



The Future of Work for Australian Graduates:

*The Changing Landscape of University Employment
Transitions in Australia*

By Alison Pennington and Dr. Jim Stanford
Centre for Future Work at the Australia Institute

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This is a summary of a major research report on future employment transitions for Australian university graduates. In light of major technological advances, such as robotics and artificial intelligence, as well as major changes in the organisation of work (including digital platforms and 'gig' work), many current and prospective students wonder what sort of labour market they will enter when they finish their studies. And university administrators and government policy-makers are searching for more effective ways to support graduates as they transition to employment.

This report reviews the changing world of work, with a focus on how technology and other changes are likely to affect demand for specific skills and occupations. It discusses shortcomings in Australia's current education-to-work system, and proposes several concrete policy recommendations to make those transitions more successful.

This report was prepared by the Centre for Future Work at the Australia Institute, at the request of Graduate Careers Australia.

To view the full 107-page report, please visit:
graduatecareers.com.au or futurework.org.au



Introduction: An Uncertain Future for Work

The world of work is being transformed by many complex forces — including technology, changes in workplace organisation and employment relationships, environmental and demographic challenges, and more. These changes affect all participants in the labour market; no industry or occupation is immune to the flux and uncertainty created by these multiple disruptions. But no group of workers will confront the reality of constant change more directly than young workers. As new entrants to the labour market, they cannot count on the protection of previous structures or practices to insulate them from coming changes. They immediately face the challenges of an increasingly precarious job market — one in which less than half of all employed Australians now fill a traditional “standard” job (full-time, permanent, paid work offering normal entitlements like paid leave and superannuation).

Holding a university degree is still a vital and valuable asset for young workers entering this challenging and unstable milieu for the first time. Individuals with university degrees are more likely to be employed, to have more stable jobs, and to be paid more. But this relative advantage does not negate the fact that employment conditions have become much more challenging — even for graduates. Rates of graduate employment in full-time work are down significantly, and there is evidence of a growing mismatch and underutilisation of university graduates in positions that do not fully or even partly utilise their hard-won knowledge and skills. At the same time, employer complaints about supposed skills shortages and the dearth of “job-ready” graduates are as loud as ever. (As documented in the full report, those complaints need to be interpreted with considerable caution.)

Australia’s higher education system could do a better job at anticipating the needs for highly-skilled workers in the future, evolving program offerings in light of those needs, and assisting students as they traverse their university educations and find meaningful, relevant work. This report confirms that university education makes a vital, essential, and valuable contribution to Australians’ prosperity: both at an individual level for those who have attained higher education, and at the macroeconomic and social level. But it catalogues gaps and failures in crucial education-to-jobs transitions, considers the most likely factors contributing to those gaps and failures, and makes several concrete recommendations for policy change and innovation.

Change Ahead — But Paid Work is Here to Stay

The world of work is being transformed by parallel, interacting forces: new technologies, and new forms of work organisation. This has sparked a legitimate concern among many Australians about the future of work — both for themselves, and for their children. Of course, these fears about the disappearance of employment have been experienced and expressed before. Indeed, from the onset of the Industrial Revolution, workers have worried about how new machines

would affect their livelihoods; and huge structural changes in labour markets (such as the mass depopulation of agriculture) also sparked concern and dislocation.

Keeping these challenges in historical perspective is useful. Despite rapid flux in both the technology of production and the organisation of work, there is still a fundamental and lasting centrality for paid work in the economy. Contrary to more spectacular predictions, “work” is not disappearing. While the specific tasks, skills, and tools associated with work will change, as will the nature of employment relationships, paid work itself will remain the dominant way most Australians support themselves — even if the tasks they perform, the technology they use, and the specific terms under which they are hired and compensated change.

In short, paid work is not going to disappear. The economy cannot function without it. Future university graduates will continue to work: to support themselves and their families, and to underpin national macroeconomic success. But whether the world of work they enter is positive and uplifting, or desperate and exploitive, depends entirely on the economic, regulatory, and social context that they will experience. And this in turn depends on the collective choices and priorities determined and implemented through policy at the organisational, sectoral, and governmental levels of the labour market.

The future of work for the next generation of graduates depends on what Australians decide collectively to make it.

The Trajectories of Technical Change

While innovation and technological change have been disrupting economies and societies for generations, there are some clear ways in which the current wave of technological change is indeed “different” from those that preceded it — and hence its labour market impacts may be less sanguine. Current innovations in computing and automation are capable of undertaking new categories of tasks that in the past were not amenable to automation or machine-aided production.

Specifically, computing power can now be applied to the mechanisation of non-routine tasks: those requiring judgment, flexibility, and decision-making capacity, in the face of non-controllable or unpredictable environments. Applications which embody this expanded scope for computer-controlled work include machine learning, data mining, machine vision, artificial intelligence, and mobile robotics. In every case, computers are informed by analyses of large databases of past experience, to develop the capacity to make best judgments in the face of unpredictable circumstances. This allows them to undertake non-routine functions, covering both manual and cognitive tasks.

Many applications of these new technologies will substantially alter the quantity and quality of work in future years. Twelve key examples of employment-disrupting technological change are listed in the accompanying table. But of course, the very essence of innovation is its unpredictability. It would be folly to attempt to predict the specific ways in which new technologies will be deployed, and how they could transform

current work. Therefore, focusing on enhancing the capacity of labour market participants and institutions to adapt to unpredictable technological change will ultimately prove more effective than attempting to guess which specific fields and skills may (or may not) be in high demand in the future.

Amidst all of these complex and overlapping sources of change, it would be a mistake to focus solely or unduly on technology as the only “disruptor.” Moreover, it is wrong to interpret technology itself as an exogenous, uncontrollable force. After all, what we call “technology” is actually the

composite of human knowledge about how to produce more advanced goods and services, using better tools and techniques. Innovation involves putting human ingenuity to solving certain problems, based on particular identified concerns and interests. Technology, therefore, is neither “autonomous,” nor neutral: the problems we turn our collective creative attention to, always reflect the concerns and priorities of those sponsoring the inquiry.

A Dozen Game-Changing Technologies	
<i>Innovation</i>	<i>Applications and Impacts</i>
Artificial intelligence, machine learning	Automation of non-routine tasks in uncontrolled settings; preception, speech recognition, decision-making
Advanced robotics	Machine performance of complex, flexible tasks, including in mobile applications, homes and services
Autonomous transportation	Reduction of direct labour in transportation; improvements in safety, congestion and fuel efficiency
3D printing / additive manufacturing	Reduction of cost in components and sub-assemblies; facilitates custom and localised prototypes and manufacturing
Internet of things	Applications in manufacturing, infrastructure, transportation; investments in sensors and communications systems
Mobile and cloud-based data processing	Data streaming, matching, and financial applications; transportation functions; long-distance specialised services
Big data analytics	Predicts behavioural trends; facilitates machine learning; impacts for transportation and infrastructure
Blockchain	Facilitates decentralisation of secure transactions; applications for identification and privacy; automation of financial services
Alternative energy systems	Sustainable energy investments; heating/cooling and transportation equipment manufacturing
Bio-engineering	Customised medical treatments; medical devices and imaging; biological and genetic programming
Nanotechnology	Fabrics and materials; pharmaceutical design and delivery; electro-mechanical systems; manufacturing
Virtual & augmented reality	Entertainment applications; improvements in transportation, planning, machine control, medicine

And technology is not the only force of change buffeting the world of work. It may not even be the most important driver of the big changes in job quality and stability that are already visible. The organisation of work is also changing dramatically, with the shrinking importance of traditional “standard” employment (full-time, permanent, year-round jobs with normal entitlements) and the growth of alternative arrangements (part-time, casual, self-employed, and contractors) marked by generally higher degrees of instability and precarity. Numerous other factors will also disrupt work in the future, including:

- Environmental pressures.
- Globalisation.
- Fiscal pressures.
- Demographic pressures.

Technology and Jobs: Dire Predictions, Nuanced Reality

Since machine learning and other new computing strategies allow for a wider range of tasks to be computerised, economists are now considering the potential impacts on employment patterns. One approach has been to conduct detailed skills audits of various occupations, to simulate their amenability to computerisation. These audits analyse the specific task content of different jobs, and develop judgments on the extent to which they could be automated — given new capacities to apply computing power to non-routine functions. Some research using this approach predict that up to half of all existing jobs may be automated within several years.

These dire predictions need to be interpreted with considerable scepticism. There are many countervailing forces that will tend to create other work, even as the process of automation unfolds. There will be new jobs associated with the design and engineering of new technology, and new jobs

created by virtue of the expanded capacity of new technology to produce a broader range of goods and services. Even within functions that have been automated, a continuing demand for labour will be experienced, associated with the operation and maintenance of the new machinery. Moreover, there are many prerequisites and hurdles that will be encountered (including challenges in job design, infrastructure, training, regulation, and social acceptance) before the full potential for computerisation and automation is realised.

Real-world data regarding the impact of technology on the quantity and composition of employment also suggest that dramatic headlines about technological job loss are overstated. If in fact technological change was facilitating a generalised “replacement” of workers by machines and other forms of tangible capital, this should be visible through several critical metrics. First, employers would need to use more capital in production, evidenced by accelerating investment in technology (both tangible capital, such as machinery and equipment, and intangible capital such as computer software and other intellectual property). Secondly, that expanding stock of capital should become larger relative to the size of the workforce: by displacing or reducing required labour inputs, labour-saving technology should result in a greater ratio of capital used in production relative to labour. Finally, the resulting combination of more output with fewer workers must be visible in an acceleration of productivity growth: that is, the amount of value-added produced, on average, by each worker who is still employed in the wake of the new technology.

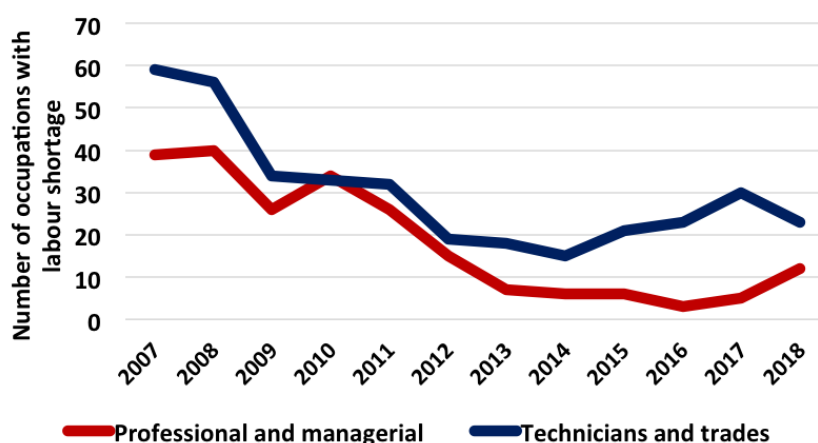
Perhaps surprisingly, none of these expected outcomes from automation and other labour-saving vectors of technological change are visible in the Australian context. In fact, to the contrary, if anything there has been a visible deceleration of capital accumulation and productivity growth — and perhaps a perverse decline in the general capital intensity of production. Business capital investment has been historically weak in recent years; rather than worrying that companies are investing too much in new technology, we should be concerned with how to encourage them to invest more. So while work and production in certain enterprises, industries, or occupations may be being transformed by new technologies, there is no evidence that this is an economy-wide phenomenon.

The Outlook for Skills: Not What You Might Expect

Despite a generally weak labour market, marked by stubbornly high unemployment and underemployment, employers often complain that they cannot find appropriately skilled workers. Shortages of scientific, computer, and other STEM skills are reported to be especially acute. But these reports of skill shortages are not always backed up with concrete empirical evidence. And those employer complaints may be the legacy of years of excess labour supply, during which employers came to expect ample numbers of job-ready applicants for any job they advertised.

In fact, empirical data suggest that these shortages have become notably less acute in recent years. For example, the Commonwealth Government reports far fewer shortages of

FIGURE: NUMBER OF PROFESSIONAL AND MANAGERIAL OCCUPATIONS, AND TECHNICIANS AND TRADES OCCUPATIONS WITH REPORTED SKILLS SHORTAGES, 2007-2018



Source: Dept. of Employment, Skills, Small and Family Business (ESSFB) (2019).

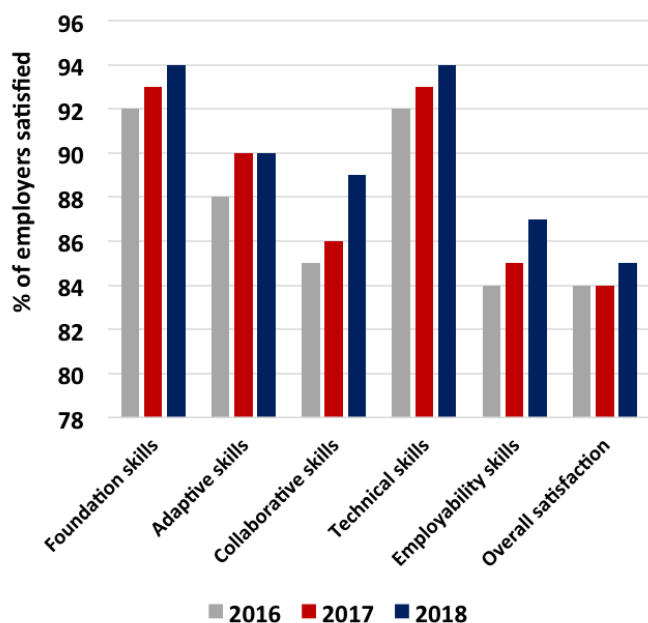
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specified occupations in professional and technical fields than in the years prior to the Global Financial Crisis (see figure).

Similarly, data collected by the OECD cast further doubt on the assumption that there are pressing shortages of specific occupations in Australia — and STEM-related occupations in particular. Instead, the OECD research highlights the importance of the various underlying components of a worker's productive capacity: skills, knowledge and abilities. These are the building blocks with which educated workers assemble composite competencies. The OECD finds, surprisingly, that Australia does not face a shortage of technical skills (which are well-balanced with employer demands). Instead, it is more basic and multi-dimensional competencies that are in short supply: things like verbal and reasoning abilities, and basic problem-solving and social skills.

■ It is more important to enhance our capacity to adapt to unpredictable technological change, than trying to predict which specific occupations will be in demand.

FIGURE: AUSTRALIAN EMPLOYER SATISFACTION WITH GRADUATE SKILLS, 2016-18



Source: QILT Employer Satisfaction Survey Reports, 2016-18.

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This evidence suggests, again, that education policy-makers and administrators should not be unduly influenced by ever-changing demands from employers to produce larger numbers of graduates in specific occupations or qualifications. A more lasting strategy for adapting higher education to technological change would emphasise those building blocks — which will remain essential to career success no matter how technology evolves.

On the whole, Australian employers report that they are very satisfied with the performance of newly-hired graduates in the workplace. 85 per cent of employers were satisfied overall with graduate employees' skills in 2018 (an increase from previous years; see figure). It is difficult to conclude from this evidence that there is any crisis in graduate employability.

In sum, while technical awareness and “hard skills” are needed to embrace technological capability, critical thinking, creativity, problem-solving, and leadership and people management will be increasingly important in the future of work. Despite popular derision of arts degrees, industry leaders now actually want more arts graduates in their workforce — given their training in abstract, critical methods of inquiry. Many Australian employers in creative digital fields, for instance, now prefer employing humanities and social sciences graduates (rather than programmers), precisely because they “know how to learn.”

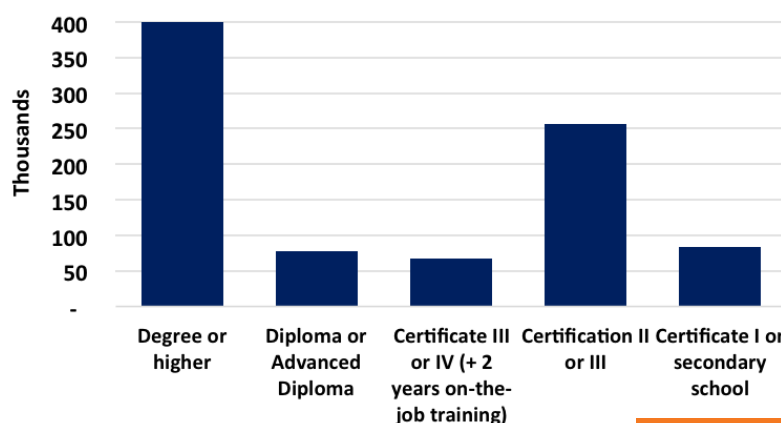
Degrees Still Matter...

In Australia, university degrees have an enduring and growing importance as job market entry qualifications: 32 per cent of all jobs require a Bachelor degree or higher qualification, and this share is projected to increase. Almost half of all jobs created over the next five years (over 400,000 jobs) are expected to require a university degree or higher qualification (see figure).

As well as gaining an important leg up in entering growing occupations, university graduates presently enjoy greater success in the job market compared to those without degree qualifications. 80 per cent of all persons with a Bachelor degree or higher are employed, compared with only 63 per cent of all persons without higher education (including those with diplomas, certificates, or no post-school qualifications). People with Bachelor degrees or higher are also more likely to be employed on a full-time basis (63%) compared to persons without higher education qualifications (41%).

Higher education attainment also underpins higher average incomes for university graduates — called the “graduate premium.” Career earnings for Australian graduates with a Bachelor degree are much higher than for persons with Year 12 as their highest qualification. For women, the median female graduate will earn over \$600,000 more than the median female with no post-school qualifications over her lifetime. Male graduates enjoy an even larger lifetime graduate earnings premium, at around \$790,000 more than males without post-school qualifications.

FIGURE: PROJECTED NEW JOBS TO 2023 BY QUALIFICATION



Source: Dept. of ESSFB, skill level projections, five years to May 2023.

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...but Graduate Employment Outcomes Have Deteriorated

Full-time work opportunities for graduates have been less abundant since the GFC, after which labour market conditions for young workers generally worsened. The share of Bachelor degree graduates in full-time employment steadily increased from the late 1990s until 2008, rising from around 80 per cent, to a high of 85 per cent in 2008. But the share of Bachelor graduates in full-time work then declined markedly, falling to its lowest rate in 17 years in 2014 at only 68 per cent. There has been some improvement since then, bouncing back to around 73 per cent in 2018 (see figure). But that remains significantly below the pre-GFC peak in 2008.

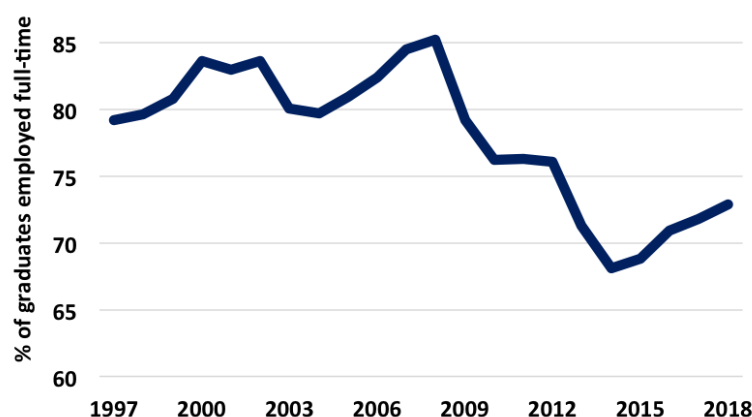
As full-time work opportunities have become scarce, underemployment among graduates (represented by the portion of graduates in part-time or casual work but who would like to work full-time hours) has increased. Underemployment increased from around 10 per cent of all Bachelor degree graduates in 2008 to around 20 per cent at present — 1 in 5 graduates.

Precarity in working hours has also increased for young workers. Claims that young workers lack entrepreneurial skills or that “enterprise” skills are in short supply are refuted by the highly tactical and creative skills demonstrated by young people as they navigate the current weak labour market. They must invoke a wide range of entrepreneurial and creative strategies just to support themselves.

Young workers increasingly juggle part-time employment with study, and many work multiple jobs before obtaining a standard full-time job (if they ever do). The percentage of young people working full-time in casual jobs (without job security and normal paid leave entitlements) has more than doubled since 1992: from around 10 per cent of workers aged 15–24 in 1992, to 21 per cent in 2017. Multiple-job holding is also prevalent, with 18 per cent of full-time workers aged 15–24 combining multiple jobs in an effort to generate enough hours and income.

Full-time employment outcomes for graduates of vocational degrees are markedly better than for graduates of generalist degrees (see figure). Among generalist degrees, graduates of business and management had the highest percentage in full-time employment in 2018, at around 78 per cent, followed by law and paralegal studies at 77 per cent. In contrast, the degrees with the lowest rates of full-time employment were creative arts (52 per cent) and communications (61 per cent). Despite claims of a STEM graduate deficiency, science and mathematics graduates actually experienced some of the worst full-time work outcomes, with only 65 per cent finding full-time jobs within 4 months of graduation. Conversely, vocational degrees in teacher education, engineering and nursing all realised between 79 and 83 per cent full-time employment rates; medicine graduates had the highest percentage of full-time work among all fields of study, at almost 95 per cent.

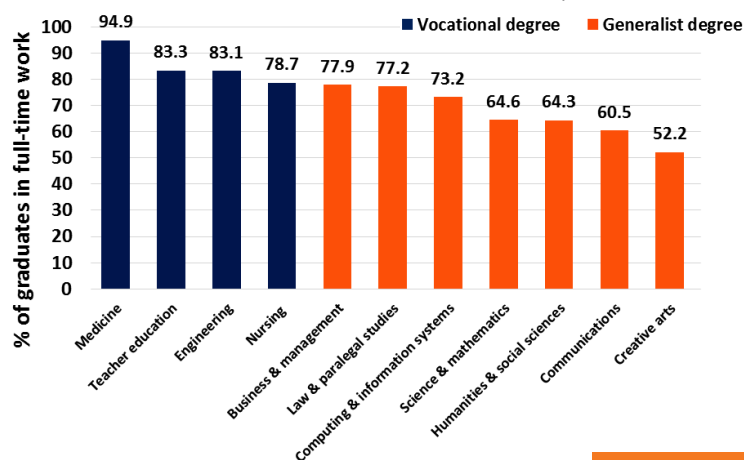
FIGURE: BACHELOR GRADUATES WORKING FULL-TIME 4 MONTHS AFTER GRADUATION, 1997–2018



Source: Graduate Careers Australia (1997–2015), QILT (2016–2018).
Graduates surveyed four months after graduation.

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FIGURE: EMPLOYMENT OUTCOMES FOR GRADUATES BY STUDY FIELD, 2018



Data: GCA (2018), 4 months post-graduation for undergraduate degrees.

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Australia's Education-to-Work System is Fragmented and Ineffective

Characteristic of liberal market economies, Australia has no comprehensive labour market policy or strategy. Individuals are largely responsible for navigating the education and training system based on their own interests, capacities and means. Education policy is fragmented across multiple institutions (schools, universities, vocational education, and employers), and governed through multiple agreements between the state and federal governments. This “light touch” approach to managing education-to-jobs pathways begins in the secondary schooling system, as high-school-aged students are urged early on to begin choosing their career pathway(s).

Within the overall post-secondary education system, universities, VET, and on-the-job training each play distinct roles in workforce development. However, each of these streams has encountered major problems arising from a lack of fiscal support and a lack of coherent, long-term planning:

- Universities are the major degree-granting institutions that produce a pool of graduates with broad knowledge and skills; graduates compete for jobs, with the links between qualifications and jobs influenced largely by employer preferences and market forces. Despite increased efforts by universities to foster more developed and reliable employment pathways for their graduates, these pathways remain underdeveloped. The major exception is regulated occupations such as teaching and medicine, which have mandatory integrated work placements.
- Australia's vocational education system was once the source of well-established and dependable education-to-jobs pathways through apprenticeship and traineeship programs. However, the system underwent dramatic restructuring after 2012, with funding cuts to public institutions (primarily the TAFEs), expanded scope for private training providers, and delivery of large public subsidies through individual students. The collapse of private providers, the declining capacity of the TAFEs, and scandals involving the misallocation of public subsidies have deeply damaged once-reliable vocational pathways. Enrolments in apprenticeships and traineeships have halved since 2012.
- Weak business investment, high underemployment, and job precarity have coincided with an employer retreat from on-the-job training and skills programs. An industrial relations system that encourages competition on low wages, low-trust employment relations, and access to an abundant supply of underutilised labour, all encourage employers to treat labour primarily as a transient and disposable productive input. This reinforces the reluctance of individual firms to invest in better on-the-job training for fear that trained workers will simply leave for other jobs, hence allowing other firms to benefit from their own investment.

This fragmented and often contradictory system produces sub-optimal outcomes for both graduates and employers. A more coherent and integrated approach to identifying future needs, adjusting educational offerings accordingly, and supporting students through their education and eventual job placement would facilitate much stronger education-to-work transitions.

Learning from Others

Australia has followed a “laissez-faire” approach to graduate-to-work transitions: largely leaving it up to individual graduates to find their own way and adapt to change. Other countries, in contrast, provide more active labour market policies to facilitate young workers' transitions from education to jobs. Here are just a few examples.

In response to a significant rise in youth unemployment (especially in southern Europe) after the GFC, many countries established new (or strengthened existing) youth labour market programs. For instance in Italy, *AlmaLaurea* — a public consortium of 64 Italian universities and social partners — operates a centralised online database of graduate profiles (covering 70% of all graduates in the country) and job vacancies. The system connects job seekers with employers, who advertise vacancies and undertake entry-level recruitment.

France introduced a program extending internship roles to university students, bound by a legal contract called “*convention de stage*.” Contracts must outline the professional learning objectives of internships, how the objectives relate to the student's university studies, and the hours, conditions and pay of the role (to protect against exploitation).

Sweden offers a job guarantee for young people that provides individualised job search assistance to all participants, backstopped with a guarantee of either a job offer, study opportunity or access to small business start-up funds. Sweden emphasises precise matching of young participants to companies for training and work experience to increase retention of young workers in companies at the completion of the scheme.

Some countries (like Germany, Austria and Switzerland) did not experience a large rise in youth unemployment after the GFC, largely due to the success of their public-funded dual-training systems. They provide hands-on work experience to young people, while they undertake formal classroom training in vocational schools; they also match vocational graduates immediately with paid positions after completion.

“Australia's fragmented and often contradictory system produces sub-optimal outcomes for both graduates and employers.”

Nine Recommendations for Better Graduate Employment Outcomes

Australia's education-to-jobs system has largely operated on the mistaken assumption that a highly-skilled, flexible workforce could self-adjust to changing labour market and skills needs. But this faith in the effectiveness of individual responsibility and decentralised, market-driven adjustment has unravelled in the wake of inadequate quality employment opportunities, and poor results in matching new graduates with those opportunities that do exist. University graduates today are at the "coalface" of a shattered social compact: they invested in impressive university qualifications which no longer provide reliable pathways to jobs, or protection against un- and underemployment.

The university sector can and must do a better job linking its graduates with meaningful, quality employment. These challenges are exacerbated by slowing business investment (including capital spending, research, and on-the-job training), weakening labour market conditions, fiscal restraints on public education funding, and an absence of national education policy leadership.

This is why Australia needs a new social compact for higher education: one which engages all stakeholders; supports graduate transitions with practical resources, data and planning; balances the immediate skills needs of employers with the broader interests of society in education and knowledge; and prioritises quality and fairness in employment. Education policy must also be complemented by a vision for long-term economic development, with a central focus on stimulating employment in quality, full-time, meaningful jobs. Here are nine concrete recommendations that would start to build a more integrated, inclusive, and effective education-to-work system:

#1: Establish a National Higher Education Policy Framework and Capacity: Without a long-term higher education plan that facilitates coordination between different levels of government and individual educational institutions, and better linkages between universities and employers, a timely and effective response to better addressing future skills demands will be harder to achieve. A new national higher education governance body should be established to provide policy advice and coordination. It would be comprised of representatives from both state and Commonwealth governments, industry, universities and other key stakeholders, and would guide the university sector regarding curriculum offerings and employment placement supports; share information on innovations and best practices in education-to-jobs planning; and encourage and facilitate greater links between universities and industry.

#2: Link Universities into an Innovation-Intensive, Value-Added, Export-Oriented Industry Policy: Universities should be engaged as an active and central stakeholder in a national industrial strategy to support the expansion of advanced, innovative, export-oriented high-value sectors. These industries can renew productivity growth, improve export quality, and boost research and innovation activity (which has perversely diminished in Australia in recent years). And they can serve as sources of high-quality employment opportunities for university graduates. Better avenues for the commercialisation of research and development undertaken in universities would be another valuable role for universities in a revitalised Australian industry policy.

#3: Reliable Public Funding for Universities: Direct public funding of Australian universities has been declining relative to the economy since the mid-1980s, and now constitutes only 0.9 per cent of GDP (well below the OECD average). Demand-driven funding has successfully expanded access to university education, and facilitated labour market responsiveness to changing skills demands; that model should be re-instated. Universities also need increased public core funding, which should be attached to improved course quality, participation in national-level skills coordination, and expanded employment-to-jobs programming.

#4: Expanded Public Funding for Research: Publicly-funded research (including basic research as well as more immediate applied innovation) is a key input that fuels private sector investment in both additional research and in commercialisation. Australia must invest more in public research in universities and in public institutions such as the CSIRO, to expand innovation, support private sector R&D, and provide meaningful employment for Australia's graduates (including those in STEM).

#5: Inform Curricula and Programs with Job Clustering Analysis: The current structure of most degrees around distinct occupations must be reviewed in light of changing patterns of occupational mobility and the fragmentation of traditional careers. Universities should seek to provide graduates with the ability to identify and obtain sets of expertise and transferrable skills that may be "ported" across different roles throughout their working lives. Occupational stream models based on comprehensive jobs clustering analysis provide a strong vehicle for identifying and nurturing this transferability earlier in students' courses of studies.

#6: Improve Labour Market Information Systems, and Create an Education/Skills/Jobs Data Portal: Both workers and employers need access to timely and high-quality labour market information to facilitate job matching and fast transitions. There is presently no integrated higher education and labour market data source available in Australia. Investment in a world-class labour market information system would need to integrate the efforts of existing institutions (like the ABS and the Department of Employment, Skills, Small and Family Business), along with information gathered from the VET sector, universities, and employers. The goal is to create a comprehensive labour market portal accessible for employers, students, graduates, and educational institutions.

#7: More Comprehensive and Timely National Employment and Skills Forecasts:

A related priority should be to enhance the quality and timeliness of labour market forecasting by industry, occupation, and skillset. The Department of Employment, Skills, Small and Family Business (ESSFB) presently develops annual employment projections by industry and occupation, based on 5-year forecasts. However, the methodology for these forecasts mostly involves extrapolating simple time series data on employment growth, and is often viewed as unreliable. Government should invest in developing more sophisticated, detailed and publicly available employment forecasts, which help to identify longer term labour market needs and skills demands (over 10-year as well as 5-year periods).

#8: Social Partnerships in Governance of the Education-to-Jobs System:

Australia has weak stakeholder involvement in the governance of its education and vocational systems, unlike the more effective and inclusive systems in most other OECD countries. Coordinated market economies like Germany, Denmark and Sweden have developed stronger education-to-jobs pathways (including advanced apprenticeships, and lifelong learning systems), administered through social partnerships – engaging employers, unions, government and education institutions.

#9: Coordinating Employee Voice with Skills and Training Initiatives:

In turn, stronger social partnerships in Australia's skills system will require developing a more consistent, respected and coordinated system of employee voice. Unions can support implementation of new productivity-enhancing technologies, alerting employers to skills and training demands, and assisting displaced workers to be retrained in new roles. In many advanced economies, unions also play an important role in coordinating and implementing the broader future skills system – for instance, through active participation in vocational training institutions and planning.

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Conclusion: Launching Graduates into a Great Future

Australia's higher education system has been facilitating adjustment to rapid changes in the world of work for decades. This success is visible in many indicators: rising degree attainment among the working-age population, the continued relative success of graduates in employment and income, and the major shifts in employment from manual and routine work toward professional and human services — shifts that would have been impossible without the university system's ability to educate large numbers of appropriately trained graduates.

The value of university education, both for the individuals who obtain it and for society as a whole, remains clear. Despite the common focus on graduates acquiring specific technical and business skills — to meet the supposedly insatiable appetite of employers for technological expertise and entrepreneurial knowledge – more balanced evidence indicates that Australia actually has experienced surprisingly minimal shortages in engineering, technology, and business and management knowledge. Universities should take heed of evidence that employers' strongest demands are for basic and flexible skills like critical thinking, communication, and problem-solving.

If productive lifelong learning is to become part of everyday life, graduates will need more than generic employability skills. They need the capacity to both adapt to changing circumstances, and to meaningfully shape their work experience in a realistic, informed and ongoing way. Critical thinking, creativity, problem-solving, leadership and people management skills will all be important in that regard.

Universities should be integrated into a comprehensive continuous learning system (along with VET and other post-secondary training providers), underpinned by social partnerships in governance, supported by adequate and reliable public funding, and informed by high-quality and timely labour market planning data. Education policy must have a vision of its role in supporting long-term economic and social development, centred on stimulating the creation of quality, full-time, meaningful jobs; education policy should not be unduly focused on specific, immediate needs of employers, nor shaped solely by what employers and other private donors are currently willing to invest in. To this end, universities need more public funding. That funding should be attached to requirements for national policy coordination among universities, and stronger mechanisms for connecting public higher education research to the development of an innovation-intensive, high-value export-oriented industry policy.

With more public resources, better coordination among higher education institutions and other stakeholders, and stronger pipelines linking universities and their graduates to high-quality employment opportunities, Australia's universities can make an enormous contribution to preparing Australia's future workers for the uncertain but exciting world they will face.

For more details and statistical sources, please see our full research paper,

The Future of Work for Australian Graduates,
available at graduatecareers.com.au
or futurework.org.au

