**If you’re preparing students for 21st century jobs,**

**you’re behind the times**

Every year, the Australian Taxation Office [releases a report](https://www.ato.gov.au/Media-centre/Media-releases/2016-17-Tax-Stats-released/) that includes the highest earning occupations in Australia. These are mostly in the medical, legal and financial sectors.

This information is commonly used by school career advisers, together with [other career development material](https://www.education.gov.au/australian-blueprint-career-development), to help teenagers make career choices.

But the nature of work is changing rapidly under the [fourth industrial revolution](https://www.weforum.org/focus/fourth-industrial-revolution). This is driven by disruptive technologies such as automation, artificial intelligence, robotics, machine learning and digitalization.

The change is expected to lead to the complete loss of some jobs (such as those in repetitive, production-line manufacturing), the need for significant re-skilling in other jobs (such as pilots and radiologists) and the creation of completely new ones (such as robot trainers and big data analysts).

So, what should career guidance counsellors be doing to ensure today’s children have the skills for jobs of the future, not of the past?

**What teenagers want**

A [recent OECD survey](https://www.oecd.org/education/dream-jobs-teenagers-career-aspirations-and-the-future-of-work.htm) showed teenagers’ career expectations were concentrated in ten so-called “20th century” careers. These include doctors, teachers, lawyers and business managers.

These choices have remained unchanged for almost two decades. For girls, they have become even more popular since 2000. This suggests a significant gap between teenagers’ career knowledge and choices, and the reality of the rapidly changing nature of work.

It’s [estimated](https://doi.org/10.1787/2e2f4eea-en) on average, 14% of jobs across OECD countries are prone to becoming automated and another third could face substantial changes in how they are performed. Nearly half of the jobs in OECD countries are at significant risk of being automated over the next ten to 15 years.

Careers related to how humans and machines or computers complement each other [will provide new employment opportunities](http://library.fes.de/pdf-files/wiso/11480.pdf) across different sectors. Commercial passenger airliner pilots, for instance, will [steadily adjust](https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2018/november/2018_Flight_Ops_Survey_The_Pilot_of_the_Future_web.pdf) to new supervisory roles due to autonomous flight.

While most of the top ten jobs (such as in the health care, law enforcement and education) in the OECD survey are at [low risk of automation](https://doi.org/10.1787/d36cddc4-en), other nominated jobs outside this list (such as those in production manufacturing, office support and sales) are at higher risk.

The report characterises “jobs with a future” as those having higher growth prospects with a low risk of automation. In addition to those above, these include jobs in technology such as software engineers, data analysts and supervisors of automated operations.

In the Australian part of the survey, about 35% of jobs selected by teenagers are at risk of automation. This suggests teenagers and career advisers in Australia aren’t fully aware of how the market is shifting and what the “jobs with a future” are.

This misalignment between educational and career aspirations is most pronounced among young people from disadvantaged backgrounds. Around 6% are more likely to select jobs more at risk of automation than their more advantaged counterparts.

Also, teenage Australian boys are more likely to select careers in science and engineering. Paradoxically, they are 8% more likely to select jobs at risk of automation than girls of their cohort who are more likely to choose health sector professions.

**What should be done?**

The fourth industrial revolution is already having an impact on current jobs. Despite young people generally completing more years of formal education than their parents, many are [struggling to find relevant](https://doi.org/10.1111/auar.12256) and consistent employment.

Governments are [increasingly worried](https://doi.org/10.1093/oxrep/grw024) about the mismatch between what societies and industries demand versus what education systems supply.

Jobs in production line manufacturing are likely to disappear in the next 15 years. [Shutterstock](https://www.shutterstock.com/image-photo/workers-sort-biscuits-on-conveyor-belt-792336616)

The [OECD calls](https://www.oecd.org/newsroom/teenagers-career-expectations-narrowing-to-limited-range-of-jobs-oecd-pisa-report-finds.htm) for a [partnership](https://oecdedutoday.com/youth-employment-journeys/) between employers and school career advisers. Guidance that starts early, challenges stereotyping (based on gender and socioeconomic status), is well informed and delivered in the workplace in partnership with employers will be most effective. Successful career guidance [results in better economic](https://educationendowmentfoundation.org.uk/public/files/Presentations/Publications/Careers_review.pdf), education and social outcomes.

The Australian government developed a [National Career Education Strategy](https://www.education.gov.au/school-work-transitions) in 2019, after working with the state and territory education, business and industry, and career education groups. This aims to support school students to make better informed future study and career choices.

While this is a good first step, we need better support for students from disadvantaged backgrounds, especially those in [regional, rural and remote locations](https://docs.education.gov.au/system/files/doc/other/01218_independent_review_accessible.pdf) – as well as male students interested in participating in science, technology and engineering jobs.

The OECD study found countries like Austria and Germany, which had much lower concentration of 20th century careers, had high-quality vocational education and training (VET) programs available for people from a young age. This reinforces [research](https://www.ncver.edu.au/research-and-statistics/publications/all-publications/the-fourth-industrial-revolution-the-implications-of-technological-disruption-for-australian-vet) findings and [policy reviews](https://pmc.gov.au/domestic-policy/vet-review) that call for closer collaboration between the Australian VET sector and industry.

It also shows the importance of higher government investment in the sector in terms of training and developing skills relevant for disruptive technologies.

Exposing school students to relatively simple and low-cost career development activities, like attending [job fairs](https://doi.org/10.1787/b5fd1b8f-en), has been shown to significantly increase awareness of different occupations and reduce career concentration.

There isn’t a [consensus](https://www.ncver.edu.au/news-and-events/media-releases/training-for-the-fourth-industrial-revolution) among employers on how disruptive technologies will impact on their organizations. And they are wary of investing heavily in specific skills and training.

But they still have a pivotal role in preparing students with the skills to succeed in the future. The OECD study actively encourages employer engagement in education. Suggested activities include careers-insight talks, subject talks, enterprise competitions, mentoring, workplace visits, job shadowing and short work placements.

<https://theconversation.com/if-youre-preparing-students-for-21st-century-jobs-youre-behind-the-times-131567>