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What are the occupational aspirations of Australian 15-year-olds?

The most recent OECD Programme for International Student Assessment (PISA) survey enables educators, policy makers and the wider community to compare Australian students with each other, as well as with their counterparts across the world.

PISA measures the extent to which 15-year-old students near the end of compulsory education have acquired the knowledge and skills that young adults need to meet the challenges of the future.

As students near the end of their secondary schooling, they will be considering their educational choices and their future occupations. This *Snapshot* examines Australian students' occupational aspirations and the roles they expect to be engaged in when they are around 30 years of age. It explores how expectations differ by gender and socioeconomic background, and reports changes to the top 10 most cited occupations since the first PISA assessment in 2000.

The PISA 2018 questionnaire included a single-question measure of students' expectations: *What kind of job do you expect to have when you are about 30 years old?* The responses to this open-ended question were classified according to the International Standard Classification of Occupations-08 (ISCO-08).[1] Seventy-five per cent of Australian PISA students responded to the question and the results for this group of students are reported in this *Snapshot*.[2]

It is important to note that student responses should not be taken to refer to their overall careers. Instead, this question focuses on a single moment in time in the students' future lives. Another consideration in interpreting this snapshot is the extent to which 15 year old students are able to predict what they are likely to be doing at age 30 – an age that must seem very far away for most.

What occupational groups do students prefer?

Using the major groups of ISCO-08, Figure 1 shows that the majority (63%) of students expected to be working in a professional occupation at around the age of 30, followed by approximately 10% of students each for the areas of:

- *craft and related trade workers* and
- *technicians and associate professionals.*

Seven per cent of students expected to be employed as *service and sales workers* and 3% expected to be in managerial positions. Few students saw themselves working in the remaining occupational groups:

- *armed forces*
- *skilled agricultural, forestry and fishery workers*
- *elementary occupations*
- *plant and machine operators*, and
- *clerical support workers.*

This is an interesting finding since the National Skills' Commission identifies a number of agricultural occupations – such as agricultural scientist, arborist and shearer – and a number of plant and machine operation occupations – such as metal fabricator and pressure welder – as

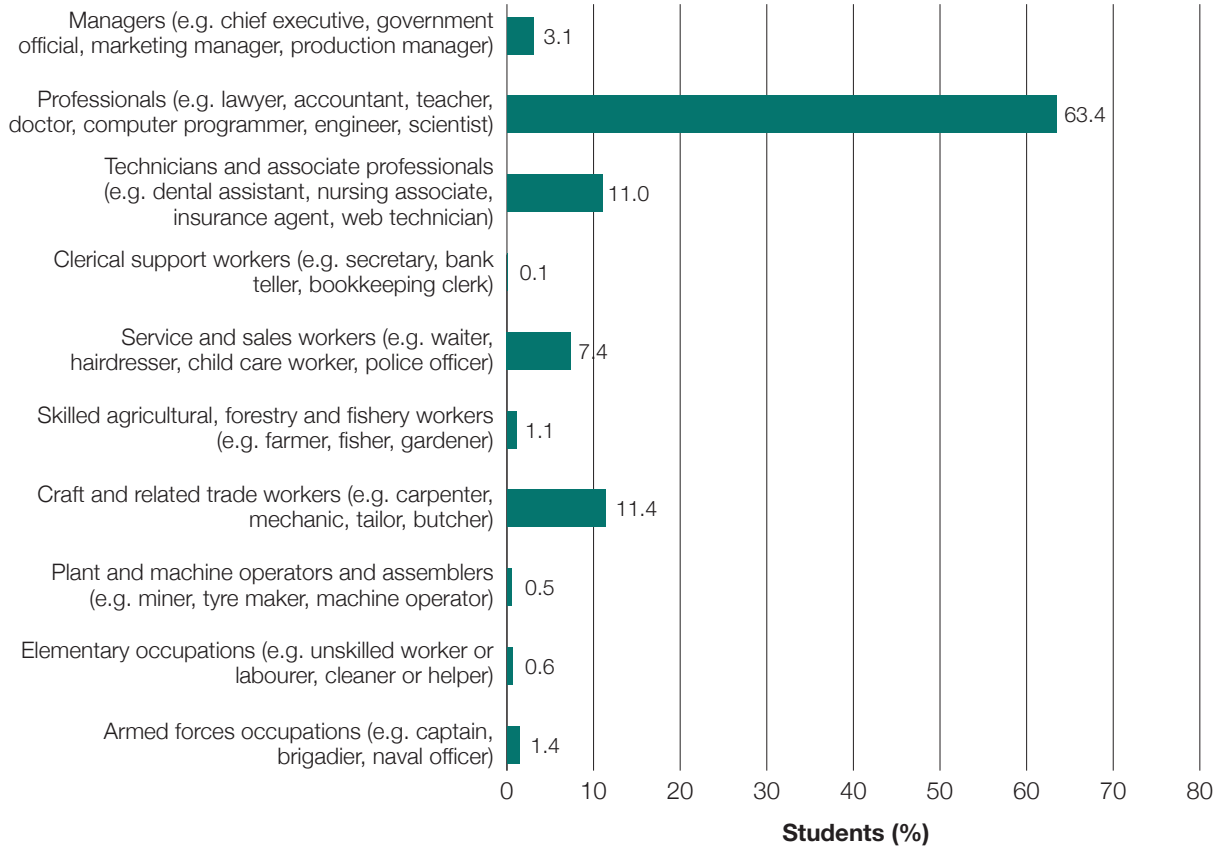

Figure 1 Expected occupational groups for students, PISA 2018

among those occupations of greatest need in Australia in the future.[3]

Interestingly, Australian students indicated high expectations for their future occupations. Over three-quarters of students expected to have a non-manual, high-skilled occupation that will require further education after secondary school. Most of the occupations in the *managers* and *professionals* groups require at least a bachelor's degree, and *technicians and associate professionals* occupations require further study at a technical and further education institution. This finding is at odds with the current make-up of the Australian labour force. In 2016–2017, the ABS reported that just 18.5% of employees were classified as professionals.[4]

Are there differences in occupational group expectations by gender?

Figure 2 shows differences in occupational aspirations between female and male students. The largest gender gaps were found in the *professionals* occupational group, in favour of females, and in *craft and related trade workers* occupations, in favour of males, each with a gap of 21 percentage points.

A significantly higher proportion of female than male students expected to be employed as *service and sales workers*, while a significantly higher proportion of male than female students expected to be employed as *managers*, and in areas including:

- *armed forces occupations*
- *skilled agricultural, forestry and fishery workers*
- *elementary occupations*, and
- *plant and machine operators and assemblers*.

These findings do echo the ABS figures, with a far greater number of women than men employed as professionals and sales workers in 2017–18. At the same time, a far greater proportion of men were employed as technicians, trade workers and machinery operators.[4]

The proportions of female and male students expecting to be employed as *technicians and associate professionals* and *clerical support workers* were similar, at 10.5% and 11.5% respectively.

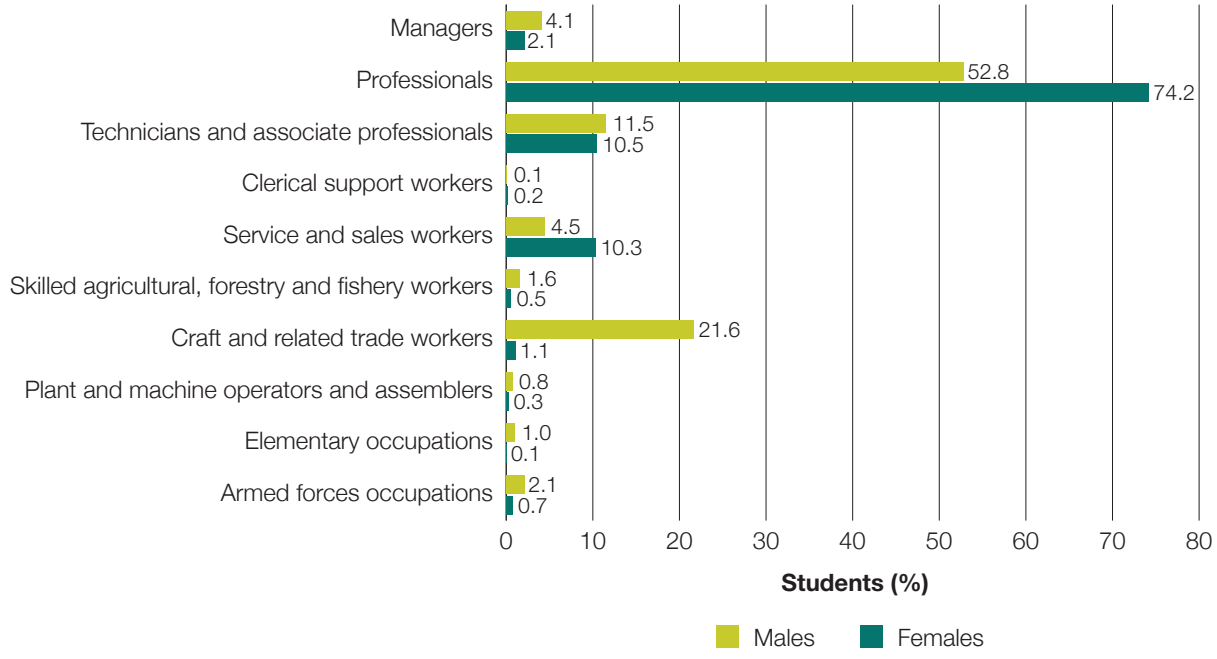

Figure 2 Expected occupational groups for females and males, PISA 2018

Are there differences in occupational group expectations by socioeconomic background?

Figure 3 shows the occupational aspirations of disadvantaged and advantaged students by occupational groups. A significantly higher proportion of students from socioeconomically advantaged than disadvantaged backgrounds expected to work in a professional occupation, a gap of 26 percentage points, and to a lesser extent in managerial positions, with a gap of 2 percentage points.

A significantly higher proportion of socioeconomically disadvantaged than advantaged students expected to be employed in the areas of:

- *craft and related trade workers*
- *service and sales workers*
- *technical and associate professionals*
- *elementary occupations*
- *armed forces occupations*, and
- *skilled agricultural, forestry and fishery workers*.

The proportions of socioeconomically disadvantaged and advantaged students expecting to be employed as *clerical support workers* and *plant and machine operators and assemblers* were not significantly different.

This is interesting as research in Australia has indicated that students from disadvantaged and advantaged background have similar aspirations (Gore et al., 2016). At the same time, however, awareness of particular careers (including role models) and school achievement are both known to be highly correlated to career aspirations (Holmes et al., 2018) and these factors may help explain these patterns, as may factors such as geographical location (and the availability of employment locally), disability and immigration status. [5,6]

Have occupational aspirations changed?

Since the first PISA assessment in 2000, the same question about occupational aspirations has been asked. This makes it possible to examine how students' occupational aspirations have changed over time.

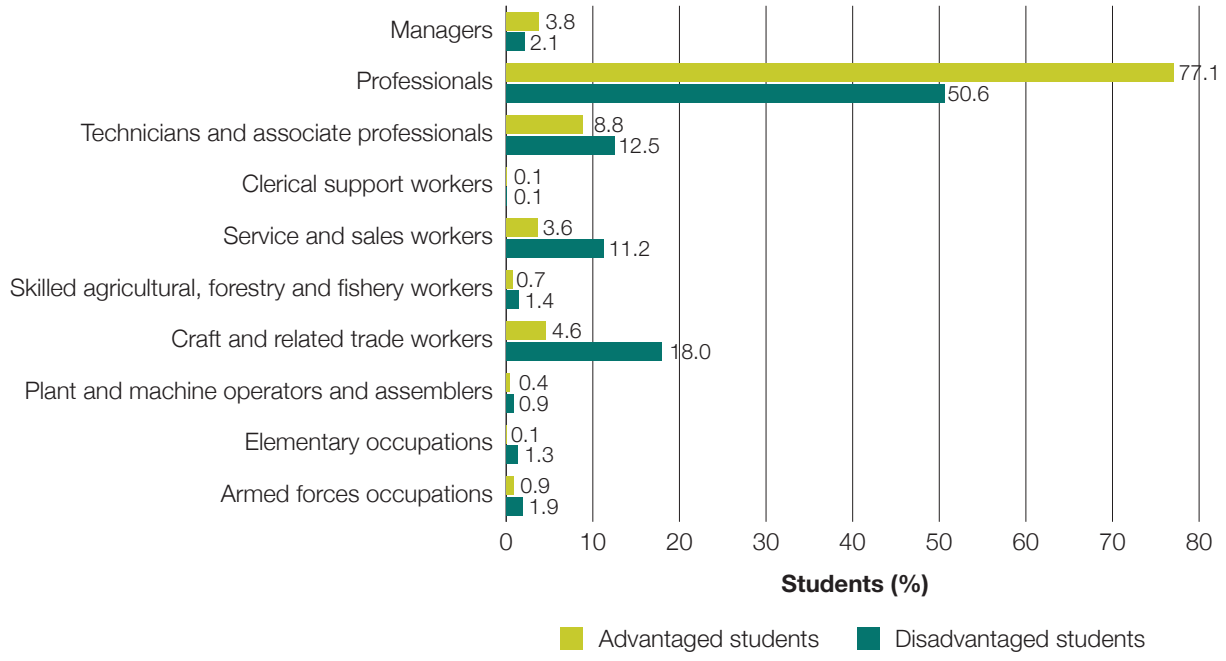

Figure 3 Expected occupational groups for disadvantaged and advantaged students, PISA 2018

Figure 4 shows the percentages of female and male students in 2000 and 2018 expecting to be employed in one of the 10 most commonly named occupations at around 30 years of age. Overall, the results show that students' occupational aspirations have become more concentrated for females and less concentrated for males across the 18 years. In PISA 2018, 41% of female and 33% of male students reported that they expected to be employed in one of the top 10 named occupations. This represents an increase of 3 percentage points for female students and a decrease of 8 percentage points for male students.

In 2018, teachers, lawyers, medical doctors, physiotherapists, and science and engineering careers were the most popular occupations for female and male students combined. For female students, four of these occupations (teachers, lawyers, medical doctors, and physiotherapists) featured in the top 10 named occupations in 2000, while for male students, two of the occupations (lawyers and medical doctors), in addition to architects, and carpenters and joiners were also occupations listed in the top 10 named occupations in 2000.

These findings are consistent with those in the Longitudinal Survey of Australian Youth (LSAY) for female students, with students in the LSAY also identifying nursing, law and teaching as the top three careers they were interested in pursuing in the future (LSAY, 2018). For male students, the LSAY data identifies the same top two careers that students are interested in as PISA – engineering and electricians – but identifies joining the police force as the third most popular.[7]

In terms of the need for these professions in the future, the Australian Government predicts that all of the top three occupations identified by both females and males are those in which employment growth is expected between 2020 and 2025. For health, legal and education professionals the Government predicts employment growth of 15.2%, 17.5% and 8.7% respectively. For engineering, electricians and carpenters, predictions are for employment growth of 11.2%, 12.9% and 8.1% respectively.[8]

It is noteworthy that of the the sectors with the highest predicted employment growth in Australia is information and communication technology, which the Government anticipates will grow by 26.6% by 2025. Interest in ICT is included in the interest in male students in science and engineering careers and it is a concern that just 2.5% of female students are focused on this area as a career destination.

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[1] International Labour Office (2007), *International Standard Classification of Occupations*, Geneva: International Labour Office.

[2] The 25% of students who are not reported in this *Snapshot* include those students who did not respond to the question or who provided an invalid answer, for example, a vague response such as 'I don't know' or a 'well-paid job'.

[3] National Skills Commission (2021). *Skills Priority List*, https://www.nationalskillscommission.gov.au/sites/default/files/2021-06/Skills%20Priority%20List%20Occupation%20List_0.pdf

[4] Australian Bureau of Statistics (2020). *Jobs in Australia*, retrieved from https://www.abs.gov.au/statistics/labour/earnings-and-work-hours/jobs-australia/latest-release

[5] Gore, J., Holmes, K., Smith, M., Fray, L., McElduff, P., Weaver, N. & Wallington, C. (2017). Unpacking the career aspirations of Australian school students: towards an evidence base for university equity initiatives in schools, *Higher Education Research & Development, 36*(7): 1383-1400, DOI: 10.1080/07294360.2017.1325847

[6] Holmes, K., Gore, J., Smith, M. & Lloyd, A. (2018). An Integrated Analysis of School Students' Aspirations for STEM Careers: Which Student and School Factors Are Most Predictive?. *International Journal of Science and Mathematics Education 16*, 655–675. https://doi.org/10.1007/s10763-016-9793-z

[7] Longitudinal Survey of Australian Youth (2018). *Generation Z at School*. Retrieved from https://www.lsay.edu.au/publications/search-for-lsay-publications/generation-z-at-school

[8] Australian Government (2021). *Employment Projections*, retrieved from https://lmip.gov.au/default.aspx?LMIP/GainInsights/EmploymentProjections

Figure 4 The top 10 named occupations for females and males, PISA 2000 and 2018

ASK YOURSELF:

- What support does your school give students in considering possible occupations for the future?
- How can students from traditionally under-represented groups be supported to consider growth occupations such as those in information and communication technology?

Australia's participation in PISA 2018 was managed by the Australian Council for Educational Research and funded by commonwealth, state and territory governments. Further information about Australia's participation in PISA 2018 can be found at www.acer.org/pisa.

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