THE REVIEW OF
SENIOR SECONDARY PATHWAYS
INTO WORK, FURTHER EDUCATION AND TRAINING

BACKGROUND PAPER

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Setting the context

Globalisation, artificial intelligence and technology are having a profound impact on both the workplace that graduates of senior secondary schooling will enter into, and the diversity and flexibility of choices and pathways available to them.

The school system needs to support young people to make informed choices about learning options that will help them beyond school, even before they enter senior secondary schooling. The ways in which our senior secondary schooling system supports students to make informed decisions to help them achieve their further study and work goals will be critical to students' future prosperity, wellbeing, and contribution to Australia as informed, engaged citizens.

This paper sets out a number of challenges facing senior secondary students when they are making decisions about subjects and post-school pathways. While this paper does not claim to be exhaustive in covering the range of issues in what is a complex and crowded space, it seeks to bring together evidence to support the ideas and propositions contained in the companion document, the *Discussion Paper for the Review of senior secondary pathways into work, further education and training*.

The changing nature of work

Recent research highlights the increasingly complex and dynamic working world young people will navigate. Australian workers are already spending less time on routine and manual tasks and more time on complex activities that require a high degree of creative thinking, decision-making, problem-solving, interpretation of information, and personal interaction.[1] With machine learning and artificial intelligence being progressively embraced by businesses, the ability of humans to support and direct this activity will be increasingly prioritised over the more routine tasks that are being automated. This presents particular challenges for those entering the labour market for the first time, with many of the roles and tasks of entry-level positions no longer being required. The biggest change will be the tasks someone does in their role, rather than jobs that are eliminated altogether. [2]

On a more positive note, technological advances have also brought a democratisation of innovation, and as early adopters, young people are particularly well placed to take advantage of this. The growth of the gig economy, the ability to create new apps and the advent of 3D printing have made starting businesses more accessible to young people than ever before.

In 2018, the World Economic Forum identified the following skills in demand today, those that are emerging, and those that are predicted to decline.

Figure 1: In-Demand Skills[3]

Today, 2018	Trending, 2022	Declining, 2020
- Analytical thinking and innovation - Complex problem-solving - Critical thinking and analysis - Active learning and learning stratregies - Creativity, originality and initiative - Attention to detail, trustworthiness - Emotional intelligence - Reasoning, problem-solving and ideation - Leadership and social influence - Coordination and time management	- Analytical thinking and innovation - Active learning and learning strategies - Creativity, originality and initiative - Technology design and programming - Critical thinking and analysis - Complex problem-solving - Leadership and social influence - Emotional intelligence - Reasoning, problem-solving and ideation - Systems analysis and evaluation	- Manual dexterity and precision - Memory, verbal, auditory and spatial abilities - Management of financial, material resources - Technology installation and maintenance - Reading, writing, maths and active listening - Management of personnel - Quality control and safety awareness - Coordination and time management - Technology use, monitoring and control

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[1] alphaBeta, Strategy x economics, *The Automation Advantage,* Page 11
[2] Business Council of Australia, (2018), *Future-Proof, Australia's Future Post-secondary Education and Skills System,* P. 9
[3] Centre for the New Economy and Society, World Economic Forum (2018), *The Future of Jobs Report*, Geneva.

With the anticipated changing nature of work in Australia, the role of education beyond school is becoming increasingly important, as it is projected that 90 per cent of employment growth will be in skill levels 1 and 4 over the five years to May 2023.[4]

- **Skill level 1** (Bachelor degree or higher) occupations are projected to make the largest increase, much of which can be attributed to occupations within the Professionals group such as Registered Nurses and Software and Applications Programmers.

- **Skill level 4** (Certificate II or III) occupations are projected to make the second largest contribution to total employment, driven by Community and Personal Services workers, including Aged and Disabled Carers, Child Care Careers and Education Aides.

Figure 2: Projected employment growth to May 2023 ('000) for skill levels by occupation
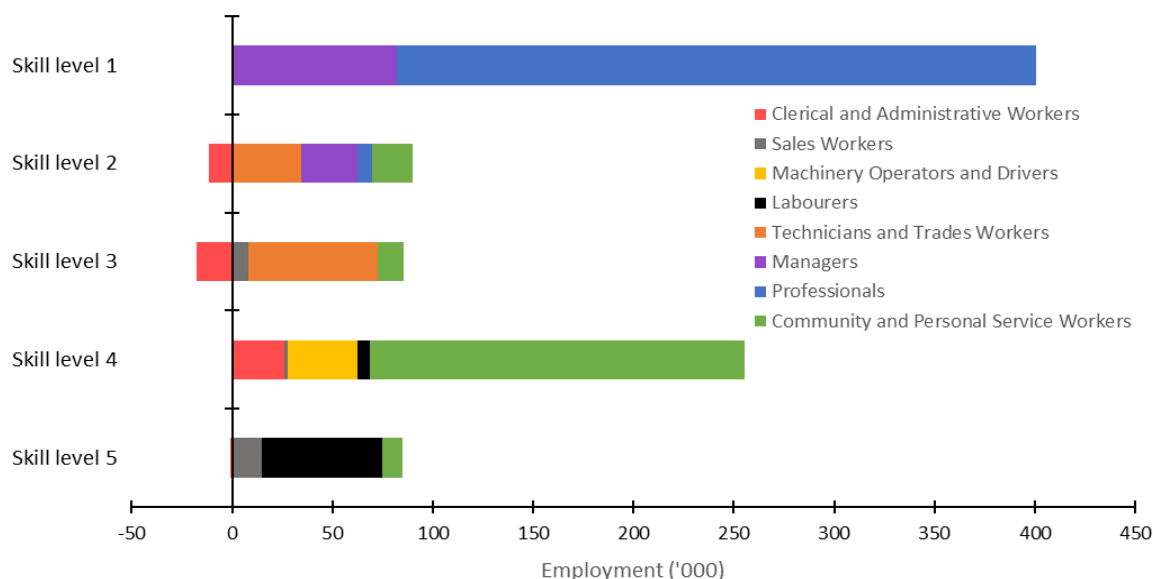
Source: Department of Jobs and Small Business, 2018, *Employment Outlook to May 2023.*

It is clear that students will need to be able to apply their knowledge in unknown and evolving circumstances to navigate increasingly complex pathways and unclear futures.[5] Innovation, creativity and entrepreneurship are likely to have greater importance in providing young people with opportunities to work as the pace of change accelerates.

Completing senior secondary education is more important than ever

Currently, an average of 79 per cent of young people across Australia achieve a senior secondary certificate of education or equivalent qualification. To be competitive in the job markets of the future, more students will need to both complete Year 12, and obtain additional qualifications through some form of post-school educational or training pathway.

In 2010, the Australian Government introduced the *Compact for Young Australians*, requiring young Australians to participate in full time education, training or employment until they reach the age of 17.

The Council of Australian Governments (COAG) also set a target to lift the Year 12 (or equivalent) attainment rate for 20-24 year olds to 90 per cent by 2020.

[4] Department of Jobs and Small Business (2018) *Employment Outlook to May 2023*, Australia, p. 8
[5] OECD. (2018). *The future of education and skills: Education 2030*, OECD, France.

It is widely recognised that young people who fail to complete Year 12 or gain equivalent qualifications can experience difficulty in making the transition from school to post-school education and training, as well as employment.[6] These young people are much less likely to gain full access to Australia's economic, political, and social opportunities, and this can affect their ability to achieve financial independence.[7]

Different student groups are more or less likely to disengage from school. For example, the senior secondary retention rate for Aboriginal and Torres Strait Islander students is considerably lower than the rate for non-Aboriginal and Torres Strait Islander students.[8] Students from low socioeconomic backgrounds also have a higher probability of leaving school early,[9] as do people with disabilities, who can experience fewer opportunities to engage in education overall.[10]

This has an effect on the proportion of students in these groups who meet the requirements of a Senior Secondary Certificate of Education or equivalent, as outlined below in Figure 3.

Figure 3: Year 12 attainment rates by student background
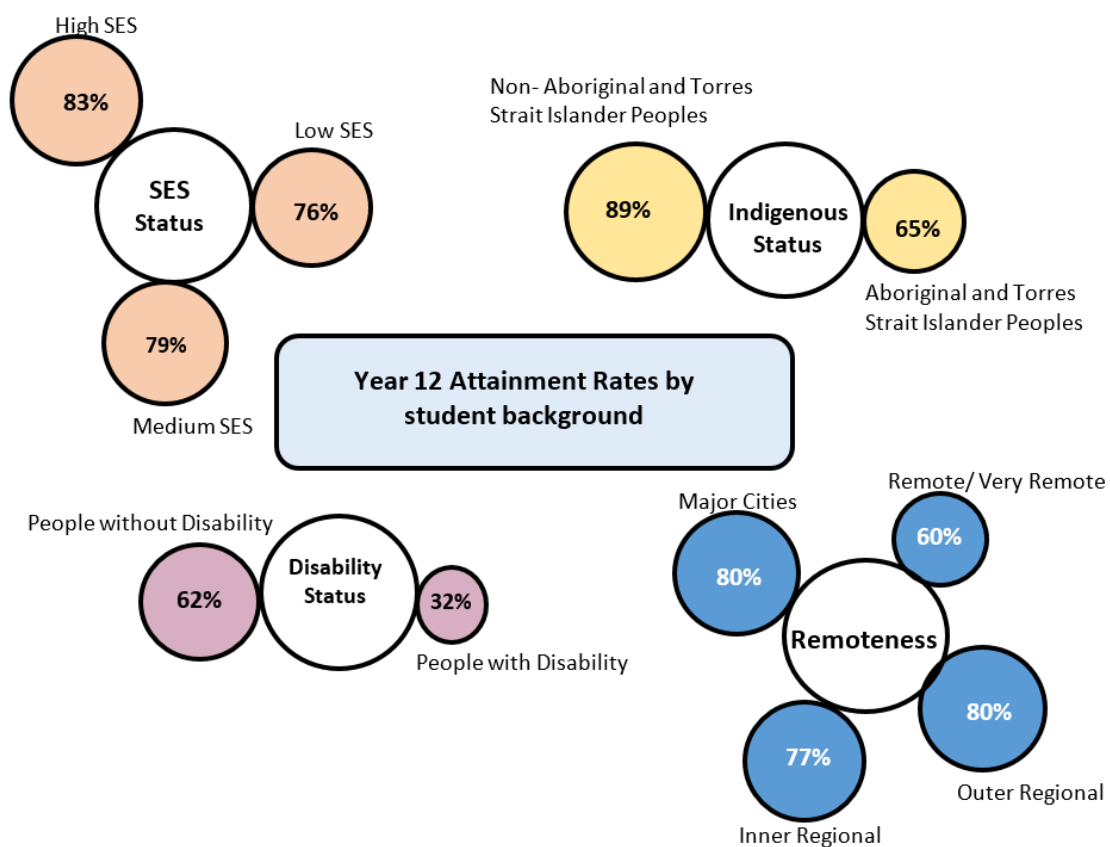
NB Figures for socio-economic status and remoteness are from 2017, disability status figures are from 2015, Indigenous status figures are from 2016.[11]

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[6] Lamb, S. et al (2015) *Educational opportunity in Australia 2015: Who succeeds and who misses out,* Centre for International Research on Education Systems, Victoria University, for the Mitchell Institute, Melbourne, p. 41

[7] Australian Institute of Health and Welfare (2017) *Disability in Australia: Changes over time in inclusion and participation in education,* Cat. No. DIS 69, Canberra, AIHW, p. 4

[8] Australian Bureau of Statistics (2018) Cat No. 4221-Schools, Australia 2018, Table 90a *Key Information by States and Territories*, 2017-2018, accessed 19/8/19, https://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/4221.0/.

[9] McLachlan, R. et al (2013) *Deep and Persistent Disadvantage in Australia*, Productivity Commission, Canberra, p. 93.

[10] McLachlan, R. et al (2013) *Deep and Persistent Disadvantage in Australia*, Productivity Commission, Canberra, p. 93.

[11] Australian Curriculum, Assessment and Reporting Authority (ACARA) *National Report on Schooling Data Portal- Year 12 Certification Rates*, accessed 17/07/2019 *https://acara.edu.au/reporting/national-report-on-schooling-in-australia/national-report-on-schooling-in-australia-data-portal/year-12-certification-rates*. Figures from 2017, statistics expressed as a percentage of the potential year 12 population.

Department of Prime Minister and Cabinet (2019) *Closing the Gap Report 2019*, Commonwealth of Australia, p. 82. Figures from 2016, proportion of 20-24 year olds who achieved Year 12 attainment; Australian Institute of Health and Welfare (2017) *Disability in Australia: Changes over time in inclusion and participation in education*. Cat. No. DIS 69, AIHW, Canberra. Figures from 2015, statistics for people aged 20 and over.

Meeting the demands of the future labour market will mean ensuring senior secondary school equips students with the knowledge, skills and capabilities they need. It will also require schooling to better support young people to make informed choices for pathways beyond school. Senior secondary schooling needs to be engaging for students at risk of leaving and all students need to be able to understand and access suitable post-schooling pathways.

Senior Secondary Certificate of Education (SSCE)

Senior secondary schooling plays an important role in equipping young people with the essential skills needed to undertake everyday activities. There is also a rising need to attain skills to support life-long learning and the ability to adapt in our ever-changing world. Improving clarity around the purpose and desired outcomes of senior secondary schooling is essential.

Students receive a Senior Secondary Certificate of Education (SSCE) or equivalent record of achievement when they complete their senior secondary education. While there is a national curriculum in place for schooling up to Year 10, senior secondary curriculum, assessment and certification varies across states and territories.

The Australian Qualifications Framework (AQF) specifies that graduates of a SSCE will have:

- foundational knowledge across a range of learning areas as well as some specialist discipline or technical knowledge
- literacy, numeracy and communication skills and the capacity to use information communication technologies skills to present knowledge and ideas to others
- cognitive skills to access, record and act on information from varied sources appropriate to subject disciplines and to move across subject disciplines to develop new expertise
- the ability to integrate disciplines to solve problems, apply analytical thinking and work with others.[12]

Literacy and Numeracy skills

There is widespread recognition that literacy and numeracy skills underpin ongoing success in learning and work performance, and in the development and application of other capabilities.[13] There are minimum standards for literacy and numeracy as a condition of qualifying for a SSCE across states and territories. Some allow the requirements to be met through subject choice, while in other jurisdictions there is an online test students must pass to be eligible for their certificate.

Despite these efforts, feedback from employers has indicated that they are dissatisfied with the levels of literacy and numeracy many recent graduates and school leavers possess.[14]

Digital literacy

As well as literacy and numeracy, digital skills are becoming increasingly important as foundation in our digital world. The Business Council of Australia has indicated a minimum level of technological skills is crucial for all Australians. Schooling does not need to move away from the fundamentals, but if young people do not have technology skills, they are going to struggle to find their first job, let alone adapt to changes in the labour market.[15]

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[12] Australian Qualifications Framework Council (2013) *Australian Qualifications Framework Second Edition January 2013*, South Australia, p. 24.
[13] Ithaca Group (2016) *Everybody's Core Business: Research into the non-technical capabilities needed for successful participation in work or further study: Final Report*, Department of Education and Training, Australia, p. 6
[14] The Australian Industry Group (2018) *Skilling: A National Imperative, Survey report on Workforce Development Needs*, aiGroup, Australia
[15] Business Council of Australia, *Future-Proof Australia's future post-secondary education and skills system* (2018), p. 11

Transferable skills

There is broad consensus on the need for senior secondary school graduates to have a range of skills such as collaboration, problem solving and creativity. The SSCEs in all states and territories embed the teaching of transferable skills within their subject syllabuses, variously described as general capabilities, 21st century skills and employability skills.

Figure 4: Skills within syllabus across Australia
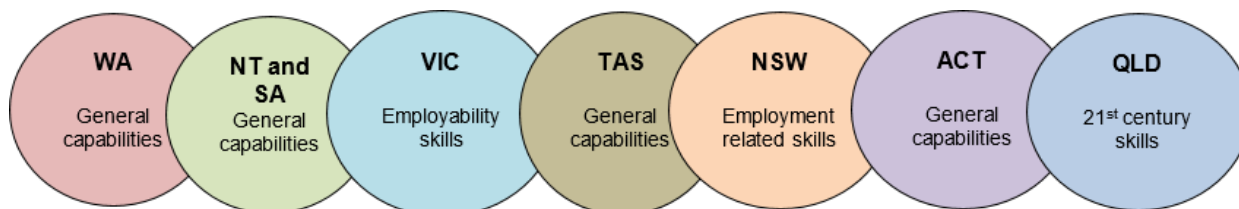
The extent to which individual students acquire these skills will vary depending on the subjects they study; for example, numeracy skills will form a greater part of mathematics subjects.

This variability raises a question around not only the skills young people obtain, but also what senior secondary certificates tell employers or providers of further education and training about what a student has learnt, knows and can do. Whether the current presentation of senior secondary certificates outlining only a student's grades provides an adequate picture of their broader skills and knowledge is a key issue for consideration.

> **Melbourne Declaration on Educational Goals for Young Australians, December 2008**
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> The Melbourne Declaration outlines the shared national goals for schooling. While the Declaration is now ten years old and a process to refresh it is currently underway, it sets out clear goals for senior secondary schooling:
>
> *The senior years of schooling should provide all students with the high quality education necessary to complete their secondary school education and make the transition to further education, training or employment. Schooling should offer a range of pathways to meet the diverse needs and aspirations of all young Australians, encouraging them to pursue university or postsecondary vocational qualifications that increase their opportunities for rewarding and productive employment. This requires effective partnerships with other education and training providers, employers and communities.*

Entrepreneurial learning

Entrepreneurial learners can be described as those who apply their curiosity and talents to identify and solve problems worth solving, who have the potential to benefit others from what they do and produce. Entrepreneurial learning often uses project and product oriented learning as a pedagogical strategy. Distinct features of entrepreneurial learning include identifying and investigating real world problems and opportunities; creating authentic artefacts (products or services) of value to others; working teams; and iterative experimentation over an extended period of time.[16]

Entrepreneurs achieve success by applying knowledge, creatively and resourcefully; be it in STEM, business, the creative arts or trades, or through social, professional or other type of knowledge. This ability is recognised globally as critical to 21st century learning and citizenship. Entrepreneurial learning needs to be driven by entrepreneurial teaching, to achieve high quality outcomes for young people. Ideally, entrepreneurial skills should be learned, practice and used every day, in every lesson, in every area of the education curriculum.[17]

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[16] Anderson, M., Hinz, V., Matus, M., 2017, *The Paradigm Shifters: Entrepreneurial Learning in Schools, Research Report, November 2017,* Mitchell Institute, p. 7
[17] Government of South Australia, *Entrepreneurial Learning Strategy,* Department of Education, P. 5

Schools can embrace entrepreneurial learning through establishing external networks, a leadership culture that supports experimentation, teacher disposition to guide and scaffold rather than direct, and student disposition driven by curiosity. School factors that act against entrepreneurial learning include time and multiple priorities, teacher behaviours that discourage agency and students with negative emotions such as fear of failure.[18]

Micro-credentialing could offer greater flexibility

Employer groups and other bodies have expressed the need for credentials that quickly deliver specific capabilities to workers who wish to reskill or upskill in a rapidly changing workforce over their lifetimes. There is a need for smaller, modular credentials that can be reconfigured and augmented to address emerging skill requirements in related or new (but compatible) occupations.[19] The Business Council of Australia states micro-credentials provide the best opportunity for skill and knowledge development for workers who have to adapt to rapid change.[20]

> **What are micro-credentials?**
>
> *A micro-credential is a certification of assessed skills and knowledge that aims to enable learners to access or demonstrate specific knowledge and skills in a cost-effective and time-efficient way. Micro-credentials are smaller than qualifications and may stand alone or be additional to, complementary to or a component part of a formal qualification*
>
> **Based on definition used by the New Zealand Qualifications Authority**

Some micro-credentials may take the form of skill sets defined within a training package, while others may be specific to an individual learner. The key to the success of micro-credentials is that the learner and business remain in control of the content. Micro-credentials could complement the current qualifications framework but would not seek to replicate it.[21]

A recent review of SACE Stage 2 by the South Australian government recommended exploring the use of micro-credentials to accredit clusters of skills from different certificates to form 'pathways' for students. They recommended exploring micro-credentialing for the small units of learning undertaken by students, particularly by those students achieving lower grades, or at risk of not completing their SACE, and those involved Flexible Learning Options.[22]

The challenge with micro-credentials is the need for a consistent quality assurance requirement so they can be validated. This could include a summative assessment, a means of verification, learning outcomes prescribed by the crediting institution, a minimum volume of learning, a specified purpose as to how it could be used, and a verifiable internal or external quality assurance process.

Micro-credentials could be used in senior secondary schooling to demonstrate learning achievements, to count as credits towards the SSCE, or as recognition of prior learning for entry into tertiary education.

Essential skills, values and knowledge

Many studies seek to identify the skills and knowledge essential for success in future study and work. While there is different terminology used across these studies, there are some common themes:

- Being job ready requires a range of values, behaviours and general skills, as well as specific technical skills and subject knowledge.[23]
- Skills that will become prominent include technology design and programming, complex problem solving, and systems analysis and evaluation. Demand for manual skills will decline.[24]

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[18] Anderson, M., Hinz, V., Matus, M., 207, *The Paradigm Shifters: Entrepreneurial Learning in Schools, Research Report, November 2017,* Mitchell Institute, pp. 11-12
[19] Healy, J. et al (2017) *The Future of Work in Australia: Anticipating how new technologies will reshape labour markets, occupations and skill requirements*, New South Wales Department of Education, p. 42
[20] Business Council of Australia (2018) *Future-Proof: Australia's future post-secondary education and skills system*, BCA, Melbourne, p. 42
[21] Business Council of Australia (2018) *Future-Proof: Australia's future post-secondary education and skills system*, BCA, Melbourne, p. 42
[22] Government of South Australia (2018) *SACE Stage 2 Review*, South Australia, p. 22
[23] Business Council of Australia (2016) *Being Work Ready: a guide to what employers want*, BCA, Melbourne.
[24] World Economic Forum (2018) *The Future of Jobs Report 2018*, World Economic Forum, Geneva, Switzerland, p. 12

- As technology reduces the need for workers to complete routine manual tasks, they will spend more time focusing on people, solving more strategic problems and thinking creatively.[25]
- The demand for transferable enterprise skills is on the rise and these skills are a powerful predictor of long term job success.[26]

Figure 5 below distils these themes into the skills, values and behaviours seen as essential by students, systems and employers.

Figure 5: What students, employers and systems see as essential skills[27]
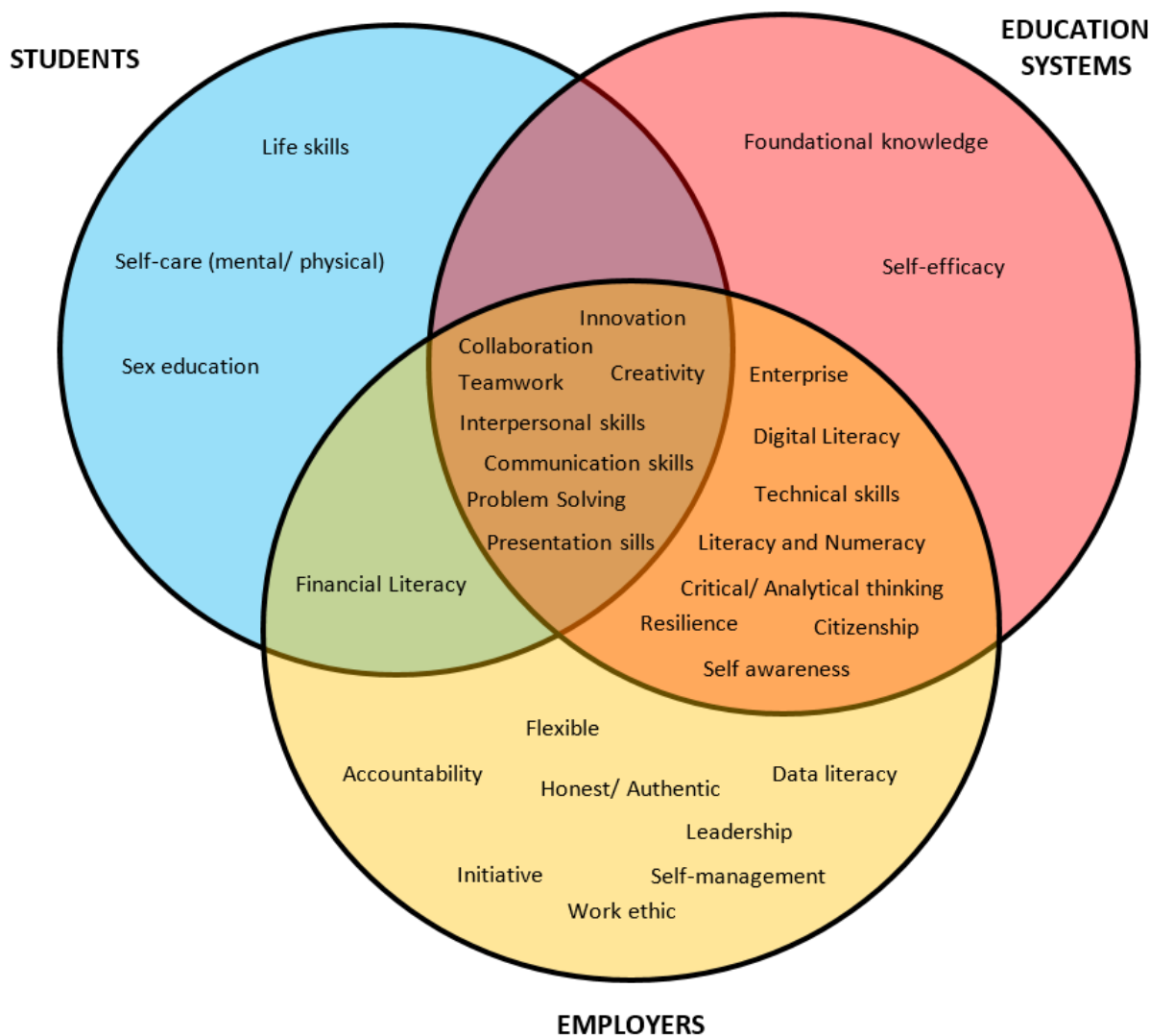
As Figure 5 shows, while there is a common core of necessary skills agreed across all groups, there is some divergence of views between students, systems and employers. Education systems and employers tend to share views in most areas. Students appear to place more of a premium on factors relating to life skills and self-care, while employers are particularly strong on the importance of desirable workplace behaviours.

[25] Foundation for Young Australians (2017) *the New WorkSmarts: Thriving in the New Work Order*, FYA, Melbourne, p. 3
[26] Foundation for Young Australians (2018) *the New Work Reality*, FYA, Melbourne, p. 19
[27] Business Council of Australia (2016) *Being Work Ready: a guide to what employers want*, BCA, Melbourne;
Shipley, B. and Stubley, W. (2018) *After the ATAR II: Understanding how Gen Z make decisions about their future,* Year13, Australia;
Australian Qualifications Framework Council (2013) *Australian Qualifications Framework Second Edition January 2013*, South Australia;
Foundation for Young Australians (2017) *The New Basics: Big data reveals the skills young people need for the New Work Order*, FYA, Melbourne, p. 8; Australian Industry and Skills Committee (2019), *National Industry Insights Report, 2018/19 National Overview*, p. 27
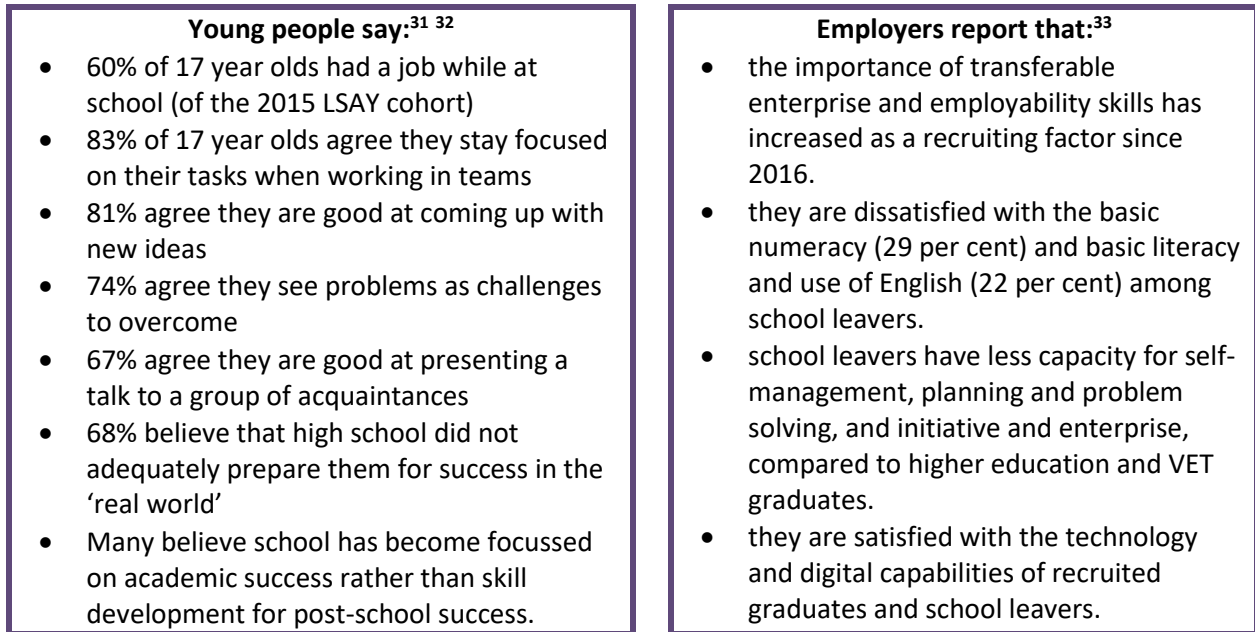Lambert, P. (2017) *Hard focus on 'soft' skills- future frontiers background paper* as cited in Randall, R.(2019) ACER Research Conference Proceedings August 2019, *21st-century skills: Realising the potential of the Australian Curriculum,* Australian Council for Educational Research (ACER), Melbourne; NCVER (2019) Longitudinal Survey of Australian Youth (LSAY), *Generation Z: Life at 17,* Commonwealth of Australia.

The student surveys summarised in Figure 6 indicate students themselves believe they have good skills in areas such as working in teams, coming up with new ideas, problem solving, and presenting to groups.[28] However, the Foundation for Young Australians notes that Australia's 15 year olds demonstrate low proficiency in problem solving (35 per cent), digital literacy (27 per cent) and financial literacy (29 per cent).[29]

Although employers have identified a number of areas in which they do not believe graduates and school leavers are well prepared, satisfaction levels have tended to climb in the years since 2016. Satisfaction levels are highest regarding higher education graduates, followed by VET graduates, and lowest for school leaver applicants.[30]

Figure 6: Are school leavers prepared for work?

Young people say:[31] [32]	Employers report that:[33]
60% of 17 year olds had a job while at school (of the 2015 LSAY cohort) 83% of 17 year olds agree they stay focused on their tasks when working in teams 81% agree they are good at coming up with new ideas 74% agree they see problems as challenges to overcome 67% agree they are good at presenting a talk to a group of acquaintances 68% believe that high school did not adequately prepare them for success in the 'real world' - Many believe school has become focussed on academic success rather than skill development for post-school success.	- the importance of transferable enterprise and employability skills has increased as a recruiting factor since 2016. - they are dissatisfied with the basic numeracy (29 per cent) and basic literacy and use of English (22 per cent) among school leavers. - school leavers have less capacity for self-management, planning and problem solving, and initiative and enterprise, compared to higher education and VET graduates. - they are satisfied with the technology and digital capabilities of recruited graduates and school leavers.

If there is broad agreement on the essential skills, values and behaviours necessary for future success, the next question is who is responsible? Schools, students themselves as well as parents, employers and systems all play different roles in ensuring young people develop the skills they need to succeed in life.

Schools and systems may need to build changes and flexibility into their offerings, and undertake initiatives such as curriculum redevelopment, innovation in teaching methods, investing in teacher development, partnering with employers, and considering live labour market data. [34]

Employers are increasingly recognising the importance of forging links across all sectors, in order to ensure graduates and school leavers are coming out with the skills they need. Many employers indicate they plan to increase or establish links in the future with universities (38 per cent), VET providers (29 per cent) and secondary schools (23 per cent). [35]

Families and communities can be involved through teaching and role modelling essential skills, values and behaviours, while individuals can maximise their success by engaging fully in education and training, and seeking opportunities to develop and demonstrate these skills, such as work placements or employment opportunities.[36]

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[28] NCVER (2019) Longitudinal Survey of Australian Youth (LSAY), *Generation Z: Life at 17,* Commonwealth of Australia.

[29] Foundation for Young Australians (2017) *The new work mindset: 7 new job clusters to help young people navigate the new work order*, FYA, Melbourne, p. 3

[30] The Australian Industry Group (2018) *Skilling: A National Imperative, Survey report on Workforce Development Needs*, aiGroup, Australia, p. 5

[31] NCVER (2019) Longitudinal Survey of Australian Youth (LSAY), *Generation Z: Life at 17,* Commonwealth of Australia

[32] Shipley, B. and Stubley, W. (2018) *After the ATAR II: Understanding how Gen Z make decisions about their future,* Year13, Australia, p. 35

[33] The Australian Industry Group (2018) *Skilling: A National Imperative, Survey report on Workforce Development Needs*, aiGroup, Australia, p. 5; p. 17

[34] Foundation for Young Australians (2017) *The New Basics: Big data reveals the skills young people need for the New Work Order*, FYA, Melbourne, p. 8

[35] The Australian Industry Group (2018) *Skilling: A National Imperative, Survey report on Workforce Development Needs*, aiGroup, Australia, p. 29

[36] Business Council of Australia (2016) *Being Work Ready: a guide to what employers want*, BCA, Melbourne.

Learning pathways within schooling

Students can choose from a wide range of subjects to make up their senior secondary certificate of education. These choices commence well before the senior secondary years and can be limited by issues like school size, timetabling and availability of qualified teachers. For some students the decisions can be particularly challenging if they do not have a clear career goal in mind.

Pathway choices start well before senior secondary school

Schools play a key role in developing learning pathways for students that facilitate access to further study and employment. Senior secondary school in particular is a time when young people test, explore and develop their interests,[37] and should therefore be supported to make decisions about future career pathways. But there is mounting evidence that career exploration needs to begin early in secondary school, if not before, while students are still forming their sense of identity, their beliefs about work and their ideas about their own future possibilities.[38]

Research on incorporating career education in the Australian Curriculum, conducted by Ithaca Group in 2018, noted that students can unwittingly narrow their pathways choices if career awareness and explorations aren't undertaken until Years 9 and 10. [39]

Making more targeted learning pathway decisions earlier in their educational journeys could help to avoid the stress many students feel at having to make big decisions about their future within a relatively short timeframe. It may also assist students who are certain in their career choices from an early age to create solid academic and experiential foundations on which to base their future decisions.

However, asking students to specialise earlier in their learning journeys may also deny them experience in fields in which they may excel, or send them down paths they may not have aptitude for in the long run. It could also hinder the development of generalist capabilities, which are becoming increasingly important given young people are likely to make more than one career transition within their lifetime.

Some researchers argue that a growing disconnect between some young people's aspirations and the academic school curriculum is widening gaps between school, training and employment, and fuelling disengagement from school, leading to even greater difficulties in post school transition.[40] This is particularly true for students who are unsure of their future career, as they have been found to have less access to career education opportunities, and express less satisfaction with the diversity of elective subject choices.[41]

In Australia, students are required to make subject choices in Year 10 for the following year based on the number of credits they need to be awarded a senior secondary certificate of education (SSCE). Subjects studied in the senior secondary years have significant influence on the educational and career options available to young people after school.[42]

The challenge for students is in choosing the subjects that may be most beneficial for their chosen pathway; or for students who do not have a chosen pathway, choosing the subjects that align with their skills and interests and would be most beneficial for any future pathways. The challenge for schools is to support students to make these decisions, and align their curricula and program requirements to support and facilitate learning pathways and transitions that lead to successful study and employment outcomes.[43]

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[37] Torii, K. and O'Connell, M. (2017) *Preparing Young People for the Future of Work*, Mitchell Institute Policy Paper No. 01/2017, Mitchell Institute, Melbourne, p. 15

[38] Education Council (2014), *Preparing secondary students for work, A framework for vocational learning and VET delivered to secondary students*, p. 6

[39] Ithaca Group (2019) *Future Ready: Research on incorporating career education in the Australian Curriculum*, Australian Government Department of Education and Training, Australia, p. 7

[40] Graham, L. et al (2015), 'To educate you to be smart: Disaffected students and the purpose of school in the (not so clever) 'lucky country'', *Journal of Education Policy*, 30(2), pp. 237-257, cited in Galliott, N. and Graham, L. (2015) 'School based experiences as contributors to career decision making: findings from a cross-sectional survey of high-school students', *The Australian Educational Researcher*, 42(2), pp. 179-199, p. 180

[41] Galliott, N. and Graham, L. (2015) 'School based experiences as contributors to career decision making: findings from a cross-sectional survey of high-school students', *The Australian Educational Researcher*, 42(2), pp. 179-199, p. 196

[42] Department of Education, *15 going on 25: Insights from the Longitudinal Surveys of Australian Youth (LSAY)*, Unpublished, Australian Government.

[43] Kazis, R. (2016) *MDRC Research on Career Pathways. Issue Brief*, MDRC, New York, pp. 6-7

> **The New Zealand experience - Subject matcher and colour coding**
>
> In New Zealand, Vocational Pathways are divided into six broad sectors, each with a unique colour code.
>
> The senior secondary curriculum also uses these colour coded vocational streams within the curriculum, to map aligned subject offerings.
>
> An online Subject Matcher then provides students with additional tools to help them see how the subjects they choose to study can influence their future job options, get job ideas based on the subjects they enjoy or are interested in, or see how subjects apply to a range of jobs.[44]
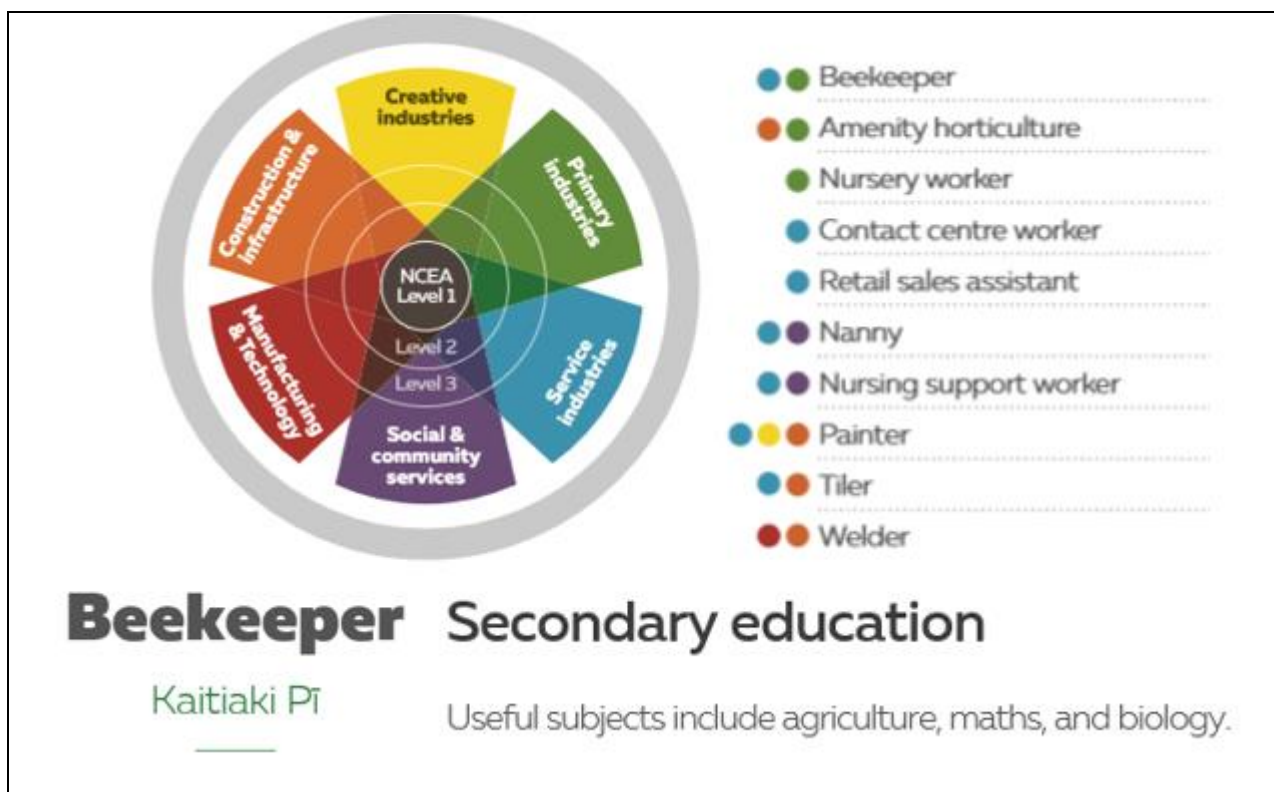
Vocational education and training in schools

Secondary schools across Australia have been offering VET to students for decades, providing a pathway into the VET sector and improving student engagement with schools. In 2017, 28 per cent of all 15-19 year old students were undertaking some form of VET.

More than 90 per cent of schools now offer VET in Years 11 and 12, and VET is recognised in all state and territory Senior Secondary Certificates of Education (SSCE). Completion of VET provides credits towards both a recognised VET qualification and a SSCE within the Australian Qualifications Framework (AQF). The amount and type of VET that is credited towards a SSCE varies across jurisdictions, with most state and territory certification authorities making some differentiation in the level of VET recognised in their respective SSCE.

Competency based training and capabilities

Competency in relation to VET can be described as the ability to perform particular tasks and duties to the standard of performance expected in the workplace. Competency requires the application of specified skills, knowledge and attitudes relevant to effective participation in an industry, industry sector or enterprise.[45]

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[44]Careers New Zealand, Jobs Database, www.careers.govt.nz. accessed 30/08/19;
Careers New Zealand, *How to choose NCEA subjects*, https://www.careers.govt.nz/courses/secondary-school-study-and-training-options/how-to-choose-ncea-subjects/, accessed 30/08/19.
Careers New Zealand (2016), *Where to From School? Make your way to employment through education and training*, New Zealand Government.
[45] Training.gov.au, *Competency standards, accessed 13/09/2019*

In the Australian Curriculum, capability encompasses knowledge, skills, behaviours and dispositions. Students develop capability when they apply knowledge and skills confidently, effectively and appropriately in complex and changing circumstances, in their learning at school and in their lives outside school.[46]

Competency based training is often criticised for its occupational focus which is considered too narrow.[47] However, a recent analysis of a selection of VET training packages delivered to secondary students found many examples of competencies and content being delivered to secondary students undertaking VET that would enable them to also develop non-technical skills.[48]

> ### *Strengthening Skills: Expert Review of Australia's Vocational Education and Training System*
>
> In 2019, the Honourable Steven Joyce, former New Zealand Minister for Tertiary Education delivered the final report of the Expert Review of VET in Australia.
>
> Chapter 7 of the report is dedicated to *clearer senior school pathways* and makes a number of recommendations for VET delivered to secondary students, including: better funding; strengthening links between schools and industry; ensuring all student VET programs have a clear pathway to actual vocational careers; introducing a student identifier; and ensuring school VET programs are regulated in the same manner as all other VET.
>
> The report also identified the need for clearer and more reliable career information to support Australians to make education and career decisions and recommended the creation of a National Careers Institute. The Institute, currently being established, will work with states and territories to develop a series of vocational pathways that link to senior secondary subjects so students can make informed choices about vocational study options.

All states and territories have introduced reforms to increase the number of students who participate in VET and vocational learning. Alongside examples of success, concerns have been raised about the quality and outcomes of VET delivered to secondary students in a number of recent reviews.[49] In particular, some stakeholders argued that many school students' VET certificates are not valued by industry and therefore do not provide a pathway to a job. Inconsistent approaches towards quality assurance may have the potential to damage public confidence in VET delivered to secondary students.[50]

> *"Currently, [VET in Schools] does not offer adequate pathways into secure quality sustainable employment once students finish their courses and leave secondary school. This is because the qualifications typically undertaken by school students do not provide sufficient training or skills to meet the needs and expectations of industry and employers."*
>
> **The Smith Family submission to the VET Review, page 7**
>
> Source: *Strengthening Skills: Expert Review of Australia's Vocational Education and Training System*

In addition to perceptions around quality, there are often barriers to secondary students participating in VET, including a lack of flexibility in school timetabling to attend VET training, geographic isolation, and schools trying to balance limited resources between the delivery of VET and the school curriculum.[51]

There are also barriers to accessing qualified teachers and trainers to deliver VET in secondary schools. State and territory regulations around who can teach in schools, can preclude RTO trainers from

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[46] Australian Curriculum, *General capabilities*, Australian Curriculum Assessment and Reporting Authority, accessed 13/09/2019, https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/

[47] Hodge, S., (2-018), *The Problematic Role of CBT in VET*, The University of Melbourne, P. 6

[48] Misko, J., Ackehurst, M., Polvere, R., Erzinger, T., Korvel, P., (2019) *VET for secondary school students: acquiring an array of technical and non-technical skills*, National Centre for Vocational Education Research, P. 4

[49] Joyce, S., 2019, *Strengthening Skills: Expert Review of Australia's Vocational Education and Training System*, March 2019, Halsey, J. (2018), *Independent Review into Regional, Rural and Remote Education- Final Report*, Australian Government Department of Education and Training,.

[50] Joyce, S., 2019, *Strengthening Skills: Expert Review of Australia's Vocational Education and Training System*, March 2019, p. 91 and 93

[51] Department of Education, South Australia, 2019, *A Review of VET for School Students*, June 2019, pp. 8 and 12

delivering training in schools, and VET systems requirements for trainers to have current industry expertise can mean teachers are not qualified to deliver VET.[52]

> *"School students who indicated VET participation reported a diverse range of post-school plans, covering university study as well as vocational training and employment. Conversely, students without experience of VET at school focused more exclusively on university with very few planning to pursue alternative options."*
>
> **Mission Australia, Learning the Job: Insights into Youth education and employment from the Youth Survey 2016**

Work-based learning and industry partnerships

Work based learning is 'hands-on' learning that occurs in a work environment. [53] School-industry partnerships are necessary to facilitate work-based learning through participation in work practice and process, and is integral to VET.[54]

The 2010 Longitudinal Survey of Australian Youth found close to 80 per cent of respondents from the Year 2003 cohort felt work experience or on-the-job training would have been helpful for planning post-school pathways, as would more information about future study options.[55]

Students, schools and business can all benefit from school-industry partnerships. Students benefit through enhanced career aspirations, work readiness and skills development; schools benefit through opportunities to offer innovative curriculum delivery and improved student engagement and retention; and business benefits through developing young people who may become potential employees.[56]

Most states and territories offer work exploration short courses that can be completed as part of the SSCE. In some instances, these courses are considered 'recreational' and do not count towards the SSCE. Where they do count, the amount of credit provided by work placements towards SSCEs is variable across jurisdictions.[57]

What do students know about their options?

Students often start senior secondary schooling with little understanding about the pathways available to them and the variety of entry points for those pathways. They often feel if they do not make the right choice, doors may be closed to them. With parents the biggest source of career advice for young people, it is crucial that students, parents and those who provide careers advice are better informed about today's labour market to assist students to make informed choices.

Results from student surveys at Figure 7, tell us that 49 per cent of students have a good to strong understanding of the university pathway, but only around 16 per cent of students, on average, have a good to strong understanding of other pathways such as VET, apprenticeships and traineeships.[58]

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[52] Education Council, 2014, *Preparing Secondary Students for Work – A framework for vocational learning and VET delivered to secondary students*, page 18

[53] Group Training Australia, May 2014, *The views of employers, students and parents, Work Exposure and Work Placement Programs in Schools involving Group Training Organisations*, pp. 8 and 13

[54] Atkinson, G., National Centre for Vocational Education and Research, 2016, *Work-based learning and work-integrated learning: fostering engagement with employers*, p. 2

[55] Department of Education and Training, internal publication, *When I grow up: Planning for the future* – LSAY in focus, 2018 (unpublished)

[56] Ulmer, M., National Australia Bank, 2011, Business-School Connections Roundtable, *Realising Potential: Business Helping Schools to Develop Australia's Future*, p. 12

[57] Australian Curriculum, Assessment and Certification Authorities (ACACA), 2017, *VET in Senior Secondary Certificates of Education*

[58] Shipley, B. and Stubley, W. (2018) *After the ATAR II: Understanding how Gen Z make decisions about their future*, Year13, Australia, p. 38

Figure 7: How well do students understand pathways?

How well do you feel you understand these pathways?
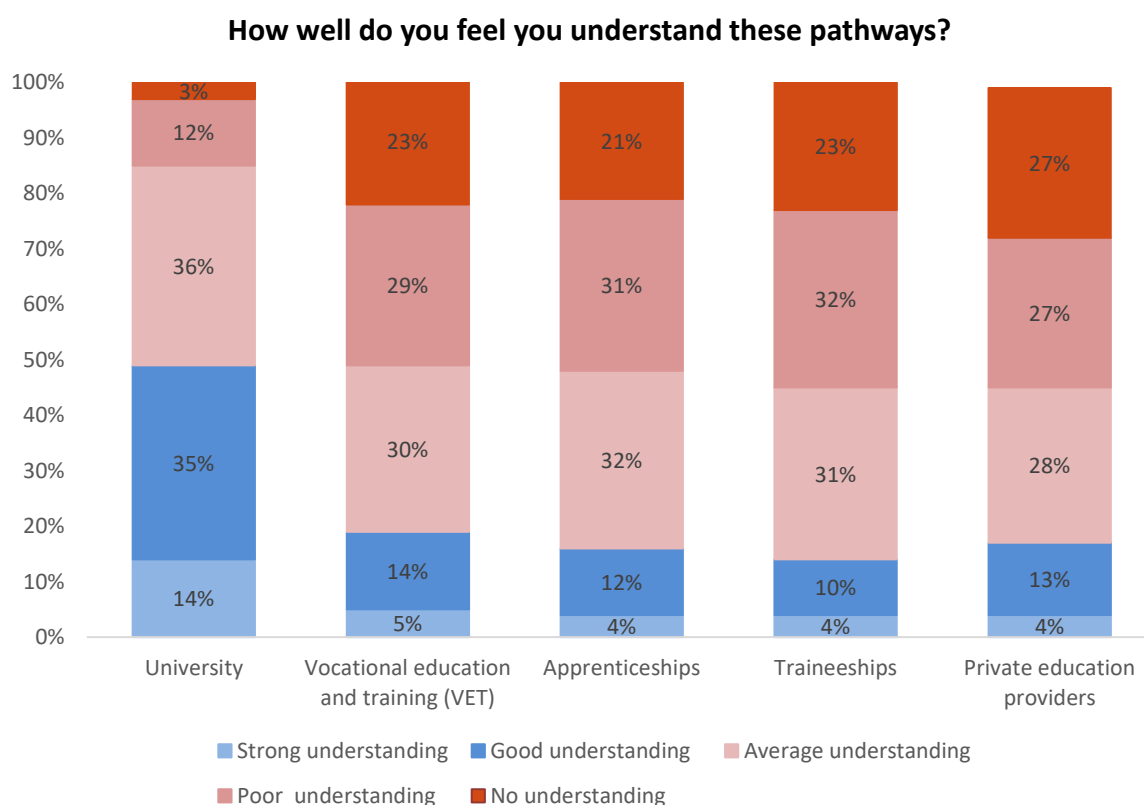
Source: Shipley, B. and Stubley,W. (2018) *After the ATAR II: Understanding how Gen Z make decisions about their future,* Year13, Australia

Consequently, some young people feel they do not have the information they need to set and meet their post-school goals. A 2018 survey of Australian youth aged 15-24 undertaken by Year13 showed that 76 per cent of young people wanted more personalised career advice.[59]

Career education

As the expectations of employers evolve, young people will need to know what to study to match their career ambitions to the demand for skills, and be exposed to how recruitment processes and contemporary workplaces operate.[60] To be effective, school-based career guidance must be responsive to both the current labour market and the skill needs of the future.

The provision of career education across states and territories varies, but can include mandated career planning in Year 10 that provides credits towards the SSCE, access to qualified career counsellors, dedicated careers advice websites and career education short courses that can be completed as part of the SSCE. In addition, many states and territories have their own websites with careers guidance, labour market information and education and training options.

Career education is a key part of senior secondary schooling as it prepares students for the transition into employment. In many senior secondary schools, however, career education reflects old paradigms of work. It predominantly focuses on identifying a linear pathway that allows students to pursue a single career or profession. It can be transactional, asking students to select specific subjects and courses, rather than encouraging them to take a broader career outlook. In a world where traditional employment models and occupations are rapidly evolving, narrow career education is unnecessarily limiting the employment potential of senior students.[61]

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[59] Shipley, B. and Stubley, W. (2018) *After the ATAR II: Understanding how Gen Z make decisions about their future,* Year13, Australia, p. 37
[60] Education Endowment Foundation, *Employer engagement in education: Insights from international evidence for effective practice and future research*, 2018. P. 6
[61] PricewaterhouseCoopers (2017) *Career and skills pathways: Research into a whole-of-system approach to enhancing lifelong career support mechanisms for all Australians (Final Report),* PwC, p. 51.

Parents and Carers

A recent survey found that 48 per cent of young people get their most trusted career advice from parents/carers. It is becoming increasingly important for parents to also receive well-informed career advice so they can have the most effective career conversations with young people in their care.

Figure 8: Where do young people get their career advice from?
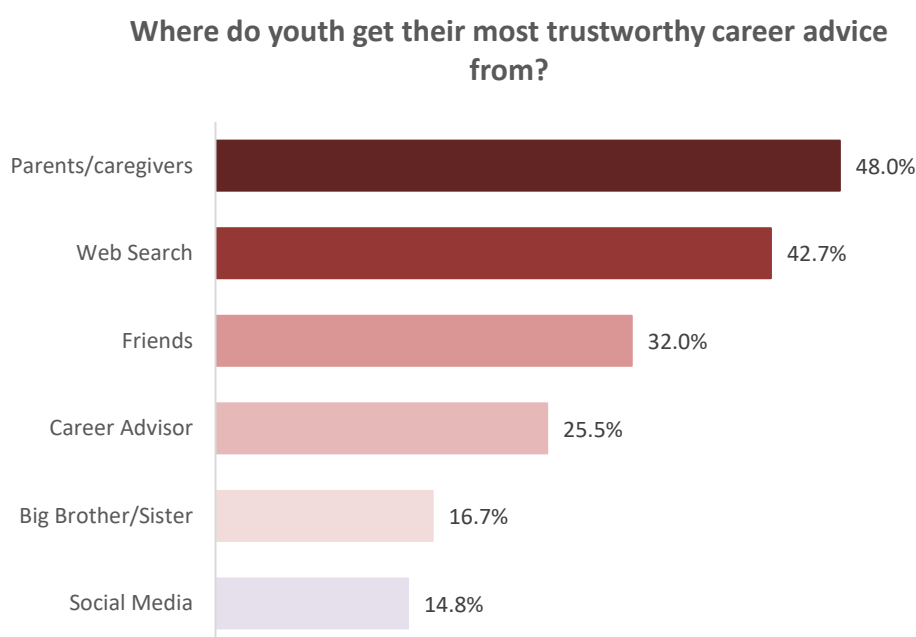
Where do youth get their most trustworthy career advice from?

Source: Year13, YouthSense, *After the ATAR, Understanding How Gen Z Transition into further education and employment*, 2017

There is a persistent tendency, however, for many parents, students and schools to view VET as a much less prestigious and valuable pathway, compared to the academic pathway that leads to university. In a 2017 survey, Year13 asked Australian parents which career option they felt was best for their child. After following a passion (43 per cent), 32 per cent of parents believed higher education to be the best career option for their child. Vocational education (7 per cent), apprenticeships and traineeships (6 per cent), and entering the workforce (3 per cent) all had significantly lower support than university.[62]

The Internet

Governments, state and territory agencies, and private organisations publish a large amount of information about the labour market, future job projections, training pathways, and training providers across an assortment of websites.

The Productivity Commission has highlighted the 'burgeoning number of websites to assist people….carries with it the risk of a confusing maze of information'.[63]

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[62] Shipley, B. and Stubley, W. (2018) *After the ATAR II: Understanding how Gen Z make decisions about their future,* Year13, Australia, p. 39
[63] Productivity Commission, 2017, *Shifting the Dial: 5 Year Productivity Review, Report No. 84*, p 116.

There is a growing acknowledgement around the importance of providing clear career advice to young people, and work is underway in a range of areas to address this.

In 2019, *Future Ready: A student focused National Career Education Strategy* was endorsed by all education ministers. Future Ready focuses on developing students' career management and navigation skills. The vision of Future Ready is that every student in every school has access to high-quality career education that meets their needs, to help them make a successful transition from school to further education, training, work or a combination of these. The strategy promotes building teacher and school leader capability, supporting parents and carers in career conversations, and encouraging collaboration between industry and schools.

To bring the strategy to life, a number of projects supported by the Australian Government have commenced with state and territory education departments, business and industry and career education groups.

National Career Institute

In 2019, *Strengthening Skills: Expert Review of Australia's Vocational Education and Training System* recommended establishing a National Career Institute. The Institute was established on 1 July 2019.

The Institute will improve the quality of career development and resolve a significant amount of fragmented and difficult to use career information and services available to all Australians.

The Institute will work with states and territories in 2019-20 to undertake a number of activities designed with the guiding principle of enabling all Australians to make more informed career decisions at all stages of their lifelong learning.

Post-school pathways

Pathway Options

Young people of today will have access to a variety of pathways and must be enabled to transition between them over their lifetime. Young people can enter these pathways during, straight after leaving senior secondary school, or at later life stages for early school leavers. Schools play an important role in preparing students to select, transition to, and access these different pathways.

School to work pathways

The National Centre for Vocational Education Research (NCVER) recently released a report, *School to work pathways* that explored the school-to-work transitions of youth aged 16 to 25 based on the 2006 cohort of the Longitudinal Surveys of Australian Youth (LSAY Y06).

The study found young people experience diverse and individualised school-to-work pathways. The study identified five key pathways:

> Pathway 1: Higher education and work – 60 per cent the sample
> Pathway 2: Early entry through VET to full-time work – 23 per cent of the sample
> Pathway 3: Mix of higher education and VET – 8 per cent of the sample
> Pathway 4: Mixed and repeatedly disengaged – 5 per cent of the sample
> Pathway 5: Mostly working part-time – 4 per cent of the sample

Source: Ranasinghe, R., Chew, E., Knight, G., Siekmann, G., 2019, *School-to-work* pathways, National Centre for Vocational Education Research.
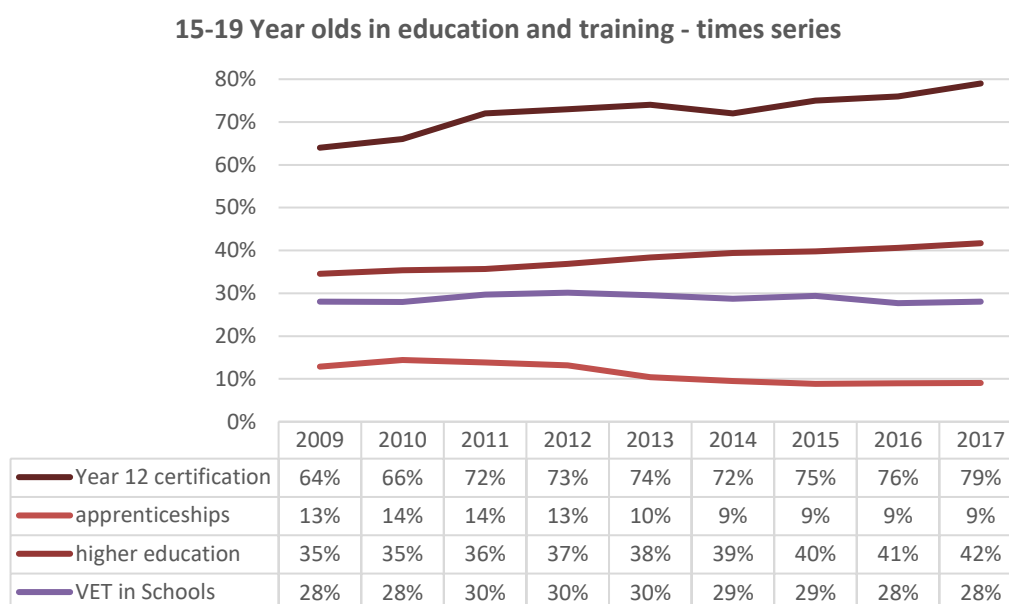

Further analysis showed:

- **Pathway 1 -** had extended periods of higher education post-school followed by employment.

- **Pathway 2 -** VET provided an early pathway to work, resulting in 97.4 per cent of these young people in work at age 25 years, the highest proportion of any of the pathways. For many respondents it is likely that training extended beyond the early post-school years, in combination with full-time work as part of an apprenticeship or traineeship. Apprenticeships/traineeships were undertaken by almost half, with the highest occupation group at age 25 in technical and trades.

- **Pathway 3 –** had an extended period of higher education or VET activity leading to more stable employment or further VET activity.

- **Pathway 4 –** had many transitions, with repeated labour market disengagement.

- **Pathway 5 -** experienced relatively early entry to the labour market and were mostly employed part-time.

The last decade has seen an increase in Year 12 completion rates (due to the introduction of the *Compact for Young Australians* in 2010 and higher education enrolments (partly due to the introduction of uncapped places in 2012), while VET in schools enrolments have plateaued and apprenticeship commencements have decreased, as shown in Figure 9 below.[64]

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[64] National Centre for Vocational Education Research, *Young people in education and training, 2009 - 2017*

Figure 9: 15-19 year olds in education and training by sector from 2009 to 2017

15-19 Year olds in education and training - times series

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Year 12 certification	64%	66%	72%	73%	74%	72%	75%	76%	79%
apprenticeships	13%	14%	14%	13%	10%	9%	9%	9%	9%
higher education	35%	35%	36%	37%	38%	39%	40%	41%	42%
VET in Schools	28%	28%	30%	30%	30%	29%	29%	28%	28%

Source: National Centre for Vocational Education Research, *Young people in education and training, 2009 – 2017*

While a large proportion of students do go on to study at university following Year 12, many enter the workforce, or undertake vocational education and training.

In 2017, eleven per cent of those who completed Year 12 the previous year were not enrolled in study or employed the year after leaving school.[65] Students who are not in work or study could be taking a gap year, looking for work, attempting to start their own business, taking on carer responsibilities or be otherwise disengaged.

Full and part time work

Over the last decade, the proportion of young people in full-time work has decreased, with higher rates of 24-year-olds working part-time. An increasing number of young people are also more likely to have more than one job when compared with 10 years ago, working in multiple jobs to reach full-time working hours. In addition, rates of underemployment are increasing, with more working young people either looking for additional work or wanting to work additional hours. Not enough work experience, lack of job opportunities and not enough of the right kind of education or training are the main barriers to securing work identified by 24 year olds.[66]

This is supported by other research, for example, 60 per cent of 17-year-olds who are part of the 2015 Longitudinal Survey of Australian Young cohort had a job while at school. They found working around five hours per week had a positive impact on post-school full-time employment, compared with not working at all.[67]

Young people aged 15-24 whose highest educational attainment is below Year 10, have the highest proportion of 'not engaged in study or employment' at 60.6 per cent. Young people age 15-24 whose highest educational attainment is a certificate III/IV qualification have the highest rates of full-time employment at 53.9 per cent, followed by a Bachelor degree of above at 46.7 per cent.[68]

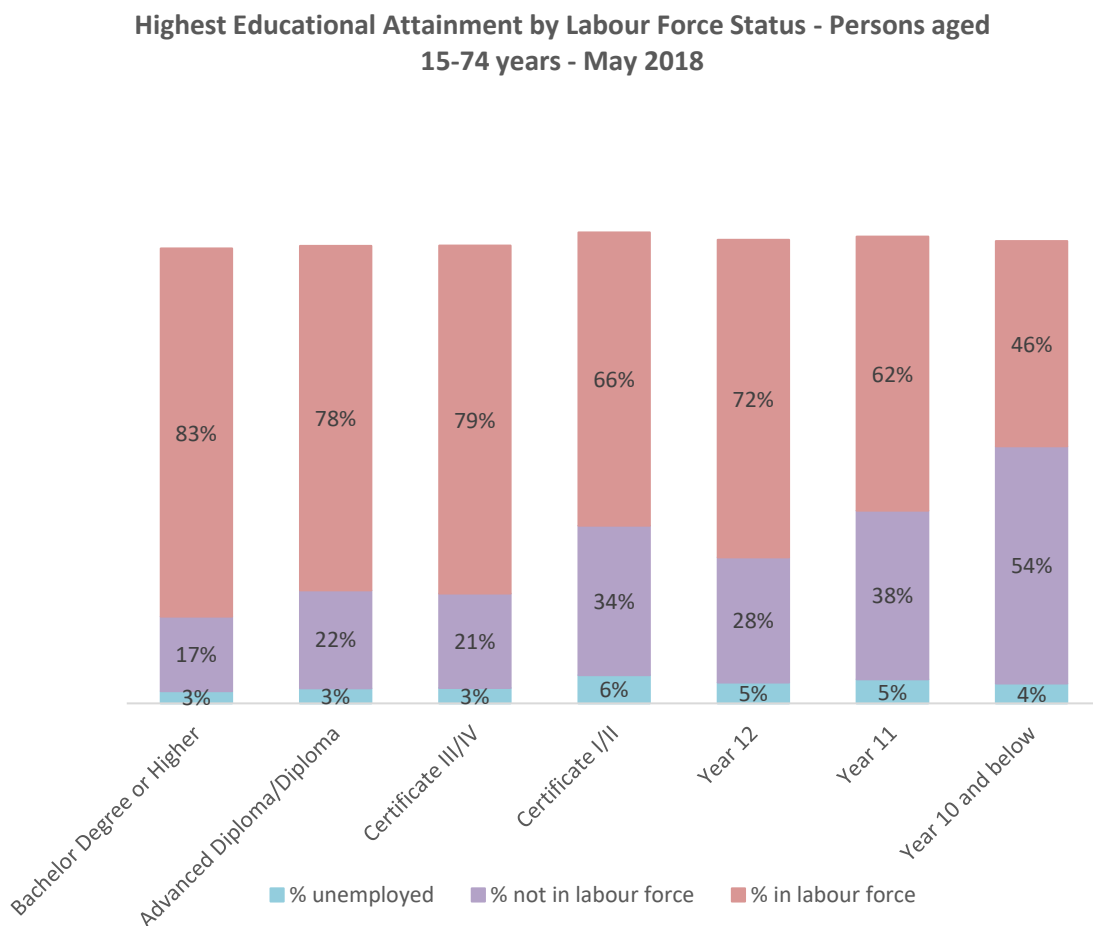[65] ABS Education and Work, Australia, May 2018, Table 17
[66] Longitudinal Survey of Australian Youth, 2019, *Life at 24, then plus now*, National Centre for Vocational Education Research
[67] Longitudinal Survey of Australian Youth, 2017, *Generation Z: Life after 17*, National Centre for Vocational Education Research
[68] Australian Bureau of Statistics (ABS), *Education and Work, Australia, May 2018*, Table 34

While the number of young people in the labour force with a tertiary qualification has substantially increased, participation in the labour force is heavily affected by educational attainment. Figure 10 below illustrates that 83 per cent of 15-74 year olds with a Bachelor Degree or Higher are in the labour force, compared to 46 per cent with Year 10 and below.

Figure 10: Unemployment and labour force participation rates by highest qualification level

Highest Educational Attainment by Labour Force Status - Persons aged 15-74 years - May 2018

Note:
The Education and Work Australia collection is a sample survey and may encounter sampling errors which may impact on the result of the statistics.
Source: Australian Bureau of Statistics*, 62270 - Education and Work Australia, May 2018, Table 10*

Disadvantaged cohorts are underrepresented in higher education, which could lead to a further increase in barriers to employment access. For example, the labour force participation rate in 2015 for people with disability aged 15 to 64 years was 53.4 per cent, considerably lower than for people without disability (83.2 per cent).[69] In 2018, however, rates of full-time employment, overall employment and labour force participation for regional and remote students were better than students from metropolitan areas.[70]

National and international research, shows that disadvantage factors such as low educational attainment or low socio-economic background lead to poorer labour market outcomes (compared to those who are better educated), increasing the risk of these cohorts becoming long-term unemployed and welfare dependent.[71] [72]

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[69] Australian Bureau of Statistics (ABS) *Disability, Ageing and Carers, Australia: First Results, 2015, Catalogue number 443.0.10.001* Canberra: Australian Bureau of Statistics, https://www.abs.gov.au/ausstats/abs@.nsf/mf/4430.0.10.001. Accessed 19/08/19.
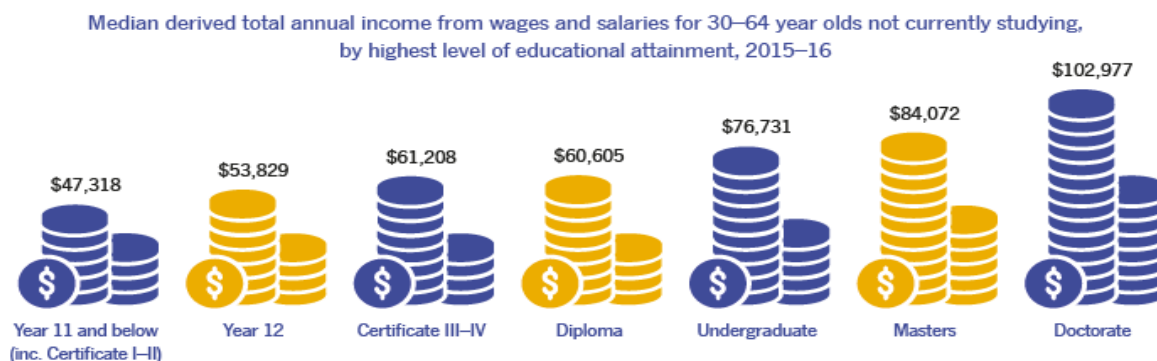[70] Social Research Centre (Firm) (2019) *2018 Graduate Outcomes Survey- National Report*, Australian Government, p. v
[71] Ranasinghe, R. et al. (2019), *School-to-Work Pathways*, National Centre for Vocational Education and Research (NCVER), p. 11
[72] McLachlan, R. et al (2013) *Deep and Persistent Disadvantage in Australia*, Productivity Commission, Canberra, p. 93

Educational attainment is also linked to earning potential over a lifetime, with earning capacity increasing as qualification levels increase, as demonstrated in Figure 11 below.

Figure 11: Total annual income by qualification level

Median derived total annual income from wages and salaries for 30–64 year olds not currently studying, by highest level of educational attainment, 2015–16

$47,318 — Year 11 and below (inc. Certificate I–II)
$53,829 — Year 12
$61,208 — Certificate III–IV
$60,605 — Diploma
$76,731 — Undergraduate
$84,072 — Masters
$102,977 — Doctorate

Source: Australian Government, Department of Education, *Benefits of Educational Attainment Project (BEAP)*

While university graduates over a lifetime have higher median derived annual income than non-university graduates, the median full time income for a VET graduate is $56,000 compared to the median graduate salary for students completing a Bachelor's degree at $54,000, with some VET graduates having the capacity to earn higher salaries than many Bachelor degree graduates.[73]

VET

A high quality VET system is essential for providing pathways to skilled employment in many industries, and to equip the workforce with the technical skills needed to drive economic growth, particularly when a university education is not a good fit for all young people, and not necessary for all jobs.[74]

It is essential to consider the cost difference VET students face upfront compared to university bound peers. Access to low interest loans for university-bound students is in stark contrast to the limited number of loans available for VET students and only for specific qualifications. Many VET students incur large upfront fees which can ultimately impact on their decision to progress with the VET qualification.

There is a persistent tendency for many parents, students and schools to view VET as a much less prestigious and valuable pathway, compared to the academic pathway that leads to university. This can unfairly stigmatise young people undertaking vocational qualifications, and can lead to young people pursuing an ATAR instead of a pathway that may suit their interests and learning needs better.[75]

Post-school participation and success in VET for disadvantaged students can be uneven. Recent studies have indicated some reasons for this variation including regional factors such as industry profiles, employment, provision, population characteristics, and types of learners; as well as broader factors such as flexibility, support structures, community partnerships, and the policies and practices employed.[76]

With the exception of remote and regional students, disadvantaged VET graduates improve their employment status to a lesser extent than VET graduates overall, as illustrated in Figure 12 below.[77] This is supported by research showing positive employment outcomes are more likely for those who study higher-level VET qualifications, with disadvantaged learners more likely to enrol in lower-level VET qualifications as an entry point to further education.[78]

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[73] Skilling Australia Foundation and McCrindle, (2017) *Perceptions Are Not Reality: myths, realities & the critical role of vocational education & training in Australia,* P. 5
[74] Torii, K., O'Connell, M., 2017, *Preparing young people for the future of work*, Mitchell Institute, March 2017, p.9
[75] Torii, K., O'Connell, M., 2017, *Preparing young people for the future of work*, Mitchell Institute, March 2017, p.16
[76] Lamb, S. et al (2018) *Improving participation and success in VET for disadvantaged learners*, National Centre for Vocational Education Research (NCVER) Adelaide. pp 7-10
[77] NCVER, *Australian vocational education and training statistics: VET student outcomes, 2014-2018* https://www.ncver.edu.au/research-and-statistics/collections/student-outcomes/vet-student-outcomes, accessed 2019, Department of Education analysis.
[78] Griffin, T. (2014) *Disadvantaged learners and VET to higher education transitions*, NCVER, Adelaide, p. 3

Figure 12: Improved employment outcomes for VET graduates

Improved employment status of VET graduates (government-funded places) after training (%)
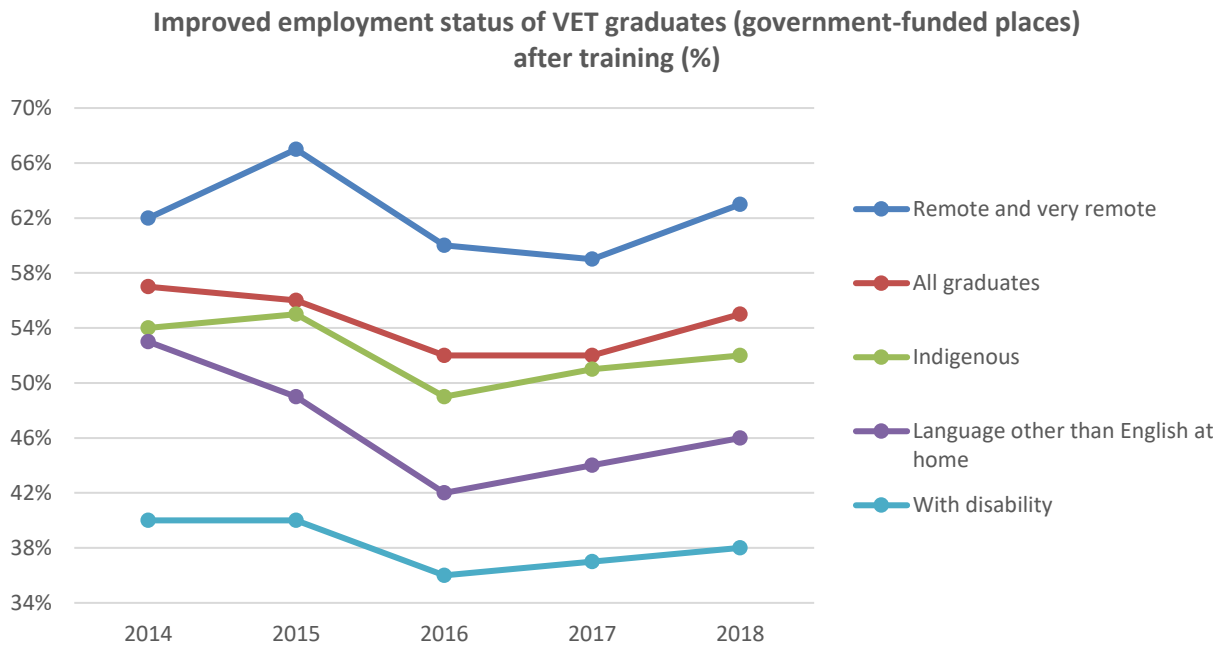
Note: improved employment status after training is at least one of:
1. change from note employed to employed
2. being employed at a higher skills level
3. receiving a job-related benefit

Source: NCVER, government-funded student outcomes - graduates, Vocstats, accessed 17/09/2019
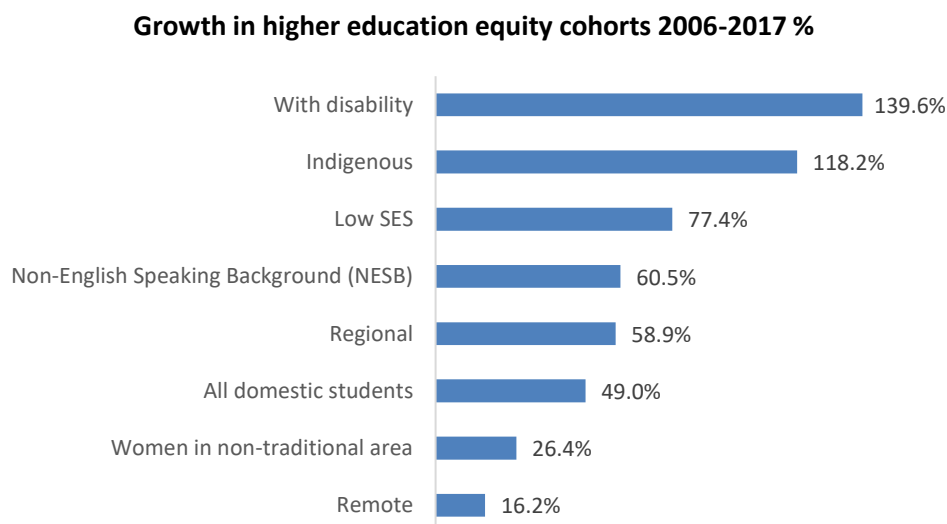
Higher Education

Australia's labour market has an increasing requirement for professional knowledge workers. This trend correlates with the increase and ongoing growth in university enrolments as higher education is becoming a standard prerequisite to enter the labour market.

Higher education, while viewed as a prestigious pathway, may not suit the needs of all young people. This is supported by recent research which estimates one in five students who start a bachelor degree will leave university without getting a degree, with one third of those students believing they received no benefits from their study. These students get no value for their time or money.[79]

Participation in higher education by all equity groups grew between 2006 and 2017, as illustrated in Figure 13.

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[79] Norton, A., Ittima, C., (2018), *Dropping out – The benefits and costs of trying university,* Grattan Institute, p. 3

Figure 13: Growth in higher education equity cohorts 2006-2017

Growth in higher education equity cohorts 2006-2017 %

Cohort	%
With disability	139.6%
Indigenous	118.2%
Low SES	77.4%
Non-English Speaking Background (NESB)	60.5%
Regional	58.9%
All domestic students	49.0%
Women in non-traditional area	26.4%
Remote	16.2%

Source: Australian Government, Department of Education, data extract

Students from disadvantaged groups are more likely to indicate university study as their preferred post-school option, but a large proportion instead enter a VET pathway,[80] meaning disadvantaged groups continue to be underrepresented in higher education despite aspirations. Once engaged in higher education, retention rates for low-SES, Aboriginal and Torres Strait Islander peoples, and regional or remote students also remain lower than other undergraduate peers,[81] suggesting that barriers remain for disadvantaged students regarding higher educational attainment.

Higher education data reveals that in general, lower attainment rates (at Bachelor level) are seen for those students who are Aboriginal and/or Torres Strait Islander, have lower socio-economic status, or come from a regional area of Australia.[82] However, disadvantaged students from low-SES, Aboriginal and Torres Strait Islander peoples, and regional or remote cohorts who did graduate from higher education achieved similar or better employment outcomes[83] than their non-disadvantaged peers.

Start ups

Entrepreneurs who start up a business make a big contribution to the economy. It is estimated that an increasing and significant percentage of the workforce will consist of freelancers, with individuals adapting to employment scarcity and creating their own income sources.[84]

Some state and territory schools already participate in start up initiatives in partnership with industry that are equipping young people with skills and knowledge to start up their own business.

Non-linear pathways

While the traditional pathways above can be easily categorised into work, further education and/or training, in reality, the pathways young people take may not be linear. Even those who do take a linear pathway directly after school, may need to go back to a different part of the education system to undertake additional training or learning as they progress through their careers. Young people need to be equipped to move in and out of all pathways along their life journey.

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[80] Nguyen, N. and Blomberg, D. (2014) *The role of aspirations in the educational and occupational choices of young people*, National Centre for Vocational Education Research (NCVER), Adelaide, p. 5
[81] Department of Education, *Selected Higher Education Statistics- 2017 Student Data, Appendix 5, Equity performance data.* Table 16.6. https://www.education.gov.au/selected-higher-education-statistics-2017-student-data, accessed 16/08/19
[82] Department of Education (2017) *Key Findings from the 'Completion Rates of Higher Education Students- Cohort Analysis, 2005-2015'*, Australian Government.
[83] Social Research Centre (Firm) (2018) *2018 Graduate Outcomes Survey- Longitudinal (GOS-L): medium-term graduate outcomes*, Australian Government, p. 8
[84] Australian Industry and Skills Committee, (2017), *Future skills and training: A practical resource to help identify future skills and training*, P. 12

Young people's learning pathways may include repeated cycles of engagement, disengagement, and re-engagement with a diversity of education sectors and providers at different points in their lives. The transition from school to the workforce can be distilled into a series of decisions that young people make, starting well before senior secondary schooling, regarding what they want and how they will achieve their goals as they get older.

Importantly, choosing to leave school early does not close off all options for gaining Year 12 certification or an equivalent. Early school leavers are able to access alternative programs and post-school pathways, some of which allow attainment of an equivalent certification with no break in education, while some can be entered at a later stage. These include VET courses (at certificate III level), apprenticeships or traineeships, and alternative programs run by external providers. It is critical that early school leavers, particularly those from disadvantaged backgrounds, are aware of their options to re-engage with education.

Arguably, the current construction of senior secondary certificates of education is clearest for students pursuing an academic post-school pathway. Given the growing diversity in post-school destinations and options for young people, it raises the question whether the current education system serves the needs of the many young people who do not directly go to university.[85]

Recent research has focused on the impact of gender on post-school pathways, for instance showing that for some young people VET may be a better option than higher education, particularly males who achieve low to mid ATAR scores. Males with low to mid ATAR scores may have better income prospects over their career if they undertake a VET course, for example, a Diploma of Engineering instead of a Bachelor degree in science. In contrast, women with low to mid ATAR scores who choose courses in nursing and teaching can have better employment outcomes from these Bachelor degree level qualifications.[86]

Entry requirements for post –school study

> There are many avenues and entry points for young people to access post-school pathways. Senior secondary schools are well placed to prepare young people to select, transition to, and access these different pathways.

There is growing concern that the current arrangements for certification and the entry requirements for further study are leading young people to make study choices that are not in line with developing the skills and knowledge they need to access the most appropriate pathway into work, further education and/or training.

The way subject credits are counted towards the SSCE varies across states and territories. All states and territories allow VET to count towards the SSCE, however the amount of credit varies, and whether the VET counts towards a student's ATAR also varies. In addition, states and territories may offer courses that incorporate workplace learning, opportunities for industry and community engagement, and career education. These subjects may be beneficial for students but are often considered recreational and do not count towards the SSCE.

As a result, students may be choosing subjects to maximise their ATAR rather than subjects that will give them the skills and knowledge needed for their particular pathway.

ATAR

The ATAR is a relative measure of a student's academic achievement at the end of their senior secondary schooling. It aims to provide a fair and equitable method of ranking and comparing the achievement of students who have completed different combinations of subjects, for the purpose of entry to university.

[85] Buchanan, J., et al (2018) *Preparing for the best and worst of times,* NSW Department of Education, Australia, p. 35
[86] Norton, A., Cherastidtham, I., and Mackey, W. (2019) *Risks and rewards: when is vocational education a good alternative to higher education?*, Grattan Institute, Australia, p. 53

The ATAR is not a mark, and it is not based on a consistent national method of assessment. Each state and territory tertiary entrance centre makes its own calculation of the ATAR. While the introduction of a demand-driven funding system for higher education has reduced the need to use ATAR as a rationing tool, the ATAR is still the dominant mechanism for senior secondary students entering university.

In 2017, of the 63.7 per cent of 17-21 year old university commencements with a status of senior secondary, 78.4 per cent commenced based on their ATAR.

Table 1: University commencements

Commencement – 17-21 year old domestic undergraduates with status of senior secondary- 2017	No. of students	%
Senior secondary	100,401	63.7%
Senior secondary commenced based on ATAR	78,736	78.4%
Total – 17-21 undergraduate domestic commencements	**157,685**	

Australian Government, Department of Education Higher Education Statistics Collection, 2017, unpublished.

While ATAR is generally seen as a 'fair' measure, this does not mean it is equitable, having a bias towards high socio-economic students.[87]

Criticisms of the ATAR include the potential for it to be over-emphasised in senior secondary schooling, with students and parents unaware of the range of other pathways open to them after school, and even alternative pathways into higher education.

> **Improving the Transparency of Higher Education Admissions**
>
> In 2016, the Higher Education Standards Panel provided options to improve the transparency of higher education student admissions policies, without significantly increasing regulation. In 2017, an Implementation Working Group was established to develop a joint higher education sector and government plan to implement the recommendations.
>
> The majority of the recommendations were implemented between 2017 and July 2019, with universities now required to use common language regarding admissions processes, make information more accessible to students, improve the comparability of information, and make universities more accountable for the admission information they publish, enabling users to more easily navigate the information.

Public misunderstanding of the ATAR contributes to the perception that it is an indicator of school and university quality, and may contribute to a narrower view of the goals of schooling. A national survey found 55 per cent of surveyed youth felt their school cared more about their ATAR than them, as illustrated in Figure 14 below.[88]

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[87] The Conversation, *Should we scrap the ATAR? What are the alternative options? Experts comment,* March 2016, p. 3
[88] Year13, YouthSense, *After the ATAR, Understanding How Gen Z Transition into further education and employment,* 2017, p. 17

Figure 14: Student perceptions of the ATAR

Do you think your school cares more about the ATAR than you as a student?

No 28%
Yes 55%
Don't know 17%
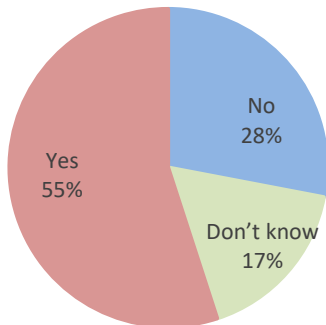
Did you pick easier subjects in high school because you knew they would help you achieve a higher ATAR?

Yes, all of them 2%
Yes, a few 10%
Yes, one or two 25%
No 63%
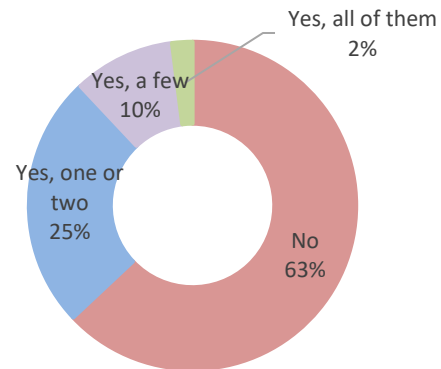
Source: Year13, 2017, After the ATAR, p. 17, Year 13, 2018, After the ATAR II, p. 34

In 2018, the STEM Partnerships Forum report highlighted concerns regarding a decline in the proportion of senior secondary students choosing advanced mathematics and science subjects. The report noted that students might be making such decisions based on an incorrect belief that taking less challenging subjects will help to maximise their ATAR. This is backed up by research from Year13 which found 37 per cent of young people picked easier subjects in high school because they knew it would help them achieve a higher ATAR. In addition, 76 per cent of young people felt the ATAR is not an accurate measure of a student's academic ability.[89]

The STEM Partnerships Forum report also noted that universities have moved away from specifying prerequisites for courses, replacing them with assumed knowledge statements. The report recommended that Education Council review how the senior secondary education system, including the ATAR, can incentivise students to study the most advanced and appropriate subjects.

Other Entry Options

The STEM Partnerships Forum, in 2018, recommended a broader examination of the senior secondary system and its interaction with university entrance requirements and prerequisites should be undertaken. This would ensure schools and students are receiving the right signals about the importance of taking on advanced and appropriate mathematics and science subjects to keep their post-school education and work options open and to maximise their chances of success in undergraduate courses and specialisations.[90]

The heavy focus on academia and the perceived significance of the ATAR is taking its toll on senior secondary students in a number of ways. Respondents to Year13's 2018 survey expressed the negative impact the ATAR had on their engagement levels at school, as well as their overall wellbeing and mental health.

> *"Many Year 12 students stress to get the best ATAR they can with no idea whether they want to go to university, but simply 'just in case'. The ATAR should be shown in school as a direct pathway to uni for those who wish to pursue it, rather than the norm for already stressed high school students."*
> **Female, 18, NSW**
> Source: Year13, YouthSense, *After the ATAR II, Understanding How Gen Z Make Decisions About Their Future*, 2018

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[89] Year13, YouthSense, *After the ATAR II, Understanding How Gen Z Make Decisions About Their Future*, 2018, pp 31 and 34
[90] STEM Partnership Forum, *Optimising STEM Industry-School Partnerships: Inspiring Australia's Next Generation,* April 2018. Pg. 28

Many institutions have developed a range of alternative pathways to attract school leaver applicants who may be able to demonstrate their readiness and capacity for higher education though evidence other than their ATAR (e.g. portfolios and auditions, vocational certificate or diploma qualifications, school recommendations) as well as equity-focused application processes. ATARs are combined with these other factors to derive an overall institution-specific selection rank to determine who is offered a place. While positive, the rapid growth of alternative admissions schemes has flow on effects for students and parents who have to navigate multiple admissions schemes at multiple universities.

Effective pathways for all students

At age 15, students' emotional and cognitive engagement with school is overwhelmingly driven by individual background characteristics, including having a high self-concept of ability. To remain engaged in school, students need to identify with their schooling outcomes, and have the desire and will to participate in school activities. To encourage engagement, schools need the flexibility to provide a variety of options for all students, particularly those at risk of disengaging.

Student engagement and wellbeing

Student engagement and wellbeing (measured in terms of students' participation and sense of belonging in school) are a precursor to cognitive and non-cognitive achievement. Student engagement and wellbeing are important not only because of their relationship with student learning, but also because they represent a disposition towards schooling and life-long learning.[91] With up to 40 per cent of young people identifying as having low levels of social and emotional wellbeing[92], this is becoming a critical area in which students require support.

Respondents to a 2018, national survey of Australian youth aged 15-21 felt that schools could better set them up for future success by educating them in finances (91 per cent), life skills (79 per cent), and employment (64 per cent).[93]

Young people engaged in secondary education who do not plan to enter university must have opportunities to access higher qualifications through TAFE or equivalent training providers and support to complete these qualifications, in order to stay engaged. Connecting young people with projected growth industries in their region at a skill level commensurate with anticipated employment demand will be important in ensuring young people have the opportunity to achieve strong employment outcomes.[94]

Each state and territory has a range of individual approaches and strategies addressing student engagement and wellbeing ranging from frameworks, strategies, support services, school resources, and pastoral care.

A common approach to improving engagement has been to integrate VET subjects into upper-secondary curriculum. Understanding the outcomes of these programs and how they vary across different models of provision is important in designing effective youth transition policies. [95]

Educational disengagement

The majority of respondents to the Mission Australia Youth Survey 2018 reported they were either very satisfied (12.9 per cent) or satisfied (55.8 per cent) with their studies. However, 7.1 per cent of those who were studying were either dissatisfied or very dissatisfied with their studies, which may potentially result in future disengagement from education.

It is encouraging to see low levels of dissatisfaction with studies, however, it is important to have progress in particular for those who are at risk of disengaging or have disengaged from school to enable them to have a pathway into work or further study.

Mission Australia, Youth Survey Report 2018, pages 8-9

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[91] Deloitte Access Economics, *The economic impact of improving schooling quality*, Department of Education and Training, November 2016, pg. 8
[92] Foundation for Young Australians (2018) *The New Work Reality*, Australia, pg. 7
[93] Year13, YouthSense, *After the ATAR II, Understanding How Gen Z Make Decisions About Their Future*, 2018, pg. 35
[94] Mission Australia, *Inquiry into Career Advice Activities in Victorian Schools, Submission,* page 11
[95] Black, D, Polidano, C., Tabasso, D., 2012, *Outcomes from workplace learning in school-based vocational education*, Melbourne Institute of Applied Economic and Social Research, The University of Melbourne, p. 2

Alternative education settings

Schools that engage well with students have flexible models that look at the needs and interests of individual students. Flexible models can work to engage all students, with some focused specifically on students at risk of disengagement.

States and territories offer various programs with flexible delivery options to improve student engagement and transition arrangements. These range from vocationally intense programs to programs specifically aimed at inspiring disadvantaged communities.

Tailored support for disadvantaged students

With educational attainment so closely linked to success in the future, it is essential that senior secondary schooling supports the participation of all students, and provides additional support to ensure disadvantaged students are able to complete senior secondary schooling and have a clear understanding of the variety of pathways available to them.

Education and labour market outcomes for Aboriginal and Torres Strait Islander peoples; people with disability or low socio-economic status; those from regional, rural, remote or very remote locations; refugees; early school leavers; and those from backgrounds that are linguistically diverse are generally poorer than those of other Australians. Intersectionality, whereby the effects of multiple forms of disadvantage overlap and potentially compound barriers to access,[96] can also have a profound impact on equity.

Figure 15 below illustrates the relative size of disadvantaged groups in Australia within different parts of the education system. These diagrams show that in compulsory school education, these groups make up a substantial proportion when compared to the whole cohort. This declines significantly in non-compulsory, post-school education, with a smaller proportion of these students represented in VET and even fewer in higher education.

Figure 15: Disadvantaged cohort size by education sector
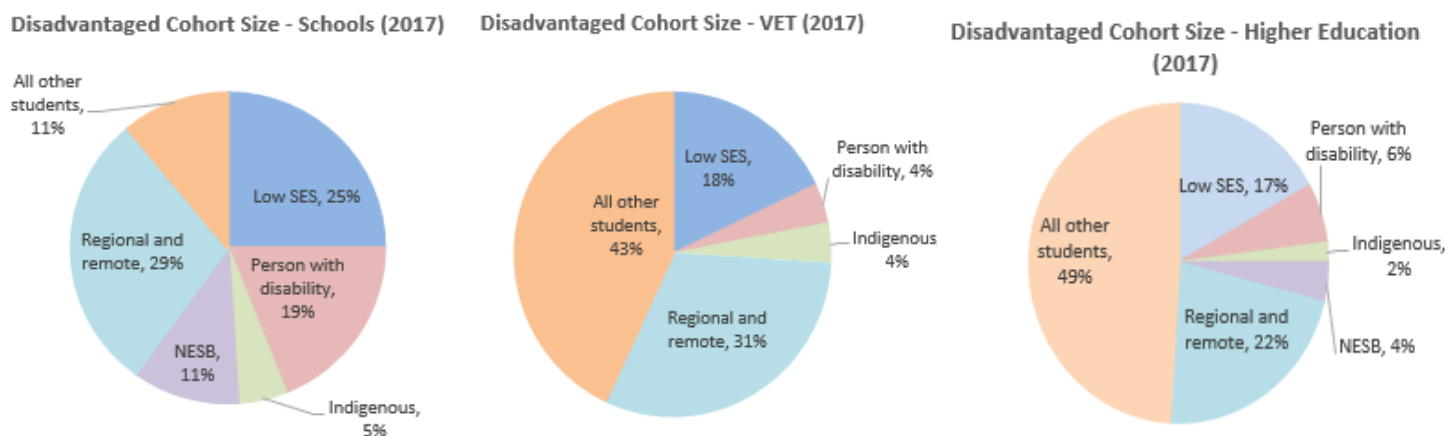
NB Figures are rounded. Sources: Schools[97]; VET[98]; Higher Education[99]

[96] McLachlan, R. et al (2013) *Deep and Persistent Disadvantage in Australia*, Productivity Commission, Canberra, p.2
[97] Productivity Commission (2019) *Report on Government Services 2019- Chapter 4: School Education*, accessed 16/08/19, https://www.pc.gov.au/research/ongoing/report-on-government-services;
[98] NCVER (2018); *Australian vocational education and training statistics: Total VET students and courses 2017- data slicer*, NCVER, Adelaide
[99] Department of Education (2017) *Selected Higher Education Statistics- 2017 Student Data*, accessed 19/8/19 https://www.education.gov.au/selected-higher-education-statistics-2017-student-data,

Barriers to successful transitions

There are some unique challenges disadvantaged groups may face in making decisions around their future pathways, and ultimately experiencing successful transitions. These include being less likely to recognise the value of higher education[100], differing parental expectations[101], lower aspirations than their peers[102], and geographic barriers including distance from community and cultural supports.[103]

Outcomes of educational disadvantage include poor engagement at school; low educational qualifications; low levels of participation in post-school education, training and employment; and labour market disadvantage in areas such as participation.[104] Disadvantaged students may also have limited access to employment networks, career advice, positive role models or enrichment activities,[105] as well as potentially facing prohibitive financial burdens and social costs (such as moving away from support networks) in order to access further education and training.[106]

[100] Nguyen, N. and Blomberg, D. (2014) *The role of aspirations in the educational and occupational choices of young people*, National Centre for Vocational Education Research (NCVER), Adelaide, p. 7

[101] Nguyen, N. and Blomberg, D. (2014) *The role of aspirations in the educational and occupational choices of young people*, National Centre for Vocational Education Research (NCVER), Adelaide, p. 7

[102] James, R. (2002) *Socioeconomic background and higher education participation: an analysis of school students' aspirations and expectations*, Department of Education, Science and Training, Canberra, cited in Nguyen, N. and Blomberg, D. (2014) *The role of aspirations in the educational and occupational choices of young people,* National Centre for Vocational Education Research (NCVER), Adelaide, p. 7

[103] Cultural and Indigenous Research Centre Australia (circa) (2016) *National Priorities: Aboriginal and Torres Strait Islander Secondary Student Transitions Project: Final Report*, Department of Education and Training, Australia, p. 1

[104] Australian Curriculum, Assessment and Reporting Authority, *National Report on Schooling in Australia 2009: National initiatives and achievements*, accessed 19/08/19, https://acara.edu.au/reporting/national-report-on-schooling-in-australia/nrosia2009/national-initiatives-and-achievements/aboriginal-and-torres-strait-islander-and-disadvantaged-youth

[105] Gonski, D. et al (2018) *Through Growth to Achievement: Report of the Review to Achieve Educational Excellence in Australian Schools*. Commonwealth of Australia, p. 42

[106] Halsey, J. (2018), *Independent Review into Regional, Rural and Remote Education- Final Report,* Australian Government Department of Education and Training, Australia, pp 22-23

Data

High quality data is essential to both support young people make informed decisions about their futures, and for policy makers to understand student pathways and improve policies on senior secondary schooling and transitions into a growing range of post-school pathways.

While a large amount of education data is collected overall, there are some significant gaps that impact on our understanding of senior secondary pathways. Data collection is not consistent across jurisdictions and sectors, and access is variable, making it difficult to draw meaningful conclusions on educational outcomes for the purpose of future policy development.

Who holds the data?

Student level data is held by states and territories. While many jurisdictions collect post-school destinations data, there is significant variability in the approaches used.

Vocational Education and Training data, including data on VET delivered to secondary school students, traineeships and apprenticeships, is brought together under the National Centre for Vocational Education Research (NCVER).

Higher Education data is held by the Australian Government, although universities and university admissions centres also hold additional data that is relevant to understanding student pathways.

Labour market data is held by the Australian Government.

Creating quality information about student pathways will involve not only collecting the 'right' information, but also that we are bringing that information together from the schooling, vocational education and training, higher education, and labour market sectors. None of the existing data collections taken on their own provide a clear picture of the senior secondary pathways landscape, and there are limited connections between datasets.

Tracking students throughout their education journey from school to further study and work is challenging, with most students following complex transition pathways. The journey of young people today may be nothing like the journeys their parents, educators and employers undertook or had available to them.

Figure 16: Complex pathways to further study and work
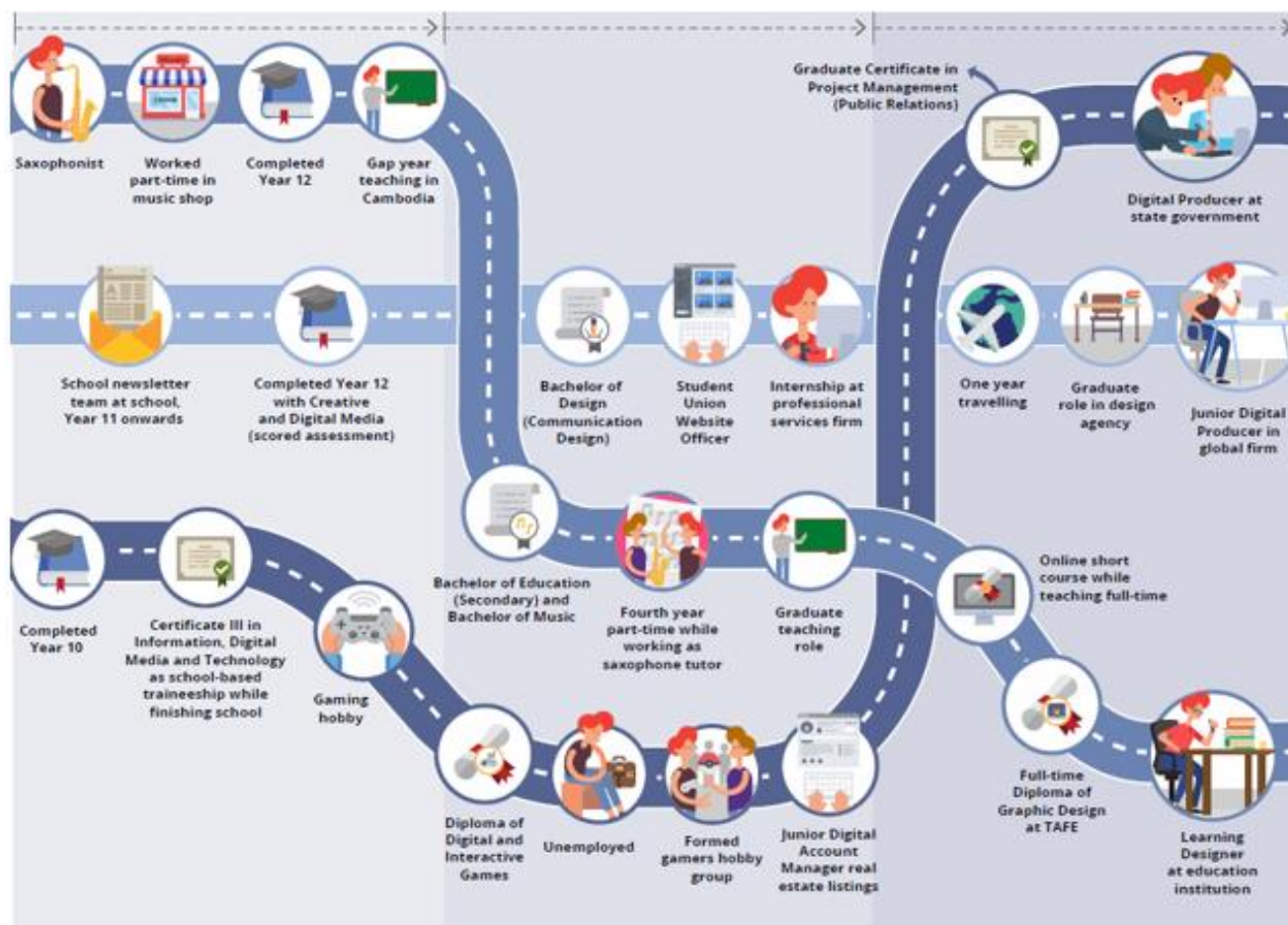
Source: Education Services Australia, Unpublished

A key contributor to our understanding of student pathways is the **Longitudinal Survey of Australian Youth (LSAY)** which has been in place since 1995. The LSAY collects data about students aged between 15-24 over a 10-year period as they transition from school to work, further education and/or training. However, the LSAY uses a small sample size, presenting challenging levels of variation, particularly as the attrition rate of LSAY participants is becoming worse for recent cohorts.

There are a number of initiatives underway to integrate data at a national level, such as the Multi-Agency Data Integration Project (MADIP), the Jobs and Education Data Infrastructure Project (JEDI), and the Data Integration Partnership for Australia (DIPA). Barriers that increase the complexity surrounding data linkage projects, include legislative frameworks, data availability, and concerns around the use of personal information[107].

Unique Student Identifier

Under the National School Reform Agreement, all education ministers have agreed to:

> *Implementing a national unique student identifier (USI) that meets national privacy requirements in order to support better understanding of student progression and improve the national evidence base*

A unique single number for every student, which will help share information on student learning between schools, sectors and states without using a student's name. This will provide students, parents and teachers with a comprehensive record of progress and attainment.

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[107] Productivity Commission (2016) *National Education Evidence Base*, Report no. 80, Canberra.

Having the ability to link existing datasets to track and monitor student movements, wellbeing, post-school destinations and outcomes would provide valuable information that could be used for a variety of beneficial purposes. This could include systemic benefits such as identifying and implementing the programs and interventions that best support successful outcomes for a variety of stakeholders; and benefits to individual students through showing the impact of the choices and decisions they make.

How to provide feedback

The expert panel is keen to hear from a wide range of stakeholders, and especially young people themselves. A complementary Discussion Paper has been developed which provides an overview of the issues raised in this Background Paper, and provides details on how interested individuals and organisations can provide feedback on the Review.