



Australian Government



National
Skills
Commission

Skills and jobs of the future – the Four Cs

One of the key challenges for the National Skills Commission (NSC) is to identify the skills and jobs of the future.

Knowing every twist and turn the future might hold is, of course, impossible.

What we can be more certain of are the big picture trends that are likely to shape the future.

These big picture trends include the ageing of the population and the implications of that for future care needs, and the growing importance of computers and computing in our everyday lives and across the economy.

The rise of automation and AI are also big picture trends. While these trends create jobs in computing and associated fields, they also tell us that skills in demand in the future are likely to be those that machines can't do.

From these big picture trends, we can summarise some of the important skills needs of the future as being:

- Care
- Computing
- Cognitive ability; and
- Communication skills.

We call these 'The Four Cs'.



Care



Computing



Cognitive ability



Communication

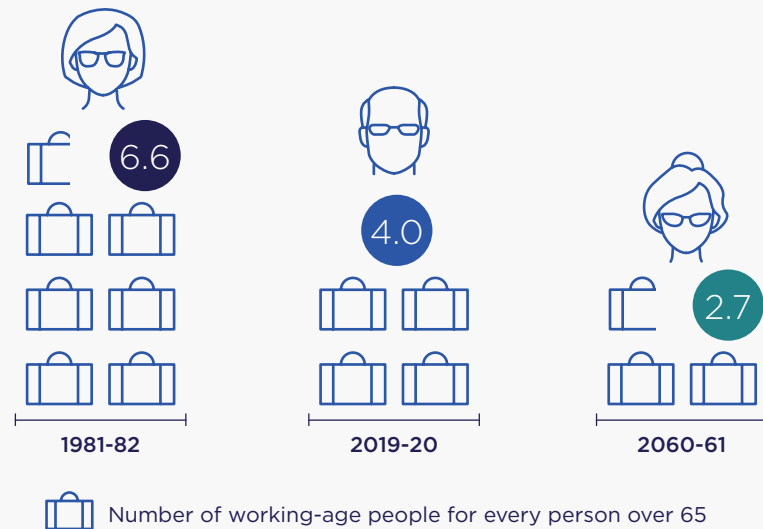


Care

There are a number of reasons why care is likely to be a key skill need of the future.

One of these is the ageing of the population. This will not only increase the demand for the care workforce, but the increase in demand will happen at the same time as the number of workers will shrink (as a share of the population).

There will be fewer people of working age to support the older population



Source: 2021 Intergenerational Report

Many roles in the care sector are also hard to automate as they are very human centric.

The impact of this combination of factors is already being seen.

Over the next five years the NSC projects that around a quarter of new jobs will be in the health care and social assistance sector. For example, the occupations expected to see the largest increases in employment are aged and disabled carers, and registered nurses. In fact, these two occupations alone are likely to account for 10% of all the new jobs created to 2025.

Largest growth projections over the next five years

+54,700

Aged and disabled carers



+46,500

Registered nurses





Computing

Computers are all around us. And while many worry about the risk of automation and that technology is taking our jobs, the reverse is also true. Many jobs are being created in the technology space and the demand for digital skills is higher than ever.

In fact, over the next five years, the NSC expects the number of software and applications programmers to jump by 46,100 (or 30%).

As we look into the future, it's hard to see a decline in the importance of computing and its related skills.

In fact, digital skills are one of the key emerging skills groups identified in the NSC's analysis.

Did you know: Of the 279 different skills analysed by the NSC, 'test computer or software performance' and 'resolve computer application or system issues' are forecast to grow the most rapidly over the next five years?



Cognitive ability

While many jobs will be created as a result of computing advances, it's also true that automation will see some jobs disappear.

We have seen this play out over the past few decades through a declining share in jobs with many routine tasks (repetitive physical labour that can be done by machines) towards non-routine, non-repetitive work.

What this tells us is that there are jobs that machines are less likely to do. These are typically jobs where the tasks undertaken from day-to-day are not the same.

In addition, the greater difficulty in automating non-routine jobs requiring high-order thinking skills suggests these types of jobs – cognitive jobs – will remain in high demand into the future.

The increasing importance of cognitive jobs (especially non-routine, cognitive jobs) also underscores the importance of post-secondary education, both now and into the future.

Higher skill level jobs have grown the fastest over the past decade.

Looking forward, the NSC projects that over half of the new jobs created in the next five years will need a bachelor's degree or higher.



Communication

The NSC's analysis also highlights the importance of core competencies or what can also be called employability skills. These include communication, digital engagement, problem solving, showing initiative and teamwork.

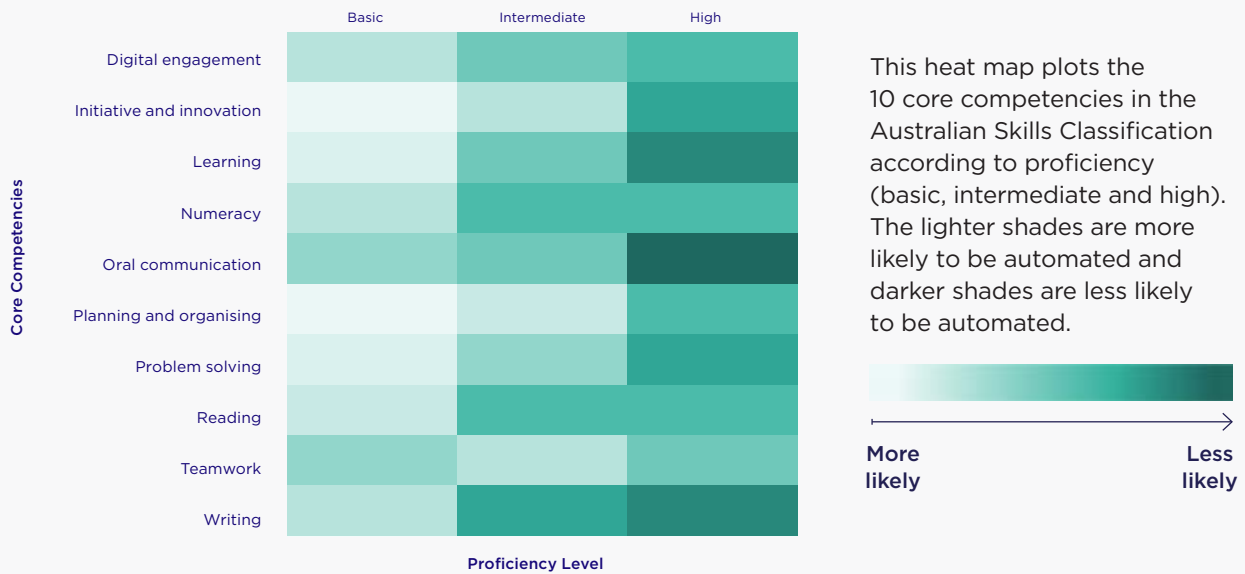
That's also true when looking to the future. In fact, high levels of proficiency in core competencies, are associated with a lower chance of automation.

In other words, jobs that require a low level of proficiency in a core competency are generally more likely to be automated. An example of this could be a simple customer service script that can be delivered by a chatbot.

On the other hand, the NSC finds that jobs requiring very high-level oral communication and writing skills are the least likely to be automated.

This finding – and the importance of communication skills to a range of jobs – sits behind the NSC's view that communication will be a core skill of the future.

Jobs requiring a high proficiency in core skills are less likely to be automated – especially those requiring strong communication



Source: NSC analysis 2021

Beyond the Four Cs

Of course, there will be a wide range of jobs in the future.

The Four Cs aren't exclusive. But they do highlight a set of skills that are likely to be important over the years ahead.

Some of these skills – such as care – relate to specific occupations. Others, like computing and communication will be a part of most, if not all jobs.

What's also likely is that how we do our jobs will continue to change. That means we must be prepared to reskill and retrain at many points across our lifetimes.

While the future may be uncertain, it is important to remember we have already navigated a range of big changes to our jobs market over recent decades.

And while past performance is no guarantee of future success, the ability of our jobs market to respond and reshape itself over the past few decades provides grounds for optimism about our ability to do so into the future.