



Australian Government
Department of Education and Training

Submission to the Senate Select Committee on the Future of Work and Workers

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Introduction

Australia's labour market has undergone significant change over the last few decades as a result of technological advances, globalisation and structural shifts. The education sector plays a central role in preparing students and workers to meet these labour market needs throughout their working lives.

The Australian Government is working to ensure the identified core skills that will be needed such as high competency literacy, numeracy, digital skills and humanities, as well as personal skills such as resilience, creativity and communication are embedded in all areas of the education and training sector.

Implications of the future of work for education

Changes to the knowledge, technical skills and capabilities required

Over their lives, individuals develop knowledge, technical skills, and personal capabilities to operate and contribute in their workplace. While an innovative economy requires the development and use of skills in many disciplines and at a variety of levels, 'there is no skills-related silver bullet'¹.

Increasing importance of general capabilities

Emerging technologies are challenging current skills and raising the importance of interdisciplinary education and research, highlighting the need for workers to upskill and engage in lifelong learning. A report by the Foundation for Young Australians estimates that in 2030² workers will spend 30 per cent more time learning on the job, almost 100 per cent more time at work solving problems, 41 per cent more time on critical thinking and judgement, 77 per cent more time using science and mathematics skills and 17 per cent more time per week using verbal communication and interpersonal skills.

Transferable skills such as entrepreneurship, innovative thinking and creativity allow young people to navigate complex careers across a range of industries and professions. These 'non-automatable skills' will support individuals to thrive in a dynamic labour market as technology change the types of skills that are in demand.

¹ Productivity Commission, Shifting the Dial: 5 year productivity review, <https://www.pc.gov.au/inquiries/completed/productivity-review/report/3-future-skills-work>, accessed 9 February 2018, p. 87

² The Foundation for Young Australians, 2017, *New Work Smarts Report*, <https://www.fya.org.au/report/new-work-order/>, accessed 9 February 2018, p. 4

Increased demand for technical skills to harness technology

High-skilled jobs, and in some cases highly specialised jobs, complement new technology. Skills in science, technology, engineering and mathematics (STEM) will be required to maximise the opportunities for increased productivity and competitiveness of new technologies.

Changes to how education and training will be delivered

In order to maximise the opportunities of a digitally enabled economy, the education system will be required to support flexible and lifelong learning to keep up with rapid technology and market changes.

Digitally enabled learning environments

The digital disruption will change classrooms, in what students are taught, how they are taught and how they learn. Education and learning will increasingly be delivered through digital channels, meaning educators will need different pedagogies and skill sets in order to use them effectively in their teaching. Teachers need to be supported in building the capabilities to deliver new and innovative teaching practices that respond to changing workforce skill needs. Similarly, students will need to learn how to use these technologies in order to properly access education.

While online delivery will provide new and updated content faster than traditional delivery methods, the department's experience is that fully digital learning environments can result in lower student retention rates. The integration of digital learning resources into traditional education systems will need to consider how individualised teaching, face to face interaction and co-curricular aspects add value to online teaching resources.

A culture of lifelong learning and reskilling

Considered investment needs to be made in reskilling, upskilling and lifelong learning to encourage and enable individuals to undertake further education and training throughout their lives.

Education is an enabler of individual choice and therefore clarity about the vision and purpose of education is vital³. To navigate the complex future labour market, individuals, industry and governments will need access to real time information about employment opportunities, the skills required to gain employment, and how to acquire those skills.

³ BCA, 2017, *Future-Proof: Protecting Australians through Education and Skills*, www.bca.com.au/publications/future-proof-protecting-australians-through-education-and-skills, accessed 9 February 2018, p. 22.

The role of the Australian Government Department of Education and Training

The Department of Education and Training leads the Government's efforts to strengthen social wellbeing and economic growth through better access to child care, quality early learning and schooling, world class higher education and research, skills and training, and international education. In the context of the future of work and workers, the department is focussing on:

- partnering with states and territories and industry to work towards creating a more dynamic education and training system
- integrating education with employment to create greater opportunities for lifelong learning
- taking advantage of new technologies to break down traditional barriers to work, such as women in science, technology, engineering and maths (STEM)
- considering how existing activities and reform processes can include a focus on the future of work.

The rest of this submission outlines relevant work already underway across the education system.

Early learning and schools

The department implements policies and supports initiatives to improve education outcomes for school students to ensure that when young people finish school they have the knowledge, skills and capabilities they need to succeed in further study, work and life. This includes ensuring young people are equipped to navigate an increasingly complex world of work, and make informed decisions about education, training and career pathways.

Early learning

Parents and families are the first educators and an important part of preparing children for success at school. We need to ensure parents and families are able to be actively engaged in supporting the transition to school, through school and from school to further education, training and employment.

New Child Care Package

As estimated at Budget 2017-18, the Australian Government is investing an additional \$2.5 billion over four years to support the 1.2 million families who use approved child care. The Government is committed to providing parents with more choice and opportunity to work, and more children with the opportunity to benefit from high quality early education and child care. The new child care package will provide genuine and much needed reform to make child care more affordable, accessible and flexible. The majority of Australian families balancing work and parenting responsibilities will benefit from the new system.

The overarching goal of the package is to create a more sustainable child care system that:

- encourages greater workforce participation and productivity, and better meets families' needs
- addresses children's learning and development needs, particularly those who are vulnerable or at risk of poor long-term development outcomes
- improves budget sustainability in the longer term.

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The centrepiece of the new child care package is the new Child Care Subsidy which commences on 2 July 2018. The Child Care Subsidy will be simpler than the current multiple payment system and will be paid directly to service providers. The Child Care Subsidy will improve child care affordability by providing more targeted support to lower and middle income families, while also placing downward pressure on child care fee growth.

The Government recognises that children from disadvantaged backgrounds benefit most from quality early childhood education and care. Therefore, the new child care package also includes additional support via a number of programs and subsidies for families in particular circumstances. For example, under the Child Care Safety Net, families earning around \$65,000 or less who do not meet the activity test will have access to 24 hours of subsidised early learning per fortnight.

Early Years Learning Framework

The Government is making a significant investment in early learning to give children a head start when they reach school. Targeted initiatives are aligned to the Early Years Learning Framework and include children gaining confidence in STEM, digital literacy, languages, and English literacy development for Aboriginal and Torres Strait Islander students. Learning Potential, a free mobile app for parents is providing useful tips and ways for parents to be more involved in their child's learning.

Quality Schools reform package

The Government recognises the importance of investing in our schools. Under the Quality Schools reform package, the Government will invest an extra \$25.3 billion in recurrent funding for Australian schools over the next 10 years (2018 to 2027). This brings total Commonwealth recurrent funding investment to \$249.8 billion over the same period. Importantly, this record and growing investment means states and territories and individual schools should be able to continue and expand support to students through both new and existing initiatives.

Current reviews

Regional Student Access and Remote Education

In June 2016, the Government announced the \$152 million Regional Student Access to Education package comprising four elements, commencing in 2017–18:

1. Reducing the period regional and remote students need to be employed under the self-supporting criteria under Youth Allowance and ABSTUDY living allowance, from 18 months to 14 months
2. 1,200 new rural and regional enterprise scholarships for undergraduate, postgraduate and vocational education students to undertake STEM studies
3. 50 per cent increase in the Assistance for Isolated Children's Additional Boarding Allowance
4. An independent comprehensive review into regional, rural and remote education.

Independent Review into Regional, Rural and Remote Education

On 2 March 2017, the Deputy Prime Minister, the Hon Barnaby Joyce MP, and the Minister for Education and Training, Senator the Hon Simon Birmingham, announced the *Independent Review into Regional, Rural and Remote Education* (IRRRRE).

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The IRRRRE aims to identify innovative approaches to support improved access and achievement of these students in school and in their transition to further study, training and employment. The IRRRRE has considered the key issues, challenges and barriers that impact on the learning outcomes of regional, rural and remote students and the final report of the IRRRE was provided to Government on 31 January 2018 and is being considered.

Review to Achieve Educational Excellence in Australian Schools

The second important review is the *Review to Achieve Educational Excellence in Australian Schools* which will build the evidence base needed to ensure the additional funding provided by the Government is spent on proven initiatives that make a difference to student outcomes.

The Review will be finalised by March 2018 to inform the Government's new approach to schools funding. The findings will inform the Government's national agreement and the bilateral reform plans with states and territories, and inform all governments on how to get the best outcomes from schools and systems.

Most importantly principals, teachers, schools and educators will gain the benefit of education research and the application of best practice methods. The review will help identify the highest priorities for school reform.

Curriculum

The Australian Curriculum was last reviewed in 2014. The Curriculum, endorsed by all education Ministers in late 2015, has been designed to help prepare Australian students from Foundation to Year 10 for the jobs of the future. The Curriculum is not static and the next review of the Curriculum is expected in 2020.

The Curriculum has three dimensions: eight learning areas, seven general capabilities and three cross-curriculum priorities. The general capabilities, which include literacy and numeracy, information and communication technology capability, critical thinking, personal skills, and an understanding of ethical and cultural contexts, are all essential for young people to thrive in the future workplace. The Government works with state and territory governments and non-government education authorities to ensure the curriculum is aligned to the knowledge, skills and understandings that will enable young people to succeed beyond school.

Australia is also participating in the *OECD's Education 2030 – The future of education and skills project* in which over 25 countries are participating. The project is designed to help countries explore the different dimensions of 21st century skills and competencies that modern education systems will need to develop in their students towards the world in 2030. The Australian Curriculum, Assessment and Reporting Authority (ACARA) is the National Coordinator for this work.

A high quality school STEM education is critically important for Australia's economic wellbeing, and for informed personal decision making and effective citizenship. To ensure Australian students have the skills they need for the workforce of the 21st century, the Government is delivering a National Innovation and Science Agenda (NISA)⁴ that includes a range of initiatives to improve the teaching and learning of STEM in an innovative and engaging way.

⁴ National Innovation and Science Agenda can be accessed at <https://www.innovation.gov.au/page/agenda>

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Quality teaching

The teaching workforce is critical to the development of skills that students need to participate in the future economy. It is therefore essential that teachers and school leaders are well placed to be effective in the classroom and prepare students for participation in the future. This starts with well-trained, skilled and knowledgeable teachers who graduate from an initial teacher education program ready for the classroom.

Following recommendations of the Teacher Education Ministerial Advisory Group (TEMAG), the revised Accreditation of Initial Teacher Education Programs in Australia: Standards and Procedures were endorsed by all education ministers in 2015 and require higher education providers to ensure that initial teacher education students graduate with the knowledge and skills they need to be successful in the classroom.

The *Australian Professional Standards for Teachers* (the Teacher Standards) provide a nationally agreed quality assurance mechanism that ensures teachers in Australia have the required competencies to be effective educators. The Teacher Standards are a public statement of what constitutes teacher quality, and define what teachers should know and be able to do at different stages across their careers. It is vital that teachers have access to high quality professional learning so they can continue to develop the skills they need for their classrooms.

The Government, through the Education Council of Australia and state and territory ministers, has commissioned the Australian Institute of Teaching and School Leadership (AITSL) to implement a National Initial Teacher Education and Workforce Data Strategy. The strategy will development of a whole-of-professional life Australian Teacher Workforce Data Collection to support the teacher workforce policy and planning.

Australia also participates in the Organisation for Economic Cooperation and Development (OECD) Teaching and Learning International Survey (TALIS) 2018. This survey of teachers and school leaders in government and non-government schools provides a valuable comparison of teacher demographics, working conditions, teaching strategies and policy settings and supports policy efforts to improve teacher effectiveness and learning outcomes.

Preparing students for further training and work

Supporting vocational learning and VET delivered in secondary schools is critical to ensure students are equipped with the skills to succeed in the workplace. Schools have always prepared students for work, but bringing schools and employers together through quality vocational learning and VET programs can help school graduates meet the higher demands of the workplace and a globally competitive environment.

In 2014, all state and territory governments endorsed a new framework for vocational learning and VET delivered to secondary students titled 'Preparing Secondary Students for Work'. This framework aims to ensure that VET is viewed as equally valid as other further education pathways, such as university.

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The framework makes an important distinction between VET delivered to secondary students (which should be held to the same standards as all VET) and vocational learning. Vocational learning, which includes career education, is an important precursor not only to VET but to making successful transitions generally. Vocational learning can help secondary students understand the relevance of their education, explore the world of work, identify career options and equip them to make effective decisions about subject choice, post-school education, training and career pathways.

Recent research highlights the need for schools to shift away from preparing students for traditional and linear career paths. Young people will need a portfolio of skills and capabilities, including skills to make career decisions throughout life⁵. In response, the Government is leading the development of a National Career Education Strategy. The strategy aims to ensure students have the information and support they need to prepare them to successfully transition to further education, training or work.

The strategy will focus on developing 21st century skills and facilitating stronger collaboration between schools and industry to equip young people with the skills to navigate complex careers across a range of industries and professions. Initiatives developed through the strategy will be suitable for all young people, including Aboriginal and Torres Strait Islanders.

It is important that work in this regard is underpinned by a solid evidence base. The Department manages the Longitudinal Surveys of Australian Youth (LSAY). LSAY surveys nationally representative cohorts of young people aged 15 – 25 years as they transition from school to further education and training and the labour force. Since 1995 LSAY has provided data about six distinct cohorts of young Australians.

Increasing industry engagement in schools

It is important to engage industry as active contributors and partners in the learning and development of their future workforce. This includes partnerships that support the development of technical skills, as well as general capabilities that prepare young people for the world of work. The Government is leading the STEM Partnerships Forum, a national action under the National STEM School Education Strategy 2016-2026 agreed by all Education Ministers in 2015. The work of the Forum brings together leaders from business and education to improve school-industry partnerships with a focus on STEM. The Forum is looking at how we can inspire more young people into STEM careers by asking them what ‘real world’ problems they want to solve, and looking at how industry can support teachers and schools to make STEM education more engaging – particularly for underrepresented groups.

⁵ The Foundation for Young Australians, 2016, *The New Work Mindset: 7 new job clusters to help young people navigate the new work order*, <https://www.fya.org.au/wp-content/uploads/2016/11/The-New-Work-Mindset.pdf>, accessed 9 February 2018.

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The Pathways in Technology (P-TECH) pilot is another Government industry collaboration. P-TECH involves schools, industry and tertiary education providers working in partnership to support young people (including those from disadvantaged backgrounds) to develop the skills they need for the jobs of the future. P-TECH offers secondary school students an industry supported education pathway to a STEM related post-school qualification. With ongoing support from their industry mentor, students then have the option to continue their study at the tertiary level or pursue employment in a STEM related field, including job opportunities with the school's industry partners.

The vocational education and training (VET) sector

Australia's VET system provides training for a wide range of workplace skills and knowledge-based competencies for a wide range of occupations, through a variety of training institutions and enterprises. There are around 4 million students (including overseas students) enrolled in our training system, representing one in four working age Australians.

Australian industry plays a leading role in the VET system to ensure the sector supplies the skills industry need and drives improvements in productivity and competitiveness across the economy. Both Australian and state and territory governments have roles in the governance, regulation and support of the national VET system, and work alongside various independent bodies to ensure quality outcomes are delivered. Australian state and territory governments have ministers, government departments and training authorities that administer VET.

Significant reforms implemented

Enhancing the VET system has been a priority for the Government which has implemented substantial reforms since 2014. Reforms have focused on enhancing industry leadership in the development of training products (to reflect emerging skills needs and support greater mobility between occupations), strengthening the apprenticeships system and supporting increased participation in high-quality training. Ongoing evolution is required to ensure VET continues to deliver the skills required by industry, and meets the needs of the economy.

Raising the status of VET

VET information strategy

In November 2017, the Assistant Minister for Vocational Education and Skills, the Hon Karen Andrews MP, launched the Vocational Education and Training (VET) Information Strategy at the 2017 Australian Training Awards in Canberra.

The VET Information Strategy will address misconceptions around VET and promote the opportunities that an individual can gain by completing a VET qualification. Its roll out will include a range of initiatives centred around a united tagline for the VET sector, *real skills for real careers* and promote a collaborative approach by stakeholders and corporate and community partners. The sector is encouraged to unite in their shared responsibility to help all Australians, particularly the next generation, understand VET is a personally, professionally and financially rewarding career choice – and just as prized as a university degree.

A new, future-focussed approach to nationally recognised training

The Australian Industry and Skills Committee (AISC)

The AISC was established in 2015 to give industry a stronger voice in the VET system, including in the review and development of training packages. The AISC draws on advice from a network of Industry Reference Committees (IRCs) which are made up of representatives with experience, skills and knowledge of their particular industry sector. Their advice helps ensure training packages meet the needs of employers and the modern economy. IRCs are supported by Skills Service Organisations (SSOs). SSOs are independent, professional service organisations. Under direction of relevant IRCs, they undertake work commissioned by the AISC on the review and development of training products.

These industry led arrangements for review and development of nationally accredited training packages for the VET system are focussed on ensuring that training packages give workers the right skills for the job, either at the completion of their training or when they need to build and deepen their skills. This includes giving workers skills for the jobs of the future and responding to the needs of industry in a rapidly changing digital world. There are a range of activities underway to ensure the AISC remains at the forefront of skills need transformation, including:

- A number of cross industry projects are being undertaken to collaboratively address skills needs that are common across industries.
- The AISC has also agreed to establish a specific purpose Industry 4.0 IRC. This IRC will provide advice on issues such as changes to technology and training system responses to innovations occurring in advanced industrial activity and digital transformation. This IRC will also play a key role in overseeing relevant cross sector projects and training package development work.
- IRCs are considering how emerging trends will affect their industries and how their industries will need to respond, along with implications for training package development.

Case study: A new, future-focussed approach to nationally recognised training

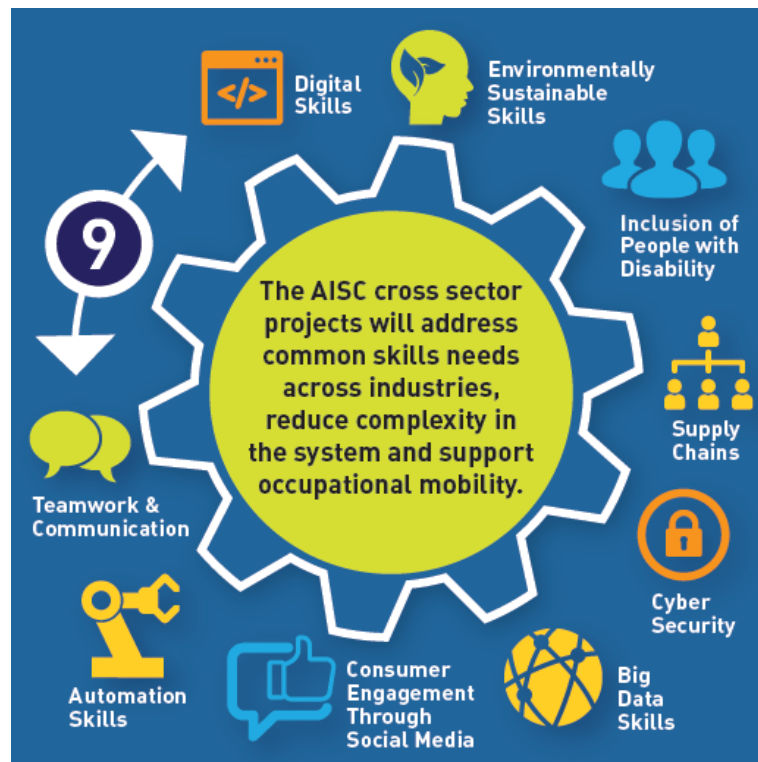
Industry cross sector projects

Working with industry through the AISC network of 64 Industry Reference Committees, the AISC has identified nine emerging areas where there are future common skills needs – big data, automation, digital skills, consumer engagement through social media, supply chain management, cyber security, environmental sustainability and team work and communication.

Cross sector projects bring a range of industries together to identify the common skills people will need to transition into the jobs of the future. As well as modernising training, this new approach recognises the importance of a flexible and adaptive workforce to building business productivity and Australia's future competitiveness.

The projects also aim to move away from the traditional industry silos so there is greater collaboration between industry sectors in the design and ownership of training packages. By recognising and formalising skills used across multiple industries, it will be easier for people to move between jobs and industries.

To date, IRCs have collaboratively identified common units of competency and new components to be used across industry. More than 900 units for development, review, consolidation or deletion have been identified. This new, more collaborative model of developing training packages will help ensure the VET system is more responsive to modern ways of working, technological change and structural adjustment in the economy.



Training Product Reform

Training packages are a key feature of Australia's national VET system. A training package is a set of nationally endorsed standards and qualifications for recognising and assessing peoples' skills in a specific industry, industry sector or enterprise. Accredited courses are developed where no training package qualification exists to cover a particular skill need, including niche and emerging industries, and educational and community courses. These can be either nationally recognised qualifications or a course in a particular area. The term 'training products' includes training packages and accredited courses.

The COAG Industry and Skills Council (CISC) is seeking to ensure that training products remain relevant in the future, and support skills development as technology and industry changes. The objective is to examine training products and their contribution to future workforce requirements to identify how the training system will provide students with skills for the future economy. This includes consideration of jobs of the future and how an individual might move through the economy during their career equipped with adaptable knowledge and skills.

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A discussion paper is available on the department's website and will inform public consultation with face to face workshops in February and written submissions closing 9 March 2018. Written submissions can be made through the department's website through the [Training Product Reform: Submission response form](#).

An increased focus on apprenticeships

The Government is committed to a quality apprenticeship system that is positioned to meet future workforce needs and continues to produce the highly skilled workers that businesses need to drive productivity and competitiveness.

Data from the Department of Jobs and Small Business suggests that although the projected future demand for technicians and trades workers is below that of professionals, there is evidence that the labour market is less adequately supplied to meet current and future needs. 22 trades worker occupations are listed as being in national shortage, with a number of trades in shortage for most of the last decade. In contrast, only five occupations classified as 'Professionals' were listed in national shortage⁶.

Skilling Australians Fund

The establishment of the Skilling Australians Fund is a major commitment by the Commonwealth to ongoing funding for VET. An estimated \$1.5 billion will be available over 2017–18 to 2020–21. With matched funding from the states and territories, the Fund will support up to 300,000 apprentices, trainees, and pre- and higher-level apprenticeships. The Fund will support apprentices and trainees which focus training on work integrated learning opportunities.

Higher level apprenticeships

Industry consultations on Australian Apprenticeships have highlighted the need for a focus on higher level skills to meet the demands of the Australian economy and support future growth industries. Higher level apprenticeships emphasise on-the-job training and employer engagement, while also providing a contemporary pathway that focuses on upskilling and reskilling workers through advanced level training.

Apprenticeship Training - alternative delivery pilots

The Government's Apprenticeship Training - alternative delivery pilots (the pilots) program is funding five industry-led pilots trialling innovative apprenticeship arrangements. The pilots are designed to identify issues in relation to opportunities and barriers to increased industry usage and acceptance of alternative apprenticeship training.

Two pilots are exploring the potential for higher level apprenticeships. The Australian Industry Group (Ai Group) is leading one pilot focused on advanced manufacturing and applied technologies, with PricewaterhouseCoopers (PwC) leading the other, focused on business, management and information technology occupations.

⁶ Department of Jobs and Small Business, www.jobs.gov.au/national-state-and-territory-skill-shortage-information, accessed 9 February 2018

Industry Specialist Mentoring for Australian Apprenticeships

The Industry Specialist Mentoring for Australian Apprentices (ISMAA) program aims to increase apprentice retention rates in the first two years of training in order to improve completion rates and support the supply of skilled workers in industries undergoing structural change.

The ISMAA program provides an intensive and specialist level of assistance to eligible apprentices and trainees who are experiencing barriers to completing their training through regular one to one contact from a highly skilled industry specialist mentor. The mentoring support provided to each apprentice is tailored to their individual career and skills development needs.

The ISMAA program was launched in January 2018 and will support over 40,000 Australian Apprentices. The program is delivered by 24 organisations across all states and territories covering a range of industries including: building and construction; accommodation and food services; electrical; and health care.

VET Student Loans

The VET Student Loans program provides income contingent loans to eligible students undertaking diploma and above level vocational education and training in eligible courses. A key feature of the program is targeted eligibility to courses that have high national priority, meet industry needs, contribute to addressing skills shortages and align with strong employment outcomes. This ensures the Government's investment in VET is better targeted – that loans are only being provided for courses that are closely aligned to the skills employers need in their workplace. Courses are approved if they are current (in other words not superseded) and on at least two state and territory subsidy lists, or are a STEM course (as defined by the Australian Bureau of Statistics (ABS) and the Office of the Chief Scientist) or tied to licensing requirements for a particular occupation.

Data and consumer information

My Skills and the registered training organisation (RTO) dashboard

My Skills is Australia's directory of vocational training. The My Skills website brings together information from a wide range of sources to help students and employers make informed decisions on the training that best suits their needs.

The performance Information for VET project, agreed to by Skills Ministers in November 2016, will transform the data available to consumers, governments and regulators over the next three years through the creation of an RTO Performance Dashboard for consumers and an integrated virtual Data Platform for governments. Enhancing the information consumers have regarding employment outcomes from training and the employment prospects associated with different training options will form an important part of the RTO Performance Dashboard.

Case study: Data and consumer information

Unique Student Identifier

The Government has implemented the Unique Student Identifier (USI), which gives individuals easy online access, in one place, to all their nationally recognised training records undertaken since 2015. Individuals can generate, view, download and print a record of their training in the form of a transcript, and allow registered training organisations of their choice online access.

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As well as helping students keep track of their training qualifications, the USI initiative will provide more precise data through longitudinal studies to help the Government ensure that our VET sector provides the skills businesses need – now and in the future. There are advantages for training organisations and industry too, as the USI will make our training system more efficient, streamlined and responsive.

Anticipating future skills needs

Understanding the changing labour market will be critical to develop policy responses. The Government is participating in an OECD project '*Getting Skills Right: Assessing and Anticipating Changing Skills Needs*'. This project will provide analysis on how Australia could better identify current and future skills in demand.

The Government has identified areas of significant future employment growth, for example, the workforces of the National Disability Insurance Scheme NDIS and for naval shipbuilding projects, and areas of potential decline in employment such as automotive manufacturing.

Case studies: anticipating future skills needs

Decline in automotive manufacturing

In response to the closure of local automotive manufacturing operations by Toyota and Holden in October 2017 the Government has worked closely with Holden, Toyota, their supply chains and the Victorian and South Australian Governments to support automotive workers transition to new jobs, encourage diversification by automotive supply chain firms, and accelerating new private sector business activity outside of car manufacturing in Victoria and South Australia.

Through this assistance, under the Growth Fund Skills and Training initiative, the Toyota and Holden workforce has received access to financial education, career advice, skills assessment and recognition and targeted referral to appropriate education and training. In some cases, workers have found new employment in roles utilising their existing skillsets and, in other cases, workers have been retrained to enter employment in new industries unrelated to manufacturing.

A Naval Shipbuilding College

The 2016 *Defence White Paper*, launched by the Prime Minister, the Hon Malcolm Turnbull MP and Senator the Hon Marise Payne, Minister for Defence set out the Government's plan for the recapitalisation of the Royal Australian Navy and affirmed a commitment to build a sustainable naval shipbuilding capability in Australia. This naval shipbuilding endeavour is aimed at building and sustaining Australia's naval capabilities, supporting economic growth through maximising Australian industry participation and securing sustainable Australian jobs.

The naval shipbuilding enterprise will support long-term, secure employment for Australian workers. The naval shipbuilding workforce is expected to grow to around 5000 workers by the mid to late 2020s, with more than double this number of workers in sustainment activities and throughout supply chains.

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The design and construction of modern naval vessels requires extensive design and engineering, extremely complex systems integration, and advanced manufacturing and outfitting techniques using highly specialised materials and composites – including the ability to solve challenging and dynamic problems.

While many of these skills exist in Australia, whether in shipbuilding or adjacent industries, it is critical that the design and construction of Australia's future fleet draw upon cutting edge of technology, materials and production techniques. The continued evolution of the Australian skilled workforce is critical to the successful delivery of the enhanced naval capability outlined in the 2016 *Defence White Paper*.

The Government announced on 24 March 2017 the establishment of a Naval Shipbuilding College (the College) to be headquartered in South Australia, under a hub and spoke model, involving education and training providers across Australia.

The College will work with shipbuilders to identify the unique skills needs of Naval Shipbuilding, and to work with education and training providers to build capacity within the Australian system to deliver the skills required.

A key success factor for a sustainable shipbuilding industry in Australia will be increased STEM skills, developed from school through tertiary education, which will provide a strong foundation to respond to emerging industry needs, and also to drive future developments in naval shipbuilding in Australia.

Higher education and research

Higher education can improve equality and plays an important part in delivering social and economic mobility for Australians. It provides people with the skills and opportunities to engage in a modern economy. In 2016, there were around 1.5 million students studying in Australia's higher education system, including around 1.1 million domestic students.

The Government supports higher education teaching and research through policies, funding and programs with the Government investing close to \$17 billion in 2017. This includes support for:

- the Commonwealth Grant Scheme (CGS) which contributes to the cost of educating Commonwealth supported students enrolled in undergraduate and postgraduate degrees
- research activities
- income-contingent loans to remove up-front cost barriers to tertiary education.

There has been strong growth in domestic undergraduate enrolments, with enrolments growing by 33 per cent between 2009 and 2016. In particular, there has been high growth in the number of undergraduate students studying health (59 per cent), natural and physical sciences (51 per cent) and information technology (43 per cent).

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This is broadly consistent with projections of future labour market needs which shows that four industries are likely to be responsible for half of all employment growth to 2022: health care and social assistance, professional, scientific and technical services, construction, and education and training⁷.

However, this growth in enrolments also led to significant increases in Government funding, with funding for teaching and learning increasing by 71 per cent since 2009, twice the rate of the economy.

In recognition of the need to explore more sustainable funding models for the future, the Government recently announced that it would freeze CGS funding for bachelor level courses at 2017 levels for 2018 and 2019. From 2020, growth in funding will be in line with population growth if universities meet specified performance requirements. The sector will be consulted in 2018 on the indicators to be used but they are likely to relate to improvements in student attrition, low SES participation and graduate outcomes.

Linking funding growth to performance outcomes, including employment outcomes, from 2020 will encourage universities to provide a better student experience and introduce new initiatives to improve their performance, support student retention, and boost graduate employment outcomes.

Review of the Australian Qualifications Framework

The Australian Qualifications Framework (AQF) is the agreed policy of Commonwealth, state and territory governments for regulated qualifications in the Australian education and training system. It sets out the high level knowledge and skills to be obtained by people who complete qualifications ranging from the senior school certificate through to a doctorate. In addition, it outlines a number of policies, including those for issuing qualifications, and for qualifications linkages and pathways.

In the 2017-18 Budget, the Government announced a review of the AQF to be completed by December 2018. While the terms of reference for the review are yet to be finalised, the department anticipates that they will include addressing the extent to which the AQF meets the expectations of students, the education sector and the domestic and international employment markets. This is likely to involve considering the changing nature of work and the high level skills and knowledge that may be required by people to operate successfully in the future workplace, as well as the utility of developments in education such as micro-credentials in meeting these future needs.

Quality indicators for Learning and Teaching

The Quality Indicators for Learning and Teaching (QILT) website (www.qilt.edu.au) is a Government initiative which helps students and their families make informed choices about their higher education options by bringing together survey data from Australian universities and higher education institutions about students' experiences and graduate employment outcomes.

⁷ Department of Jobs and Small Business, 2017-2022 Employment Projections

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The QILT website is a valuable resource which enables students to make the best choice of study by providing information on graduate outcomes and student satisfaction. Students can make side by side comparisons of institutions and 21 study areas, focusing on quality indicators of overall satisfaction, teacher quality, student support, skill development, median salary and employment outcomes.

The website brings together survey results from current students and recent graduates, along with information on employment and salary outcomes. It is underpinned by a suite of surveys that covers the student lifecycle from course commencement to employment. In 2018 the QILT website will also publish Australian Taxation Office graduate income data to better inform students of earnings potential.

Around 140 Australian higher education providers (40 universities and 100 Non-University Higher Education Institutions) are provided with high quality, timely data to benchmark their performance and pursue continuous improvement in key areas such as teaching practices, learner engagement and student support.

Reallocation of Commonwealth supported places for enabling, sub-bachelor and postgraduate courses

The Government subsidises a specified number of Commonwealth supported places for enabling, sub-bachelor (diploma, advanced diploma and associate degree) and postgraduate courses each year.

To ensure the Government is supporting courses that will deliver graduates for the changing workforce, the Government will reallocate Commonwealth supported places for enabling, sub-bachelor and postgraduate courses from 2019.

The criteria for reallocating places will be settled in consultation with the higher education sector but are expected to have the following focus:

- Enabling courses - places to be allocated to universities that achieve high standards of academic preparation and strong student outcomes.
- Sub-bachelor courses - places to be allocated to universities for courses that focus on industry needs and fully articulate into a bachelor degree.
- Postgraduate courses – places to be allocated to universities on criteria informed by public and private benefits and how well institutions meet student needs.

Higher degree by research training

The Government's research training policy agenda is focused on developing a more student-centred approach to equipping students with the skills for the workforce of the future, particularly through industry experience, to enable them to respond to Australia's changing economic and social needs.

Review of Australia's Research Training System

The Australian Council of Learned Academies' *Review of Australia's Research Training System* (the review) concluded that the higher degree by research (HDR) training system generally performs well, but identified a number of areas for improvement and made recommendations to address their findings. The department established a sector-wide implementation working group to develop a plan

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to address the recommendations of the review. An implementation plan has been developed and the Government is working with the sector to implement initiatives under the following five priority areas:

- pathways for students to higher degree by research training
- industry-university collaboration, including placements
- equity, including Indigenous participation
- quality of the HDR training system
- data and evidence to better monitor HDR system performance.

The Government is also implementing a number of other initiatives that align with the recommendations of the review. Changes to research block grant arrangements under the NISA took effect on 1 January 2017. These changes aim to:

- incentivise industry-university engagement
- offer universities autonomy and flexibility in allocating research funding and research training funding, including flexibility in the duration of support and stipend level for HDR students.

The new research block grant arrangements will also better support Indigenous HDR student participation by doubling the weighting of Indigenous HDR completions in the Research Training Program funding formula and providing increased flexibility for universities to provide higher value stipends to Indigenous researchers.

The review found HDR students would benefit from industry placements and these placements play an important role in driving research translation and collaboration. In June 2016, the Government committed \$28.2 million to expand Australian Mathematical Sciences Institute (AMSI) PhD internships program to a national-scale. The National Research Internships Program (NRIP) commenced in 2017 will deliver 1,400 new industry-based internships over four years, with a focus on supporting more women into STEM disciplines.

Course satisfaction, course completions and career outcomes for HDR training are also being monitored through data collections such as the QILT and the Higher Education Student Data Collection.