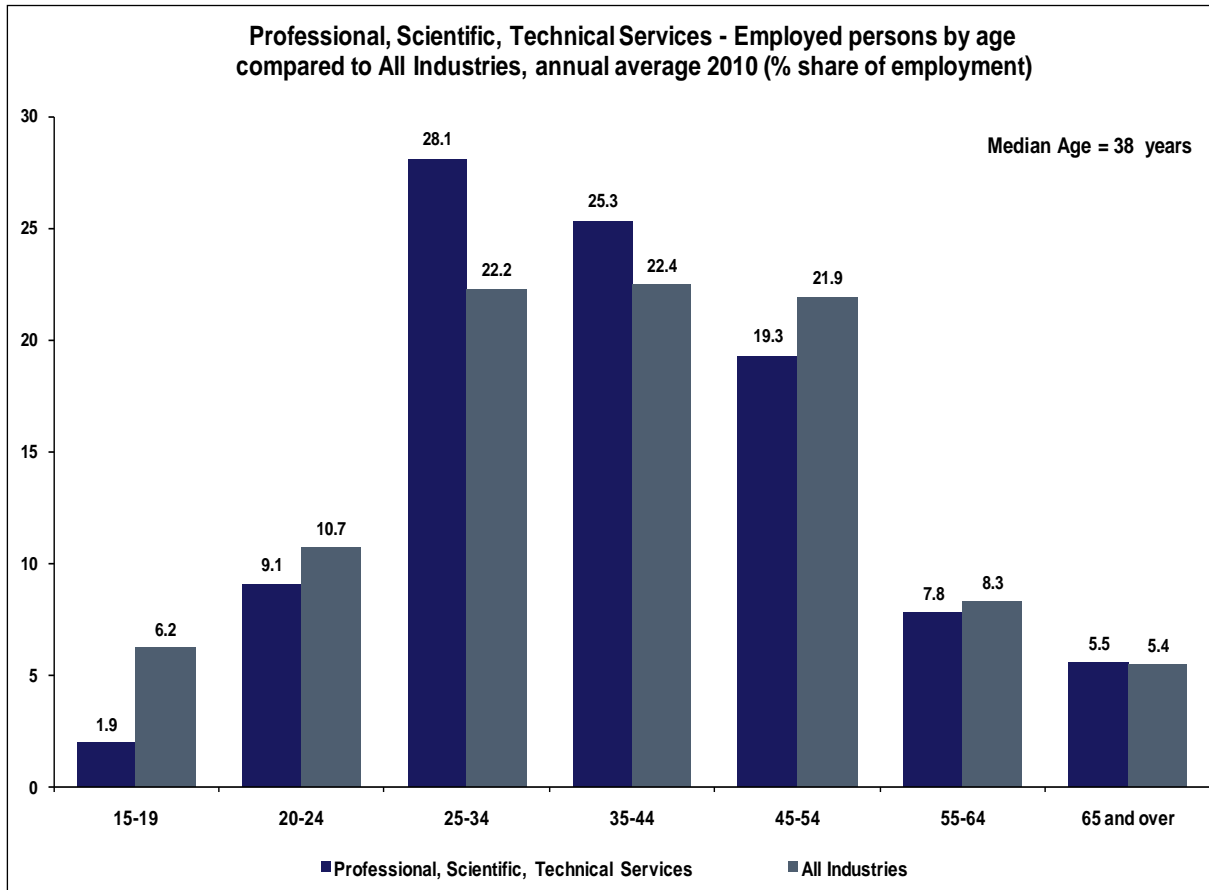
The majority of the professional, scientific and technical workforce is employed in New South Wales (236,000 people)³. The Northern Territory had the highest proportion of females in its workforce with 50% of workers being female.



³ Australian Bureau of Statistics *Labour Force May 2010* ST e06 accessed July 2011

Unlike the manufacturing industry, the professional, scientific and technical services industry has a higher percentage of workers under 35 years of age (39.1%). Within manufacturing the majority of workers are over the age of 35 (62.3% for the manufacturing industry in general)⁴. The median age for the workforce is 38.

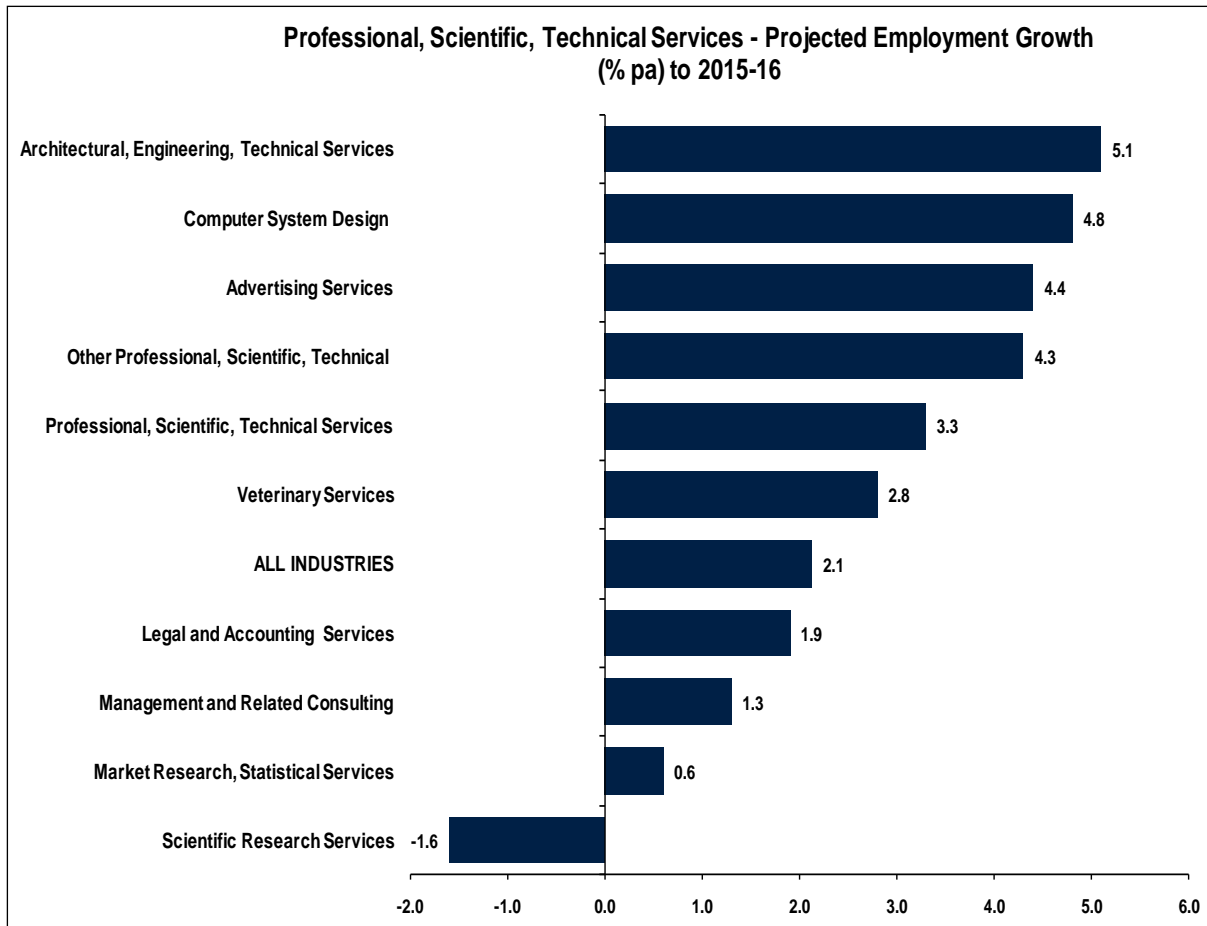
A concerning statistic is the very low number of 15 – 19 year olds entering the industry in 2010.



Source: <http://www.skillsinfo.gov.au/skills/IndustryReportsCharts/WorkforceAgeing/>

⁴ Department of Education, Employment and Workplace Relations *Workforce Ageing* <http://www.skillsinfo.gov.au/skills/IndustryReportsCharts/WorkforceAgeing/> accessed September 2011

The Department of Education, Employment and Workplace Relations (DEEWR) projects that employment within the Professional, scientific and technical services sector will increase by 3.3% to 2015-16. Architectural, engineering and technical services are predicted to have the strongest growth.⁵



Source: <http://www.skillsinfo.gov.au/skills/IndustryReportsCharts/EmploymentGrowth/>

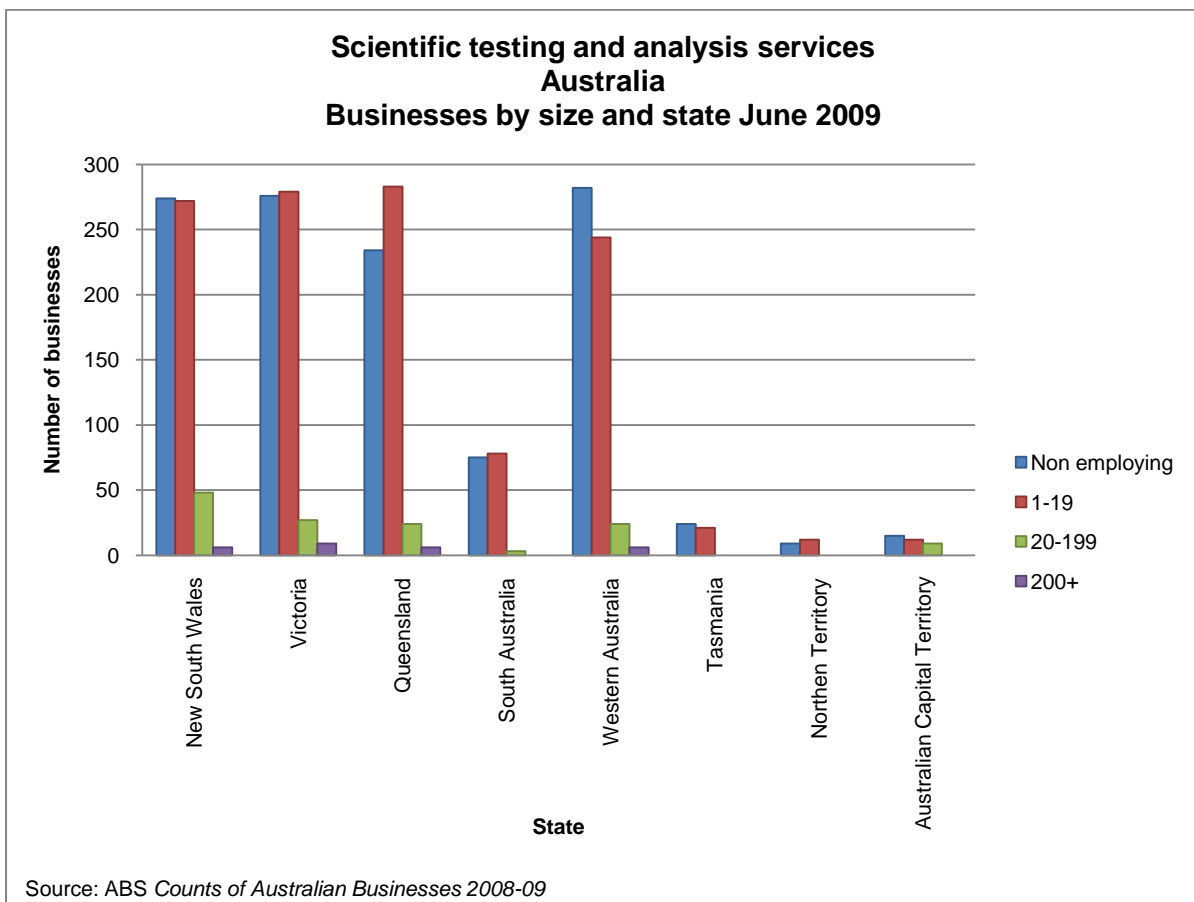
⁵ Department of Education, Employment and Workplace Relations *Future Growth by Industry Sector - % per annum* <http://www.skillsinfo.gov.au/skills/IndustryReportsCharts/EmploymentGrowth/> accessed September 2011

Laboratory operations – business numbers

The ABS publishes ‘*Counts of Australian Businesses, including Entries and Exits*’ annually. Data is sourced from the Australian Bureau of Statistics Business Register (ABSBR). The most recent publication for the Financial Year 2008-09 has been used for this information sheet. Businesses are classified by the number of employees.

At the end of June 2009 there were 2,552 businesses operating in Australia within the Scientific testing and analysis services sector⁶. The majority of businesses were either non-employers (that is, they hadn’t submitted an Income Tax Withholding (ITW) statement to the Australian Tax Office (ATO) for five consecutive years) or small businesses employing between 1 – 19 people⁷.

The majority of businesses were located in New South Wales (600) with a further 591 located in Victoria. The large number of businesses within this sector in both Western Australia (556) and Queensland (547) may be a reflection of the requirements of the resources sector in those states.



⁶ Australian Bureau of Statistics *Counts of Australian Businesses 2008-09*

⁷ Australian Bureau of Statistics *Counts of Australian Businesses 2008-09*

Skills and training

The *Education and Work* report is published by the ABS annually. The most recent edition of *Education and Work May 2010* was published in November 2010. Data published in the *Education and Work* report is classified according to the Australian Standard Classification of Education 2001 (ASCED).

In ASCED the most relevant classifications include:

- 0105 Chemical sciences
- 0199 Other natural and physical sciences⁸

Education and Work May 2010 only contains data relating to the broad field 01 Natural and Physical Sciences⁹ and is too broad to be considered within this document.

The Laboratory operations sector is covered by the MSL09 Laboratory Operations Training Package. There are six qualifications in the Training Package ranging from Certificate II to Vocational Graduate Certificate level¹⁰. This Training Package was endorsed in January 2010. The Vocational Graduate Certificate of Instrumental Analysis is a new qualification. The current version, Version 1.2 was endorsed in January 2011.

Note: The training data within this information sheet contains only information relating to both the previous Training Package – PML04 as well as MSL09.

⁸ Australian Bureau of Statistics *Australian Standard Classification of Education 2001*

⁹ Australian Bureau of Statistics *Education and Work May 2010*

¹⁰ Training.gov.au <http://training.gov.au>

The National Centre for Vocational Education Research (NCVER) collects data on commencements and completions in vocational education qualifications via two instruments – the National Apprentice and trainee collection and the National VET provider collection.

The National Apprentice and trainee collection includes data for all formally notified apprentices and trainees attending either publicly funded or private RTOs.

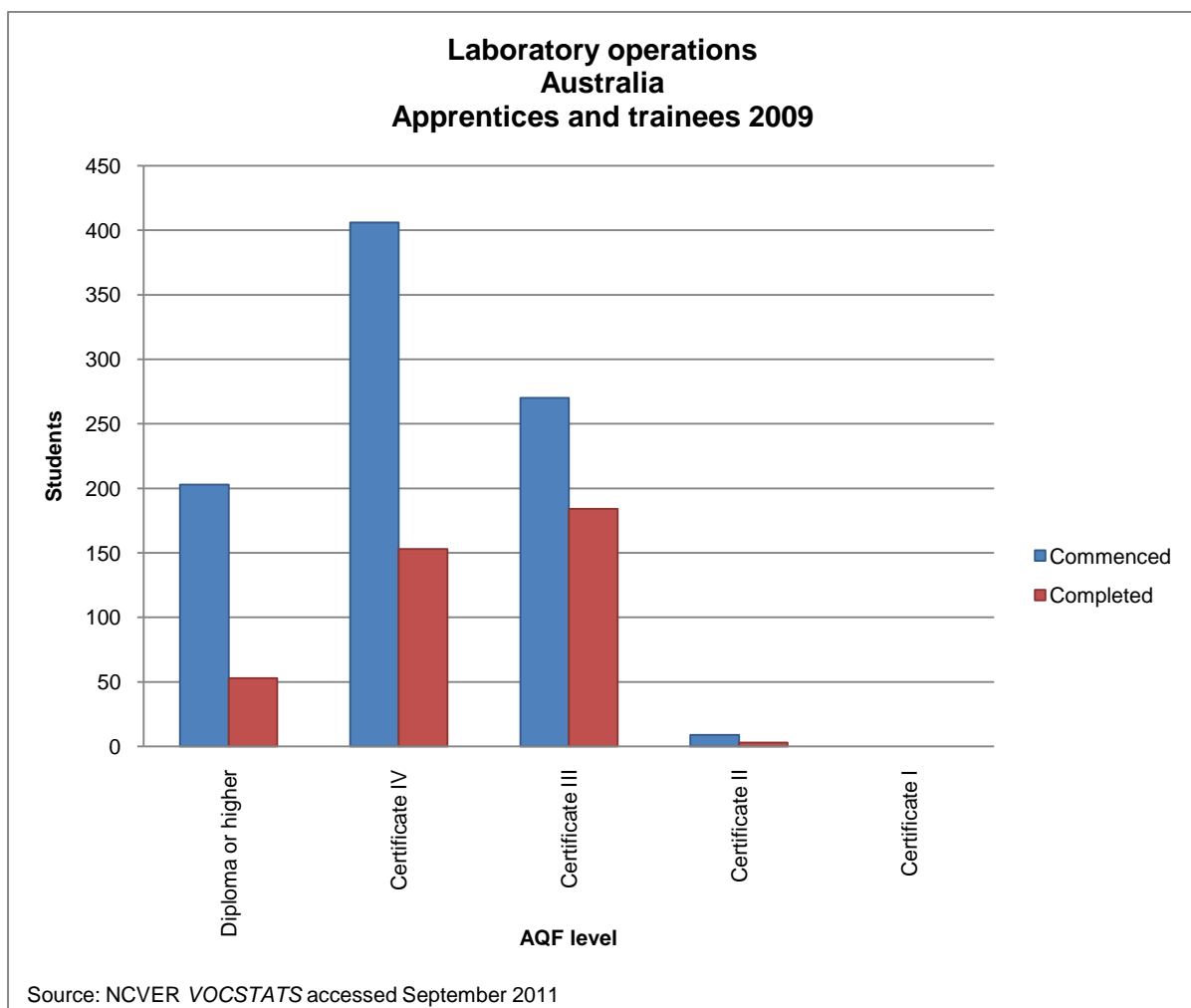
The National VET provider collection only contains data from publicly funded institutions such as Technical and Further Education (TAFE) colleges. Data is collected for the apprentice and trainee collection quarterly and for the VET provider collection annually.

This data can also be accessed via NCVER's database – VOCSTATS.

In 2009, 888 people commenced a formal contract of training in a qualification from the MSL Training Package while 393 people completed a formal contract of training. Over 40% of commencements and completions were at Certificate III level.

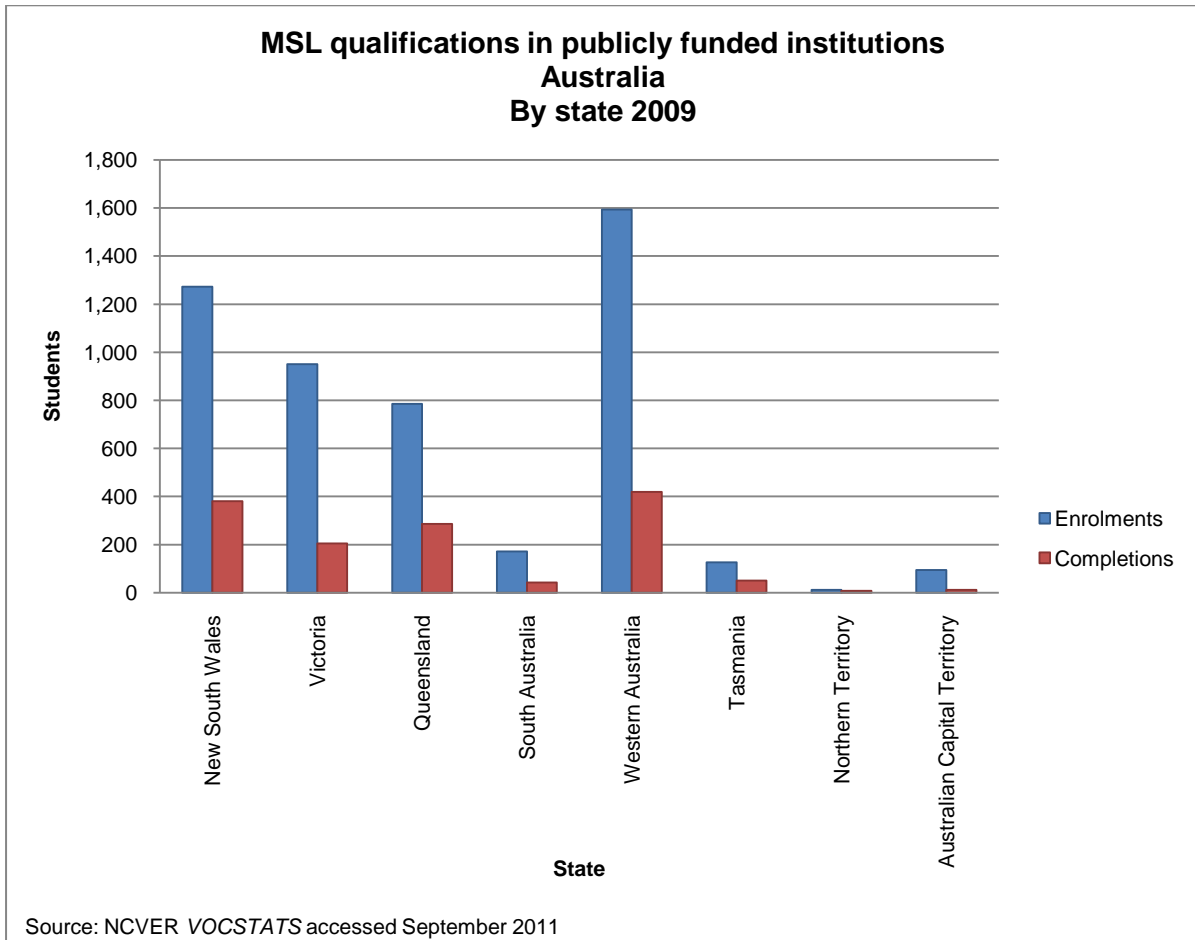
The qualification that had the most commencements and completions was Certificate IV in Laboratory Techniques. In 2009, 406 people commenced a traineeship in this qualification. These accounted for over 45% of contract commencements.

In the same year, 184 people completed a traineeship in Certificate III in Laboratory Skills which was approximately 45% of all contract completions¹¹.



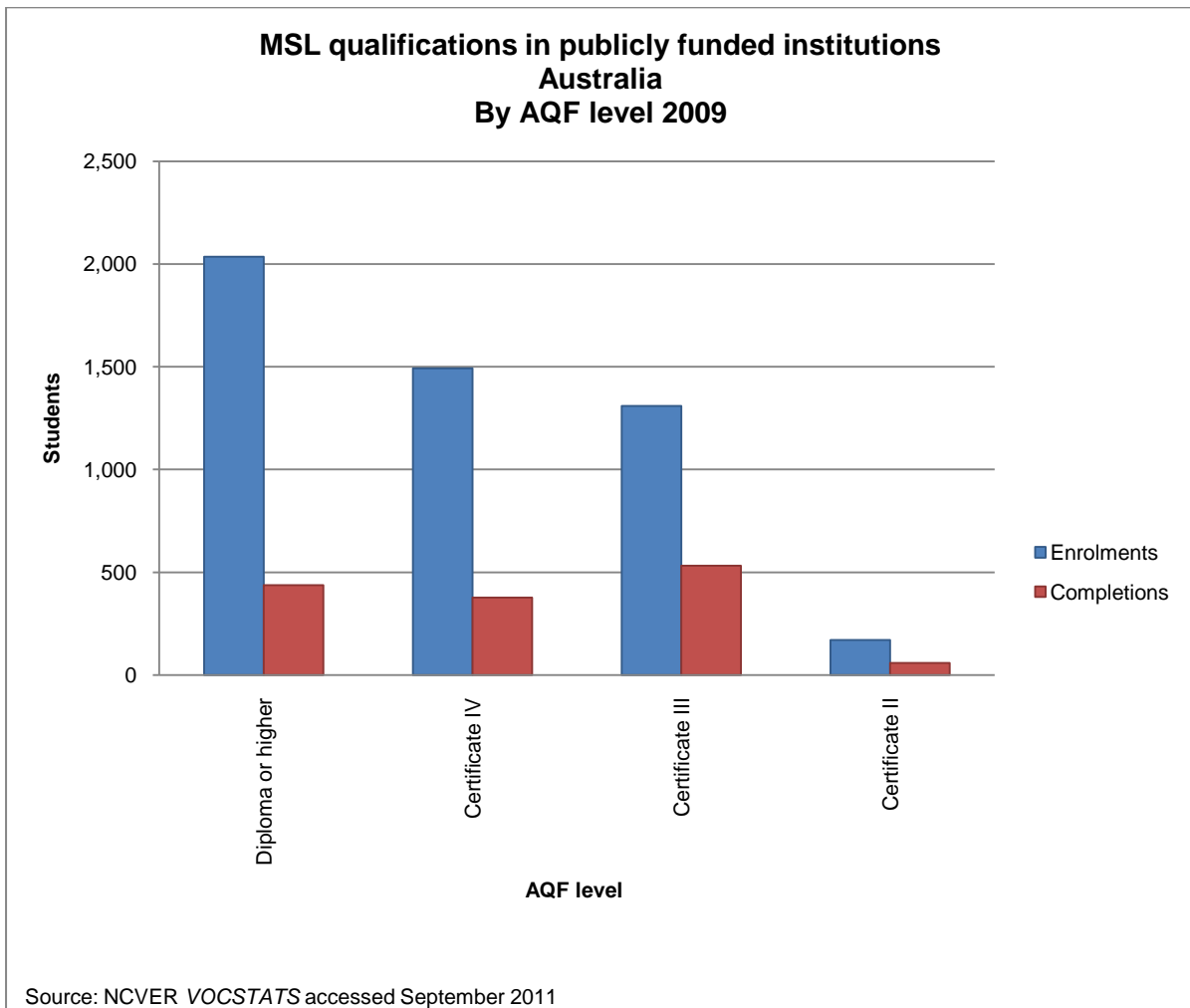
¹¹ National Centre for Vocational Education Research VOCSTATS accessed September 2011

During 2009, 5,008 people commenced a MSL qualification at a publicly funded training provider and 1,404 people completed a qualification from the MSL Training Package. Western Australia had the most enrolments (1,594) with New South Wales close behind with 1,273 enrolments. The pattern was the same for completions with Western Australia having the most (419) and New South Wales the second most (381) through publicly funded institutions¹².



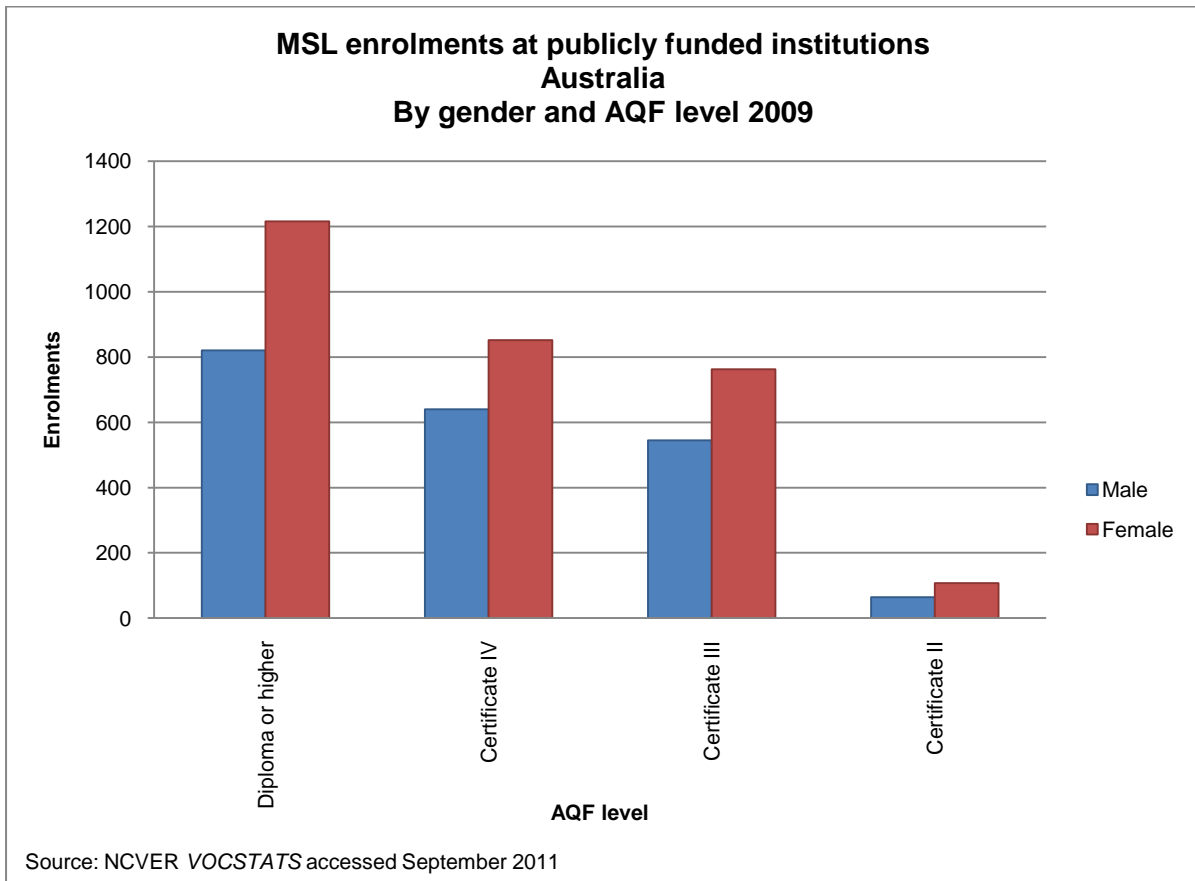
¹² National Centre for Vocational Education Research VOCSTATS accessed September 2011

The uptake of qualifications in the MSL Training Package varies from the uptake of qualifications in other MSA Training Packages in that the highest number of enrolments was at Diploma or higher level (2,036). At the same time the second highest number of people (438) completing a qualification in the MSL Training Package was at Diploma level¹³.



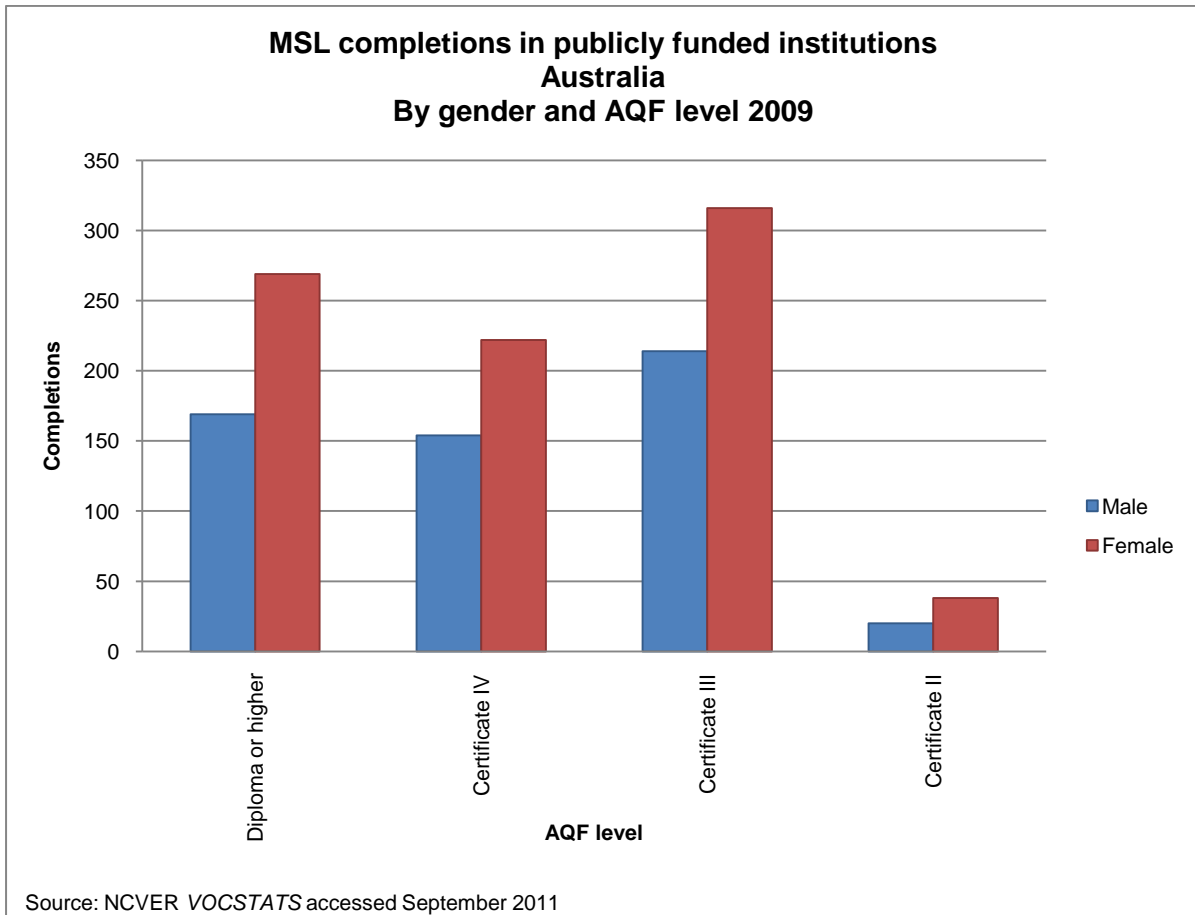
¹³National Centre for Vocational Education Research VOCSTATS accessed September 2011

Another area in which the Laboratory operations sector differs from other sectors under MSA’s coverage was in the number of women taking up qualifications from the MSL Training Package in 2009¹⁴. A total of 2,937 women enrolled in a MSL qualification in 2009. This was 58% of all enrolments. The most number of enrolments for women was in the Diploma of Laboratory Technology (1,199).



¹⁴ National Centre for Vocational Education Research VOCSTATS accessed September 2011

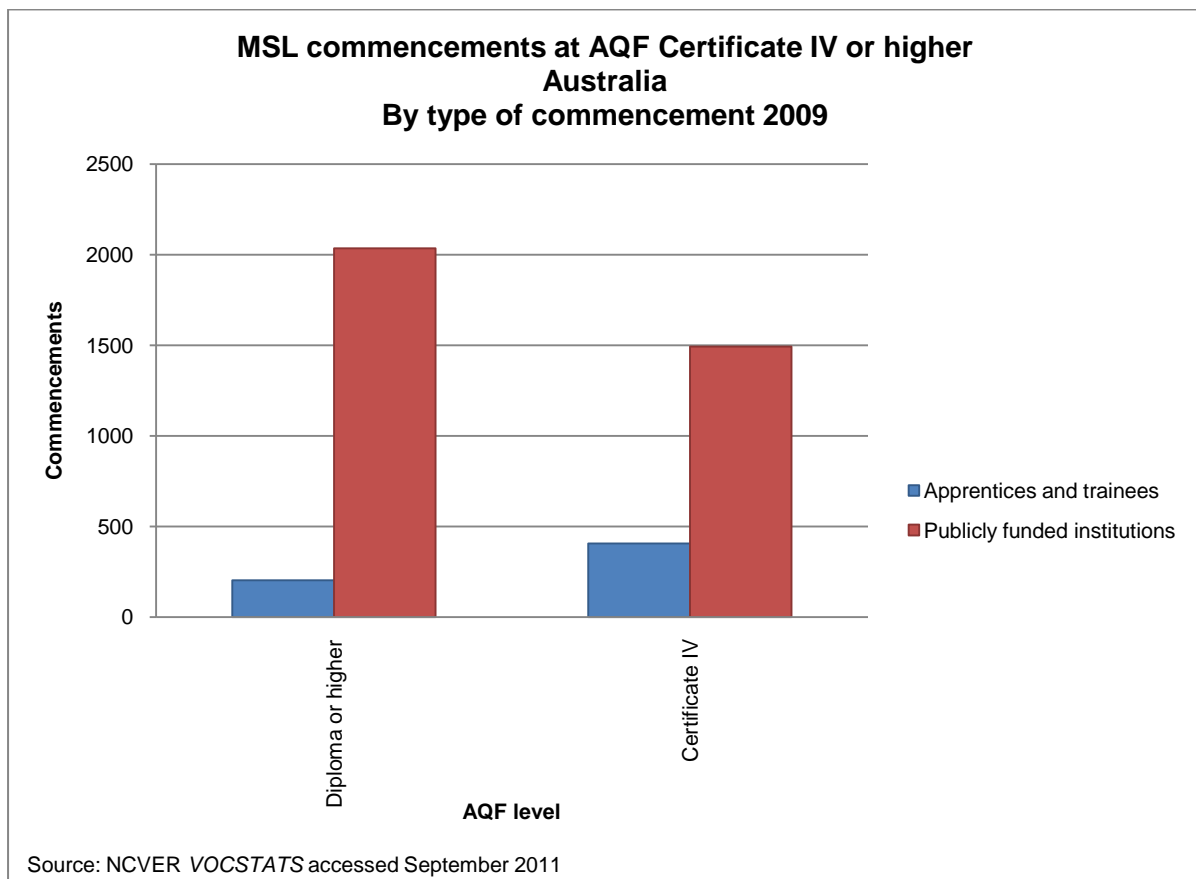
As with commencements, women made up the majority of completions with 845 graduating in 2009. The qualification with the most completions for women (316) was Certificate III in Laboratory Skills¹⁵.



¹⁵ National Centre for Vocational Education Research VOCSTATS accessed September 2011

Another area in which Laboratory operations varies from other sectors under MSA's coverage is in the uptake of qualification at Certificate IV level or higher. Training contract commencements at Certificate IV level or higher made up nearly 70% of all training contract commencements in 2009. This is a significantly higher percentage than for any other sector. A similar statistic emerges for publicly funded enrolments – 70% of all enrolments were at Certificate IV level or higher¹⁶.

Note: Due to the way data is collected, the two sets of data are not mutually exclusive.



¹⁶ National Centre for Vocational Education Research VOCSTATS accessed September 2011

Contribution to the economy

One measure of Gross Domestic Product (GDP) is 'Industry Value Added' (IVA). In 2009-10 subdivision 69 Professional, scientific and technical services (except computer system design and related services) contributed \$65.6 billion to the Australian economy¹⁷. This figure does not take into account workers within this sector who are employed across a wide variety of industries in Australia.

The value of these occupations within enterprises and industries should not be underestimated as both research and development and quality assurance play a role in ensuring the sustainability of both enterprises and industries.

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¹⁷ Australian Bureau of Statistics *Australian Industry 2009-10* Table 3 accessed September 2011