

UNIVERSITIES AUSTRALIA SUBMISSION

SUBMISSION TO PRODUCTIVITY COMMISSION INQUIRY INTO PRODUCTIVITY

MARCH 2022



UNIVERSITIES
AUSTRALIA

This work is licensed under a **Creative Commons Attribution 4.0 International Licence**.

Further inquiries should be made to the Chief Executive:

1 Geils Court, Deakin, ACT 2600

Ph: +61 (0)2 6285 8100

Email: contact@universitiesaustralia.edu.au

UNIVERSITIESAUSTRALIA.EDU.AU

ABN 53 008 502 930

CONTENTS

Contents	3
1 Executive summary	4
2 Productivity and innovation: Key to long-term prosperity.....	8
3 Australia’s future depends on a strong university system.....	11
4 The university role in preparing a skilled workforce to enhance productivity 14	
4.1 Graduates’ transition to the labour market.....	15
4.2 Meeting demand for graduates	17
4.3 Supporting productivity-enhancing life-long learning	20
4.4 Working with industry	21
4.5 Professional accreditation of university courses	24
4.6 Impact of COVID-19 on higher education	26
5 Role of university research	29
5.1 The contribution of Australia’s university research system to productivity.....	29
5.2 Industry R&D and research commercialisation	36
6 Regulation and productivity	39
Appendix 1: Universities are pillars of their local communities.....	41

1 EXECUTIVE SUMMARY

Universities are central to productivity – and productivity growth – especially in an advanced economy like Australia's.

This submission outlines the many ways in which Australia's universities contribute to the nation's productivity and highlights how these contributions will grow in importance. We recommend some policy initiatives to secure and boost these contributions, and to increase their effectiveness.

Universities' main productivity contribution is through teaching and research. Universities teach the workforce of the future, prepare young Australians for their careers and deepen the skills of the existing workforce. By training skilled graduates, universities power businesses to innovate and thrive.

University researchers make the discoveries that enhance businesses productivity and sharpen the competitive edge. Universities lay the groundwork for brand new industries and technologies such as quantum computing.

By partnering with firms, university researchers develop new products and better ways of doing things.

Universities are engaged in their communities, well beyond their roles in teaching and research. Universities are often a big employer and main economic driver in their regional and urban communities. Universities' actions and responsiveness in recent crises including bushfires, floods and a global pandemic are powerful reminders of universities' integration into their communities, and of what they can contribute.

Graduate skills, research and innovation and a wide range of activities to support the community have always been fundamental to Australian universities. These contributions now have a bigger impact, and the nation's need for them is greater than ever before.

Universities' contributions to the economy and society often have an immediate impact, but higher education and research have an even bigger return in the long term. Accordingly, universities take a long-term view of what they can do for the nation.

This means that stable and predictable policy is fundamental to maximising universities' effectiveness, impact and contribution to national productivity. Higher education and particularly research has been subject to frequent, ad hoc policy changes for several years from a range of portfolios. Especially in research – inherently a long-term activity – such changes are not conducive to effective investment for long-term gains. In teaching and learning it is also important to look to the long term if we are to stay ahead of work force needs.

Government projections show that nearly a million new jobs will be created in Australia from 2020 to 2025. More than half of these will require a university degree, and almost all will require some form of post-secondary education.

Demographic growth in the youth population in the middle of the current decade, combined with increasing employer demand for graduate skills, means that many more people will seek higher education and the opportunities it brings. Government should act now to ensure that there will be enough Commonwealth Supported Places to accommodate this increased demand.

Similarly, we call for policy measures to ensure that every Australian who can benefit from higher education – regardless of their background – has the opportunity to go to university. In particular,

we recommend that Government provide an uncapped supply of university places to all Aboriginal and Torres Strait Islander students – not just those from regional and remote areas.

Upskilling – and re-skilling – Australians already in the workforce is an important productivity driver. Lifelong learning will become increasingly important, and participation is rising. Universities have responded by developing short, just-in-time microcredentials to meet this need. These targeted, flexible learning measures could be made more widely available if income-contingent loan systems were made available to Australians undertaking microcredentials.

The COVID-19 pandemic has reminded the nation of the fundamental role that universities play in health – through education, research and in providing policy-relevant, practical expertise. At the same time, the pandemic has affected education in health disciplines more severely than education in other fields, by making it difficult – and sometimes impossible – to run the clinical placements that are essential to health degrees. This submission makes recommendations about modest, time-limited programs to support vital clinical education at a time when it is more important than ever.

The university research system fulfils several different functions, all of which are important. University research is a key element in Australia's preparedness to face future crises and shocks, as the last few years have again reminded us. In the longer term, research is vital to building Australia's sovereign capability, and to enabling communities to adapt to and thrive on change.

Research is an indispensable ingredient in productivity, growth and competitiveness. Australia's universities do the majority of the nation's research, from fundamental through to applied research. This work produces the new knowledge that helps Australia to innovate and to move up the value chain.

Research plugs Australia into global knowledge flows, enabling us to benefit from and to contribute to the global knowledge base.

Finally, university research informs our universities' world-class teaching, and keeps students' learning right at the frontier of knowledge.

Because university research benefits Australia in several different ways, it is important to have a balanced system of investment that effectively supports all of these objectives.

Of course, business and government also do research. But over recent years, universities' share of the nation's total research effort has increased, even as the real contribution from Government – as a percentage of GDP – has decreased. Business investment in research has declined to levels that may reduce Australia's capacity. We argue that a shift in public support for business research – towards direct support and away from tax concessions – can better support business to do research, and foster industry-university partnerships.

Translation and commercialisation of university research is important, but just as universities need to reach out, business needs to reach in. Public investment in university research must maintain the research pipeline: universities need to be able to conduct a reasonable volume of research across a wide range of areas to guarantee a supply of ideas to translate.

In the past 30 years, universities have fundamentally changed. They do more research, teach more students and have adjusted priorities in accordance with policy directions set by Government. Universities stand ready to further contribute to Australia's productivity and to its economic and social prosperity. Predictable, long-term policy settings across portfolios are a critical factor in achieving this.

With the support of Government, the nation's universities can partner with business and community to make Australia a more productive and prosperous place, and a better place to live.

Recommendation 1:

The Productivity Commission affirm that Government policy and investment settings should ensure a strong, vibrant university and research system as a fundamental driver of Australia's productivity growth.

Recommendation 2:

The Productivity Commission affirm that the funding framework for government-subsidised university places should be adequate to meet future student demand due to changes in population and the labour market.

Recommendation 3:

The Productivity Commission consider that uncapped places should be extend to all Aboriginal and Torres Strait Islander students, not just those from regional and remote areas.

Recommendation 4:

The Productivity Commission support extension of the Higher Education Loan Program (HELP) to Australians undertaking non-award microcredentials.

Recommendation 5:

The Productivity Commission consider a time-limited health service placement adjustment package to support health workforce supply and skills growth.

Recommendation 6:

The Productivity Commission consider a time-limited targeted grant program to support additional clinical education technology in the university sector.

Recommendation 7:

The Productivity Commission consider the appropriate balance of the Government's investment in university research to enhance Australia's productivity.

Recommendation 8:

The Productivity Commission consider whether Australia's research and development effort would be better supported through shifting the balance between direct support programs and indirect schemes like the R&D Tax Incentive.

Recommendation 9:

The Productivity Commission consider measures to:

- identify and deal with regulatory overlap;
- coordinate regulatory and reporting requirements more effectively in different portfolios; and
- work with stakeholders to understand the balance of regulatory benefit and cost.

2 PRODUCTIVITY AND INNOVATION: KEY TO LONG-TERM PROSPERITY

As the Nobel Laureate economist Paul Krugman famously observed nearly 30 years ago, 'productivity isn't everything, but in the long run it's nearly everything'.¹

Especially in advanced economies like Australia, continued growth in economic activity, employment and living standards depends largely on improving productivity. Labour productivity has been the most important contributor to Australia's income growth over the last 30 years, contributing over 80 per cent of growth in real gross national income per person. According to the *2021 Intergenerational Report*, labour productivity is projected to remain the most important source of Australia's income growth over the next 40 years.

Consistent with other advanced economies, Australia's labour productivity growth has slowed in recent times. Labour productivity growth over the last complete productivity cycle averaged 1.2 per cent per year, which was below the 30-year historical average to 2018–19 of 1.5 per cent.² Australia's labour productivity growth fell to 1.07 per cent in 2020–21.

As the Organisation for Economic Co-operation and Development (OECD) noted in their *2021 Economic Survey for Australia*, raising productivity growth is needed for Australia's sustainable economic recovery from the impacts of COVID-19. From a fiscal perspective, productivity growth is an important driver for the Australian Government's personal and company tax receipts over the longer term.³

Without advances in technology, it will be difficult to improve – or even maintain – capital productivity. Similarly, labour productivity – especially in a 21st century knowledge economy – depends on improvements in human capital.

According to OECD estimates, 50 per cent of economic growth in member countries results from innovation, and the proportion is expected to grow.⁴

At the firm level, innovation makes a clear difference:

'Innovation active businesses make up 45 per cent of all employing businesses in Australia, but contribute to over 60 per cent of sales and employment. They are 40 per cent more likely to increase income and profitability, twice as likely to export and two to three times more likely to report increased productivity, employment and training'.⁵

The impact is equally clear at a whole of economy level: research and development (R&D) explains up to 75 per cent of total factor productivity growth. There is a high return on investment: 10 to 30 per cent for private returns and more than 40 per cent for social returns.⁶

¹ Krugman, P. 1994, *The Age of Diminished Expectations*, MIT Press, Boston.

² Australian Government 2021, *2021 Intergeneration Report*, p.47.

³ Parliamentary Budget Office 2021, *Beyond the budget of 2021–22: Fiscal Outlook and scenarios*.

⁴ Cited in Department of Industry 2016, *Australian Innovation System Report 2016*, p.1

⁵ Department of Industry 2016, *Australian Innovation System Report 2016*, p.1

⁶ Department of Industry 2016, *Australian Innovation System Report 2016*, p.2

Innovation drives employment growth:

*'Innovative businesses encourage a virtuous cycle for skills, employment and labour market flexibility. Innovative businesses are significantly more likely to increase employment, training and more flexible working arrangements than non-innovators. Innovative businesses, particularly small ones, are also much more likely to be profitable and productive because of innovation leading to further demand for skilled workers.'*⁷

As an earlier edition of the Australian Innovation System report observed:

*'An educated and skilled workforce is essential for successful innovation because such a workforce is more likely to be able to generate and implement new ideas and to adapt to new technological and organisational change originating from elsewhere.'*⁸

Universities make an indispensable contribution to improving productivity. Both research and higher education drive technological improvements. New knowledge from research makes practical technological breakthroughs possible. Entrepreneurs and employees with a background in higher education – where learning is led by research – bring an open-minded and innovative approach that is quick to identify problems and opportunities for improvement, and is receptive to new and creative solutions.

The *2021 Intergenerational Report's* sensitivity analysis examines the impact of lower long-term underlying productivity growth on Australia's real GDP growth. The report found that if Australia's productivity growth converges to a lower rate of 1.2 per cent per annum by 2024–25 – instead of the historical average of 1.5 per cent – and remains at this rate of growth for the remaining projection period (i.e., until 2060–61), then:

- the level of real and nominal GDP are both projected to be around 9.5 per cent lower by 2060–61;
- nominal gross national income per person is also projected to be \$32,000 lower by 2060–61 compared with the baseline projection;
- lower GDP results in lower projected tax receipts, with the tax-to-GDP cap of 23.9 per cent being reached two years later compared with the baseline projections;
- wages will reduce by 9.25 per cent by 2060–61 (which results in lower indexation rates for some government payment programs);
- greater reduction in tax receipts compared to a slightly lower decline in government expenditure results in an underlying cash balance of 2.2 percentage points lower by 2060–61 as a share of GDP; and
- net debt is projected to be 22.7 percentage points higher by 2060–61 as a share of GDP.⁹

⁷ Department of Industry, Innovation and Science 2012, *Australian Innovation System Report 2012*, p.4

⁸ Department of Industry, Innovation and Science 2012, *Australian Innovation System Report 2012*, p.4

⁹ Australian Government 2021, *2021 Intergeneration Report*, p.53–54.

Australia needs a strong university system – now more than ever. In an age of rapid, unpredictable economic change, increasing Australia's capacity for productivity and innovation will equip individuals and firms with the tools to adapt to change, and to thrive in the new and ever-changing world.

Recommendation 1:

The Productivity Commission affirm that Government policy and investment settings should ensure a strong, vibrant university and research system as a fundamental driver of Australia's productivity growth.

3 AUSTRALIA'S FUTURE DEPENDS ON A STRONG UNIVERSITY SYSTEM

Successful nations understand the link between investing in higher education and research, and enduring national prosperity. This explains why many countries in our region and around the world are investing heavily in their higher education and research systems, and just as importantly, ensuring long term policy settings are combined with stable sectoral governance. They know that this investment yields substantial returns for the nation, for firms, for communities and for individuals.

Australian universities are inextricably linked to generations of Australian skills and innovation. In 2020, our universities educated almost 1.5 million domestic and international students. Not only are their own lives transformed – they transform the wider community and grow our economy.

At the same time, our universities pursue and promote research, knowledge and innovation. The independent, rigorous enquiry of Australian university researchers produces new ideas, discoveries, innovations and certainty, all built upon evidence. This knowledge is shared generously: it saves lives, creates new opportunities and guides Australia through great and challenging times.

Contribution to the Australian economy

Australia's university sector contributed around \$41 billion to the Australian economy in 2018 and supported almost 260,000 jobs.¹⁰ In 2019, international education was Australia's third largest export and largest services export, generating export revenues of \$41 billion. Australia's 39 comprehensive universities contributed an estimated 60 per cent of this revenue.

Economic modelling shows that the Australian economy was \$161 billion larger due to the nation's university-qualified workforce in 2018, with Australia's GDP being 8.5 per cent higher because of the impact university education has had on Australia's productivity. Each percentage point increase in higher education attainment – equivalent to around 50,000 more higher education qualified workers – is associated with a 0.09 per cent increase in GDP per annum. This represents \$1.8 billion in additional economic activity annually in 2018.¹¹

The impact continues with university research and development. For every dollar spent on university research, \$5 is returned to the economy. For every one per cent increase in university R&D, Australia's multifactor productivity rises by 0.13 percentage points. This is equivalent to an annual increase of GDP by \$2.4 billion over the long term.¹²

Higher education attainment: the private and public benefits

The benefits of university education for graduates are well known.

Australian Bureau of Statistics (ABS) data consistently shows that graduates perform better in the labour market than non-graduates. Unemployment rates of graduates have been consistently below the national unemployment rate by around two percentage points since 2007. In May 2021,

¹⁰Deloitte Access Economics 2020, *The importance of universities to Australia's prosperity*, Deloitte Access Economics Pty Ltd, Canberra.

¹¹ Ibid.

¹² Ibid.

while Australia's overall unemployment rate was 5 per cent, the unemployment rate for those with a Bachelor degree or higher was lower at 3.1 per cent. In the same reference period, unemployment rates for those with a diploma/advanced diploma and Certificate III/IV were higher at 4.1 per cent and 4.7 per cent, respectively, while those with no post-school qualifications recorded an unemployment rate of 7.3 per cent.¹³

Latest data published by the OECD shows net private returns for male university graduates are US\$247,700 higher than those with no post-school education over their working life for Australia in 2018. For female graduates, the net financial returns are higher at US\$284,500.¹⁴

According to the 2016 Census, university graduates earn 70 per cent more than people with no post-school qualifications and contribute substantially more to national taxation receipts.¹⁵

The public benefits are just as significant.

Latest data published by the OECD shows the net public benefit for a male university graduate is US\$146,000 higher than those with no post-school qualification over their working life for Australia in 2018. For female graduates, the net public benefit is lower at US\$123,400. Public benefits included higher tax revenue and lower social security transfer payments.¹⁶

A highly educated workforce benefits everyone. For every thousand university graduates who enter the Australian workforce, 120 new jobs are created for those without degrees. Wages for non-degree holders are boosted by \$655 a year – or \$12.60 a week – when more graduates join the national workforce.¹⁷

Employers' perceptions of graduates

The Government's *Employer Satisfaction Survey* consistently shows that employers are very satisfied with the new graduates that they employ. Employers employ graduates – and pay them a premium – because of the value they add to business. This is a clear-eyed and rational business decision.

Australian employers have continued to express their satisfaction with the skills of university graduates and their ability to make an immediate impact in the workplace. The *2021 Employer Satisfaction Survey* – which reported the views of 3,450 direct supervisors of recent graduates – found that 85.3 per cent of employers expressed overall satisfaction with their recent graduates in 2020, the highest satisfaction since the survey began in 2016 (see Figure 1). In 2021, more than nine-in-ten supervisors (92.1 per cent) indicated that the graduate's qualification prepared the graduate "very well" or "well" for their current employment.

The benefits can be even bigger when disadvantaged groups' participation in higher education grows. Expanding opportunities to participate in higher education is a matter of fairness and social justice. But it is also a matter of economic efficiency, as broader participation at university increases employment, wealth and economic impact for individuals and for the nation.

¹³ Australian Bureau of Statistics 2021, *Education and Work, Australia, May 2021*, cat. no. 6227, Canberra.

¹⁴ OECD 2021, *Education at a Glance 2021: OECD Indicators*, OECD Publishing, Paris, Indicator A5: What are the financial incentives to invest in education?

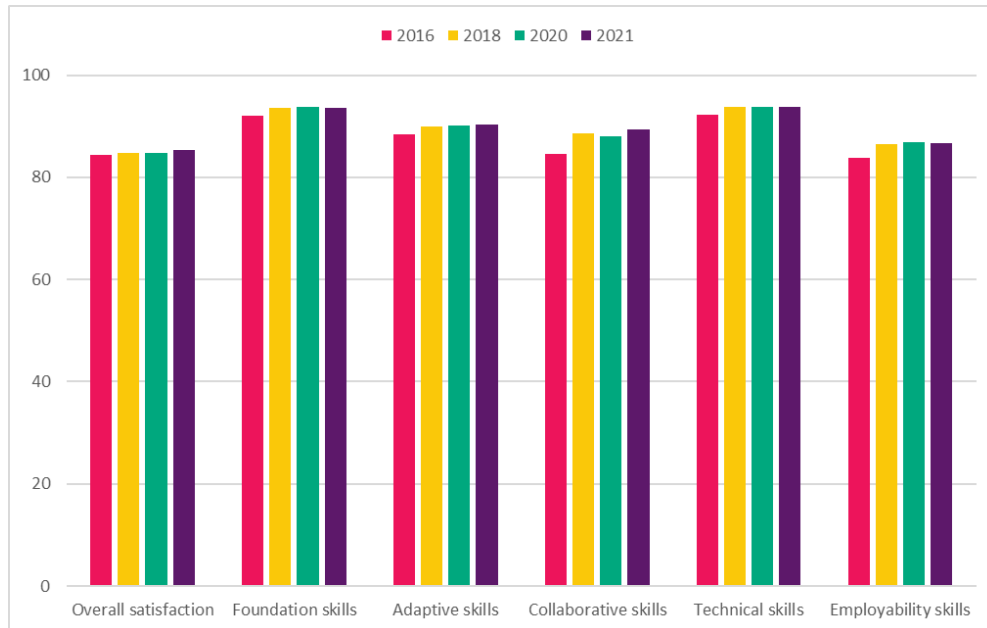
¹⁵ ABS 2016 Census, *Employment and income by qualification level – people aged 20-64 years*

¹⁶ OECD 2021, *Education at a Glance 2021: OECD Indicators*, OECD Publishing, Paris, Indicator A5: What are the financial incentives to invest in education?

¹⁷ Cadence Economics 2016, *The Graduate effect: Higher education spillovers to the Australian workforce*, Cadence Economics Pty Ltd, Canberra.

In particular, supporting Indigenous advancement in universities is a contribution to the nation's productivity and an overall public good. This can be achieved through measures aimed at increasing student enrolments and success, as well as through staff recruitment and retention to improve equity and draw on diverse talents and abilities. Moreover, drawing on Indigenous knowledge that is uniquely available to Australian universities (as opposed to universities in other countries) is conducive to increased productivity. These areas are key themes under the new *Universities Australia Indigenous Strategy 2022–2025*.¹⁸

Figure 1: Employer satisfaction with graduate attributes and overall satisfaction, per cent



Source: Social Research Centre 2022, *2021 Employer Satisfaction Survey: National Report*.

In addition to their contributions in preparing Australia's skilled workforce and the nation's research capability, Australian universities are pillars of their local communities. This has been clearly demonstrated during the recent flood crisis, the Black Summer bushfires in 2020 and during the nation's response to the COVID-19 pandemic. Universities have opened their campus facilities and shared their expertise and resources to support local communities, emergency authorities, students and staff. Some examples are presented in Appendix 1.

¹⁸ <https://www.universitiesaustralia.edu.au/publication/indigenous-strategy-2022-25>

4 THE UNIVERSITY ROLE IN PREPARING A SKILLED WORKFORCE TO ENHANCE PRODUCTIVITY

Australia is facing crucial skill shortages as the nation recovers from the COVID-19 pandemic. The ABS June 2021 *Business Conditions and Sentiments Survey* showed more than a quarter (27 per cent) of Australian businesses are having difficulties finding suitable staff.¹⁹ While some of this is due to Australia's internal border closures (32 per cent), the most significant factors impacting the ability for business to find suitable staff are a lack of job applicants (74 per cent) and job applicants not having the required skills or qualifications (66 per cent). Securing a skilled workforce is critical to the nation's productivity.

The National Skills Commission (NSC) has predicted Australia's total employment will increase by almost one million jobs (991,600) over the next five years, from 12.7 million jobs in November 2020 to 13.7 million jobs in November 2025. The health care and social assistance industry is projected to experience the largest employment growth (249,500 jobs), followed by accommodation and food services (139,900 jobs) and professional, scientific and technical services (131,100 jobs). The top five growth industries collectively represent more than 70 per cent of the total projected employment growth over the next five years.²⁰

According to these projections, 52.8 per cent of the additional million jobs over the next five years will require a Bachelor degree or higher. The number of jobs requiring a university degree will increase by 11.8 per cent (or 523,100 jobs), from almost 4.5 million jobs in November 2020 to just under 5 million jobs in November 2025. This is four percentage points higher than projected jobs growth overall (7.8 per cent). A further 41 per cent (or 403,900 jobs) will require a post-school qualification. Altogether, nearly all (93.5 per cent) new jobs will require a post-secondary qualification.

Australian universities play a pivotal role in addressing the nation's skill shortages. Government policy and funding settings should support universities to prepare the next generation of Australians to meet the future workforce needs of the nation. Policy settings will need to ensure that there are enough university places to accommodate growth in the youth population in the middle of the current decade (see section 4.2 for more detail). In addition, Government should support Australians of varying ages and at different stages of their careers to upskill and re-skill through undergraduate and postgraduate courses, including short courses and microcredentials (see section 4.3).

Government policy to expand opportunities for international graduates to remain in Australia after completing degrees in areas of labour market demand could help address Australia's current skills shortages. Currently, 42 out of 44 occupations in the Department of Home Affairs' Priority Migration Skills Occupation List require a university qualification.²¹

¹⁹ Australian Bureau of Statistics 2021, *Business Conditions and Sentiments, June 2021*, Canberra.

²⁰ National Skills Commission 2020, *2020 Employment Projections: for the five years to November 2025*, Labour Market Information Portal.

²¹ UA analysis based on analysis based on data matching of occupations on the Department of Home Affairs' Priority Migration List <https://immi.homeaffairs.gov.au/visas/employing-and-sponsoring-someone/sponsoring-workers/pmsol> and skill level as reported in the Australian Bureau of Statistics ANZSCO - *Australian and New Zealand Standard Classification of Occupations Version 1.3*.

4.1 GRADUATES' TRANSITION TO THE LABOUR MARKET

Changes in Australia's economic conditions and advances in science and technology will continue to reshape how Australians work. The extent to which individuals, businesses and the nation can benefit from these changes depends significantly on the readiness of Australia's education and training systems to help individuals build and maintain relevant knowledge and skills over their working careers.

Education at university level is not just about a graduate's first job – it is instead a foundation on which a graduate can continue to develop as a learner for the remainder of their working life. Hence, universities equip graduates with fundamental skills and knowledge that set them up to succeed in an ever-changing and globalised workplace. Graduate employment outcomes and surveys of employers show that university degrees prepare students well.

A 15-year-old Australian student at school today is likely to experience a portfolio career, potentially having 17 different jobs over five careers in their lifetime.²² They might be self-employed, working for other people or doing both and at the same time also working collaboratively with people from all around the globe. University education has always prepared graduates for careers – not just jobs – and set them up to adapt to and thrive on change. In today's fast-moving economy, this is more important and more visible than ever before.

For undergraduates who completed their degrees in 2018, 74.3 per cent of graduates were in full-time employment four months after completing their course. In 2021 – three years after completion – 88.9 per cent of the same undergraduate cohort were in full-time employment. Medium-term employment outcomes for graduates have remained above 88 per cent for cohorts that have graduated since 2011 (see Figure 2).

Graduates with a wide range of degrees – both specialist and generalist – do well in the labour market.

The *2021 Graduate Outcomes Survey – Longitudinal (GOS-L)* survey shows that graduates with specialist degrees have stronger employment outcomes shortly after graduation compared to graduates with generalist degrees. However, employment outcomes for those with generalist degrees are comparable to those with specialist degrees three years after graduation. In 2018, immediately upon graduation, the range between the highest and lowest full-time employment rates by study areas was 43.0 percentage points. By 2021, in the medium-term, this range had contracted to 22.1 percentage points. For example, in 2018, 79.4 per cent of nursing undergraduates were in full-time employment shortly after graduation compared to 65.1 per cent of humanities, culture and social sciences undergraduates. However, 92.3 per cent and 83.9 per cent of graduates from both disciplines were in full-time work in 2021.

In the short term, 73.7 per cent of undergraduates in full-time employment were in managerial and professional occupations upon graduation in 2018. This proportion increased to 77.9 per cent three years after graduation in 2021, slightly lower than the figure of 80.4 per cent in 2020 and 80.7 per cent in 2019 and 2018. Similarly, 62.3 per cent of all employed graduates (working full-time or part-time) who had completed an undergraduate qualification were working in professional and managerial occupations four months after graduation, increasing by 11.4 percentage points to 73.7 per cent three years later.

²² <https://mccrindle.com.au/insights/blog/job-mobility-australia/>

Figure 2: Short- and medium-term full-time employment rate for 2007 to 2018 graduates – undergraduate degree, per cent



Source: Social Research Centre 2021, *2021 Graduate Outcomes Survey – Longitudinal (GOS-L)*.

Note: Short-term refers to four months after completion and medium-term refers to three years after completion.

The *Closing the Gap* agreement arises from a commitment from all Australian governments and Aboriginal and Torres Strait Islander representatives to a fundamentally new way of developing and implementing policies and programs that impact on the lives of Aboriginal and Torres Strait Islander people²³. Reporting from *Closing the Gap* has consistently shown that higher education for Indigenous people is a major contributor to the advancement of Aboriginal and Torres Strait Islander people. Higher education enrolments and completions are trending up. The 2016 Census found that both Indigenous and non-Indigenous graduates had employment rates of 83 per cent. Annual Government surveys on graduate employment outcomes consistently show that Indigenous graduates’ outcomes are often better than those of non-Indigenous graduates.

As noted above, Australian employers are highly satisfied with graduates’ skills and their capacity to contribute to the workplace. In 2021, more than nine-in-ten supervisors (92.1 per cent) indicated that the graduate’s qualification prepared the graduate “very well” or “well” for their current employment.

²³ *Closing the Gap In Partnership, National Agreement, Preamble point 4, March 2019.*

4.2 MEETING DEMAND FOR GRADUATES

Like other well-functioning higher education systems around the world, Australia's 39 comprehensive universities constantly develop and refine their own institutional strengths in both teaching and research, identifying the university's distinctive features and commitments to their local communities and considering the wider ecosystem of institutions with which they compete and collaborate.

Australian universities' institutional profiles take into account:

- the fields of study and student characteristics that are the priority focus for the university; how courses are linked to critical local, national and international demand; and the university's distinctive pedagogical commitments that meet their students' and local communities' needs;
- the university's research priority areas balancing both basic and applied research, the relationship between these research areas and its teaching mission and how the university plans to achieve research excellence in its priority areas;
- how the teaching and research activities are linked to and support local, regional and national needs; and
- what internationalisation strategy is appropriate to the university's mission and in what ways the university wishes to be internationally engaged.

Australian universities have different strategic missions and their own teaching and research specialisations. Prospective students and staff will choose to enrol and work in universities that meet their future career aspirations. For example:

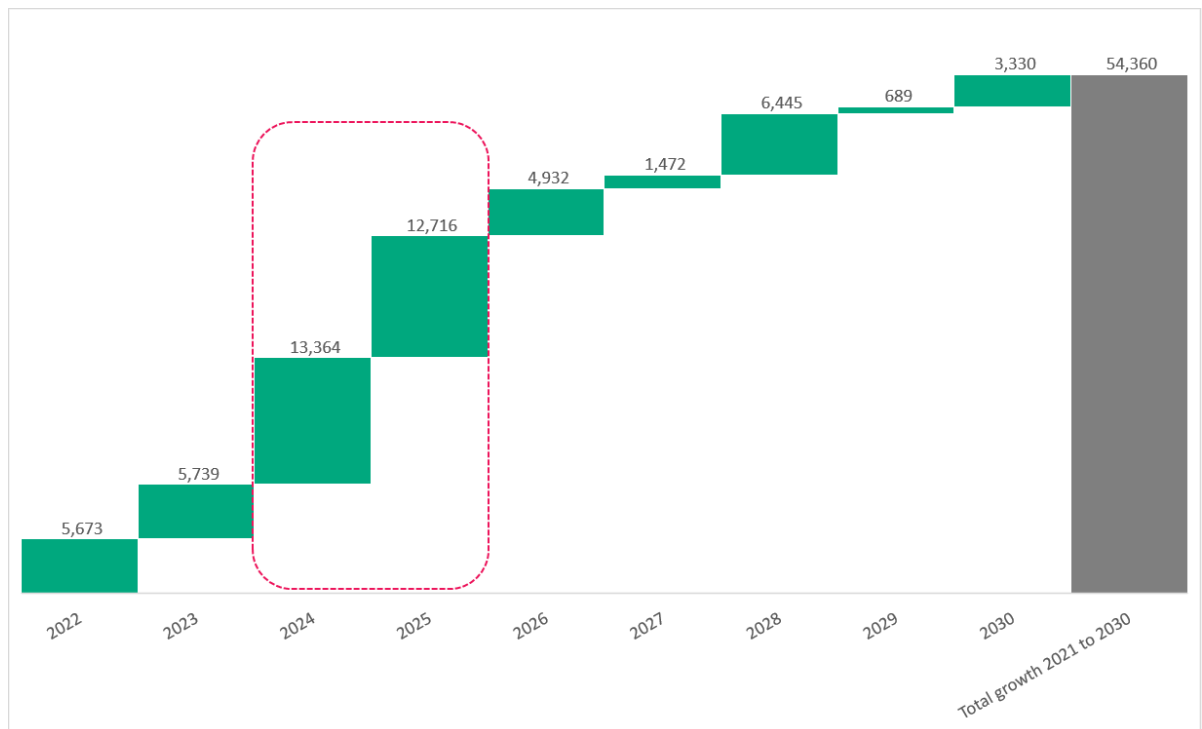
- Some universities and/or university collaborations are well known for different areas of health and medical research, for example the Digital Health CRC led by academic experts from a range of Australian universities, the University of Sydney's Charles Perkins Centre for Research into Diabetes, Obesity and Cardiovascular Disease and Flinders University's Aged Care Centre for Growth and Translational Research.
- Several universities are 'distance intensive' institutions, for example the University of New England and the University of Southern Queensland, offering higher education online to students located around the country.
- Some universities – especially in Western Australia (Curtin University and the University of Western Australia) and South Australia (The University of Adelaide) – are strong in research and teaching relevant to the mining industry.
- The Australian Catholic University – like several regional and outer metropolitan universities – is a major provider of Education and Health courses.
- Regional universities are strong in Agriculture and undertake a range of fundamental and applied research relevant to primary industries, often in collaboration with business. Others, such as Charles Darwin University have particular emphasis on Indigenous teaching and research.
- James Cook University in north Queensland specialises in marine biology and research and study of the tropics, including a focus on tropical health/medicine and its related workforce/skills requirements. Similarly, The University of Tasmania is a centre for study of the Antarctic – and includes the Australian Maritime College.
- The Australian National University has strengths in public policy and government, and it also has centres for Strategic and Defence Studies and Asian and Pacific studies.

- Several universities – in Victoria, the Northern Territory and Queensland – are dual-sector institutions, with a comprehensive range of offerings in both higher education and VET, including innovative, industry-led combinations of the two.

Universities Australia acknowledges the Government’s commitment to meeting demand for higher education places through the Job-ready Graduates (JRG) package, which passed through Parliament in October 2020. However, this is unlikely to be enough. According to the ABS population projections, there will be 55,000 more 18-year-olds by 2030, compared to 2021. The 18-year-old population is projected to increase from 307,331 in 2021 to 361,691 in 2030 (see Figure 3). It is also evident from Figure 3 that there will be a huge jump in 18-year-olds in 2024 and 2025 (the so-called ‘Costello babies’), with annual growth in the number of 18-year-olds increasing from around 5,000 to 6,000 to more than 12,000 each year in 2024 and 2025.

Demographic growth in the youth population and changes in skills in demand means that many more people – both school leavers and others – will want to study in coming years. According to the *Longitudinal Survey of Australian Youth*, 59 per cent of school leavers plan to go to university when they finish Year 12.²⁴ Hence to equip Australians with the skills needed to drive recovery and to thrive in the economy of the future, the supply of university places must keep pace with the increasing student demand, especially in the middle of this decade. Government and universities need to prepare now for this increase in demand, to ensure that these young Australians have the same opportunities to go to university as recent youth cohorts – and that they will be ready to meet the nation’s skills needs.

Figure 3: Projected growth in 18-year-old population to 2030, compared to 2021



Source: Australian Bureau of Statistics 2018, *Population Projections, Australia, 2017 (base) to 2066*, Series B – medium growth series.

²⁴ National Centre for Vocational Education and Research 2019, *Generation Z: Leaving School*, Longitudinal Survey of Australian Youth Infographic, Adelaide.

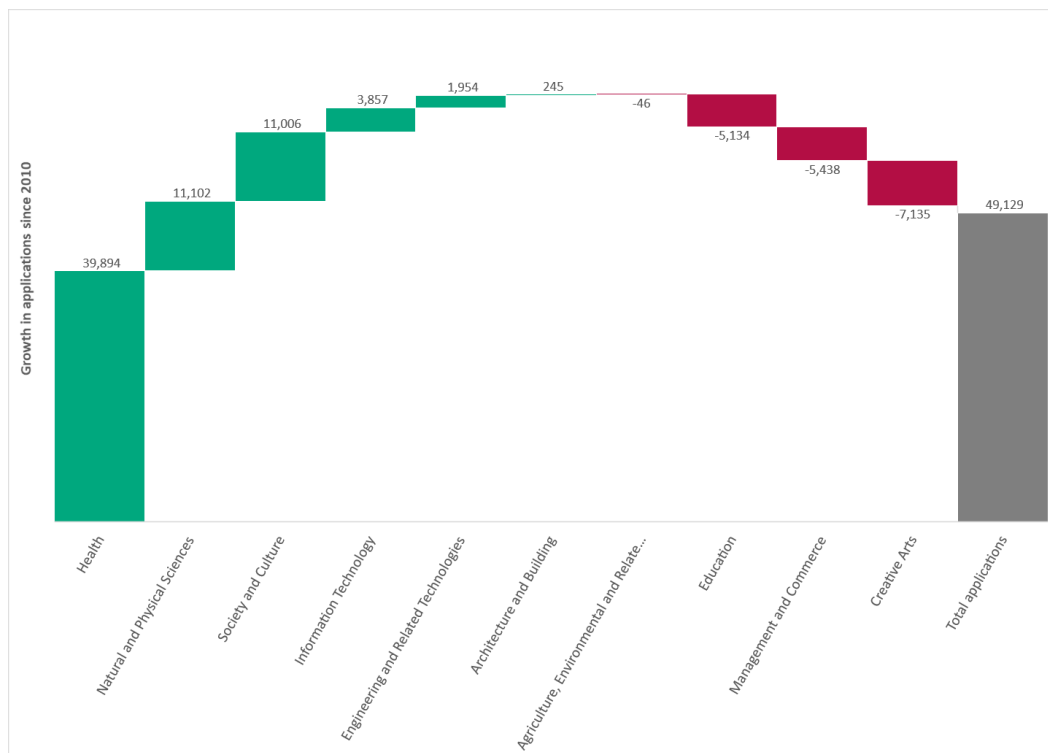
We note that total per-student funding for teaching activities in universities will fall under the JRG package – by 5.8 per cent per place on average – when fully implemented. There are significant reductions in total per-student funding for a range of disciplines including health and STEM.

Student demand (i.e., undergraduate applications) for health and STEM disciplines has increased significantly in the last decade (see Figure 4). Since 2010, undergraduate applications to study Health have increased by 39,894 applications (or 66.4 per cent) – from 60,064 to 99,958 in 2021 – followed by Natural and Physical Science with applications increasing by 11,102 (or 51.7 per cent) from 21,493 to 32,595 applications in 2021; while student demand to study Creative Arts (-23.8 per cent), Education (-16 per cent) and Management and Commerce (-13.6 per cent) have all declined significantly.

JRG has reduced student contributions in STEM, Health and some other disciplines in an effort to incentivise student demand. But in some of these disciplines, JRG has also reduced overall resourcing (Commonwealth plus student contributions) per place. Universities Australia is concerned that universities may experience difficulties in seeking to meet the increasing student demand for Health and STEM disciplines – the disciplines that the JRG package seeks to encourage – given the significant reduction in resourcing per student for these fields.

JRG has also led to further imbalances between government and student contributions in some disciplines. For examples, the share of government contribution to per-student funding has declined to just 7 per cent, for Management and Commerce, Arts, Humanities (excluding languages), Law, Economics and Communications, despite the contributions these disciplines made to the economic and social fabric of Australia. More work needs to be undertaken to examine the unintended consequences of JRG package. Universities Australia looks forward to the review of JRG scheduled to commence later this year.

Figure 4: Growth in undergraduate applications by broad disciplines to 2021, compared to 2010



Source: Department of Education, Skills and Employment 2021, *Undergraduate applications, offers and acceptance 2021*.

The JRG package included a measure to provide uncapped Bachelor places (except in Medicine) for Indigenous students from regional and remote areas. This means that eligible students will be guaranteed a university place. This is a commendable measure which will help universities to continue to increase participation in higher education by Aboriginal and Torres Strait Islander people. Indigenous enrolments more than doubled under the former system. This progress was put at risk by the funding freeze that ended the uncapped system at the end of 2017. Despite previous growth in enrolments, Aboriginal and Torres Strait Islander people are still under-represented in the student population (1.9 per cent in 2019) compared to their share of the total population (3.1 per cent).²⁵

Universities Australia recommends that uncapped funding be extended to all Indigenous students in Bachelor degrees (other than Medicine), regardless of where the student lives.

Our reasoning is simple. Most Indigenous people live in cities and towns. According to ABS data, 75 per cent of Aboriginal and Torres Strait Islander people live in major cities.²⁶ While Indigenous people in major cities are much more likely to have a degree than those from regional areas, they are much less likely to have a degree than non-Indigenous people in the cities. The attainment rate for Indigenous people aged 20–64 in urban areas is only 11 per cent – one third of the figure for the non-Indigenous population (33 per cent). While disadvantage does increase with remoteness for Indigenous people, it is clearly and obviously present in urban areas too.

4.3 SUPPORTING PRODUCTIVITY-ENHANCING LIFE-LONG LEARNING

Economic and technological development will continue to reshape how Australians work. Studies have shown automation could have a significant, positive impact on the Australian economy – generating a potential \$1.2 trillion dividend – if workers displaced by automation could successfully transition into new employment.²⁷

The demand for lifelong learning is expected to continue to increase as more workers are required to acquire new skills to perform their jobs due to technological improvements as well as those that transition between jobs. The traditional front-loaded education model immediately after school is no longer sufficient to equip employees with all the skills they will need throughout their working career. Some studies suggest that, by 2040, Australians will need to double the share of learning they do after the age of 21 from 19 to 41 per cent.²⁸

The latest ABS *Survey of Work-related Training and Adult Learning* released on 11 March 2022 found:²⁹

- 42 per cent of Australians aged 15 to 74 years old (or 7.8 million people) had participated in some form of learning over the past 12 months in 2020–21. Around 3.8 million people (or 21 per cent) had studied for a formal qualification, while 5.1 million (or 27 per cent) did non-formal learning. Just under 1.1 million people (6 per cent) did a mixture of both.
- Around 4.4 million Australians (23 per cent) aged 15-74 years had undertaken work-related training in the past 12 months – i.e., training or courses which did not form

²⁵ DESE 2020, *Higher Education Student Statistics 2019* and ABS 2016, *Census of Population and Housing*.

²⁶ ABS 2018, *Estimates of Aboriginal and Torres Strait Islander Australians, June 2016*, Cat. No. 3238.0.55.001

²⁷ AlphaBeta 2017, *The Automation Advantage*, Report commissioned by Google, p. 15.

²⁸ AlphaBeta 2019, *Future Skills*, Report commissioned by Google, p. 5.

²⁹ <https://www.abs.gov.au/statistics/people/education/work-related-training-and-adult-learning-australia/latest-release#barriers-to-non-formal-learning>

part of a formal qualification and were undertaken for work purposes. The majority of people (91 per cent) did work-related training to increase their skills for their job, while 5 per cent did this training to increase their job prospects.

- A significant increase in online work-related training compared to the previous survey – the proportion of working age adults studying work-related courses online has more than doubled in the past four years (up from 19 per cent in 2016–17 to 55 per cent in 2020–21).

Policy settings could do more to support upskilling and reskilling. Australia's existing financial incentives do not support workers who face time constraints pursuing formal qualifications or workers transitioning to new occupations. Prospective students who are time poor and not able to commit to undertake formal higher education qualifications under the Australian Qualification Framework (AQF) currently have to pay upfront for non-award microcredentials. If they have enrolled in microcredentials that do not relate to their current occupations, they are not able to claim the course fees as self-education expense tax deductions.

Recent ABS data has shown that people in the lowest two quintiles of weekly household income were more than twice as likely to report financial reasons as their main barrier to participate in non-formal learning as those in the income highest quintile – 24.2 per cent and 28.5 per cent respectively, compared with 10 per cent.³⁰ To remove these financial barriers, the Government should consider extending eligibility to access the Higher Education Loan Program to non-award microcredentials that are not part of a recognised award under the AQF offered by Australian universities.

A key advantage of the income-contingent loan system is that it does not discriminate based on age or employment status. Eligibility is extended to the employed and unemployed, inactive workers, and the self-employed. More importantly, it improves affordability of education and training by removing the need for upfront payment of course fees. The recently released *Review of University-Industry Collaboration in Teaching and Learning* by Professors Martin Bean and Peter Dawkins has also recommended that students participating in industry-focussed microcredentials should be able to access the Higher Education Loan Program through FEE-HELP.³¹ We welcome the Government's intention to extend FEE-HELP to microcredentials included in the current microcredentials pilot and we hope that FEE-HELP will be extended further following the pilot.

Universities Australia looks forward to the Government's response to Bean and Dawkins' Review and the previous Treasury consultation on extending self-education expense tax deductions to education expenses that are not related to individuals' current employment.

4.4 WORKING WITH INDUSTRY

Australian universities offer a broad range of opportunities for students to engage with the labour market while they undertake their degree. This experience will enable students to apply the generic and technical skills they have learned at universities to real-world situations.

Work integrated learning – or WIL – is an umbrella term that refers to a range of practical experiences designed to give students valuable exposure to work-related activities relevant to their course of study. To produce the highly skilled workforce that the community and industry

³⁰ Ibid.

³¹ <https://www.dese.gov.au/higher-education-reviews-and-consultations/resources/universityindustry-collaboration-teaching-and-learning-review>

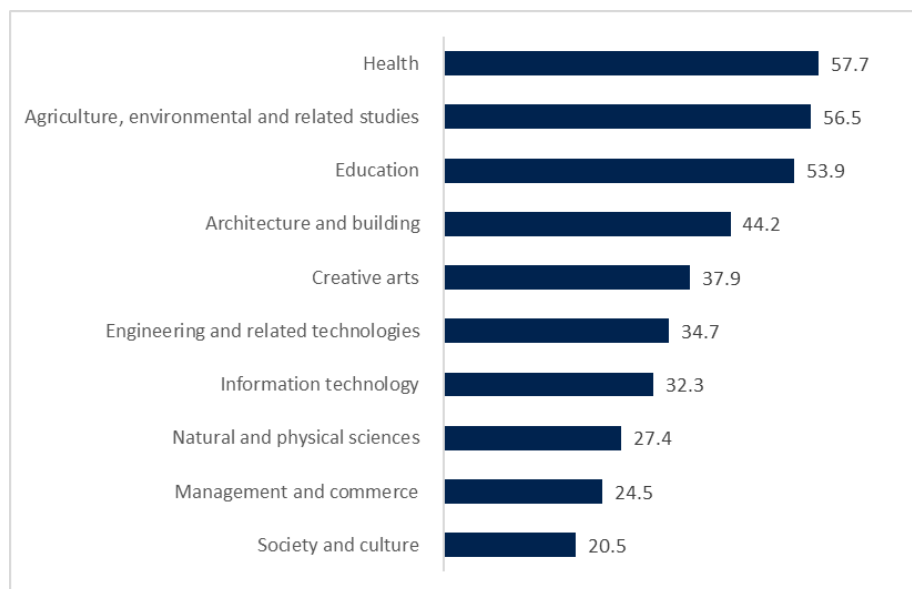
needs, universities and employers partner to offer students internships, projects, simulations, fieldwork and other activities.

Unfortunately, comprehensive data on WIL is not easily available. In 2018, Universities Australia undertook a national survey of the WIL activities that occurred in 2017 across Australia's 39 comprehensive universities. The survey is the first data collection of its kind, and the survey results provided the university sector with a baseline from which to measure progress in the future. The national survey found that a total of 451,263 students – both domestic and international – participated in WIL in 2017, making the participation rate 37.4 per cent of all enrolled students.³²

Figure 5 shows the proportion of students – both domestic and international students – who had participated in WIL by broad discipline areas. In 2017, 57.7 per cent of students enrolled in Health participated in WIL, followed by Agriculture, Environmental and Related Studies (56.5 per cent), Education (53.9 per cent), and Architecture and Building (44.2 per cent). This contrasted with students enrolled in Society and Culture who recorded the lowest WIL participation rate at 20.5 per cent.

For students in Health and Education disciplines, a WIL placement is a requirement for professional accreditation, which may explain the high participation rates. WIL activities in other disciplines are often optional, which may explain the lower participation rates. The outlier is students enrolled in Agriculture, Environmental and Related Studies, where WIL tends not to be a mandatory part of the course but where participation by students is extremely high, with many of the WIL experiences in the form of fieldwork.

Figure 5: Work-integrated learning participation rates, by broad field of education, unique headcount, per cent



Source: Universities Australia 2018, *Work Integrated learning in universities: Final report*, Canberra.

Note: Data only include WIL activities for domestic and international students studying onshore in 2017. Postgraduate research students are excluded from the data collection.

³² Universities Australia 2018, *Work Integrated learning in universities: Final report*, Canberra.
<https://www.universitiesaustralia.edu.au/publication/work-integrated-learning-in-universities/>

Clinical placements are a specific form of WIL. As outlined, undertaking clinical placements is mandatory in all entry level university health professional degrees. Placements generally occur in health and care services³³ but are a shared responsibility between education and health providers. Quality and type of placements have a known influence on students' future choice of work domain. Yet the majority of clinical placements still occur in public hospital settings, despite the known workforce need in other, more community-based domains. Often, this is due to barriers in placing students in community-based settings where workforce need is greatest. This means students can miss out on exposure to these service settings in their education and training years. Evidence suggests that with the right exposure and learning opportunities, students are more likely to choose to work in these settings once qualified.^{34,35,36}

Evidence^{37,38,39,40} has shown that strong partnership approaches between universities and health services can help overcome many of these barriers to develop sustainable, adaptable models that address workforce issues, enhance client outcomes, support staff upskilling and provide students with relevant skills and experience. Robust partnerships are the building blocks of innovation. However, building relationships with service providers, promoting the benefits of students and developing localised models takes time. A focussed, time-limited initiative which builds sustainable, learner-development cultures in health services in partnership with universities is needed.

Recommendations for partnership approaches to extend clinical placement capacity and support the workforce pipeline specifically in aged care were included in the final aged care royal commission report. The *NDIS National Workforce Plan 2021 to 2025* has also included the need to expand placement capacity in disability services. However, although announcements in the May 2021 budget took some steps towards building aged care workforce – including planning and research capacity – support for partnership approaches was not included. Health professions students need exposure to sufficient, quality placements in aged, disability and primary care as well as other health service areas of need. Without it, increasing health graduates' understanding and career choice in these areas is unlikely. This is a pressing productivity issue that needs urgent attention.

Universities Australia recommends a time-limited fund to support partnership approaches to placement development between universities and community-based health service sectors of known workforce need.

³³ This includes aged care, disability services, primary care, Indigenous health, mental health and a range of other community-based services.

³⁴ Thackrah, R. and Thompson, S. 2019, *Learning from follow-up of student placements in a remote community: a small qualitative study highlights personal and workforce benefits and opportunities*, BMC Medical Education 19, 331.

³⁵ Parker, J., Hudson, B. and Wilkinson, T. 2014, *Influences on final year medical students' attitudes to general practice as a career*, Journal of Primary Health Care, Vol. 6 (1), p. 56–53.

³⁶ Schoo, A., McNamara, K. and Stagnitti, K. 2008, *Clinical placement and rurality of career commencement: a pilot study*, Journal of Rural and Remote Health, Vol. 8 (3).

³⁷ Barnett, K., Moretti, C. and Howard, S. 2015, *Tracs to the Future – National Evaluation of Teaching and Research Aged Care Service (TRACS) Models Supported Through the Aged Care Workforce Flexible Fund: Final Report*.

³⁸ Multiple authors: Wicking Dementia Research and Education Centre, 2017: Journal publications and reports.

³⁹ *Falls prevention through university health student participation at Greenhills Aged Care Facility Murwillumbah*

⁴⁰ *Increasing workforce capacity in aged care through student placements and stronger links with universities*

4.5 PROFESSIONAL ACCREDITATION OF UNIVERSITY COURSES

Many university courses – at both undergraduate and postgraduate levels – lead to qualifications required for initial registration as a practitioner in various professions. In addition to rigorous academic accreditation within universities, these courses require accreditation by professional bodies. Universities must maintain their accreditation for these courses through regular processes run by professional bodies.

Academic and professional accreditation processes are different from each other, but complementary. Obviously, professions want the relevant courses to be academically rigorous and to be certified as such by universities' academic boards. Conversely, universities need to maintain accreditation by and good relations with the professions.

In 2016, Universities Australia and the Australian Council of Professions (ACoP) sought to formalise (and publicise) the complementary roles of academic and professional accreditation by signing a Joint Statement of Principles on Professional Accreditation. ACoP is a peak body for professional associations including CPA Australia, Chartered Accountants Australia and New Zealand, Engineers Australia, the Australian Computer Society, the Australian Dental Association and various other professional bodies.⁴¹ The principles were designed to streamline and improve consistency in the professional accreditation of university courses.

In short, the Joint Statement establishes the principle that universities are responsible for assessing inputs (including admissions standards, methods of teaching and assessment, staffing and facilities) while professional accreditors are responsible for assessing outcomes. Under these agreed principles, the question for professional accreditors is: *does the course in question prepare a graduate to begin practising the profession?*

It is the role of universities – as autonomous, self-accrediting institutions already regulated by TEQSA – to determine how they deliver the education that achieves the professional competencies required in particular professions.

It is the role of professional organisations and accrediting bodies to outline the professional knowledge and competencies required of graduates in their field.

In addition to this demarcation of responsibilities, the joint principles seek consistency in standards for professional accreditation, for example, across State/Territory boundaries.

Universities Australia and ACoP's work on the joint principles was informed by a concern for efficiency and a wish to avoid duplication. The principle is that whatever has already been accredited by universities – subject to regulation by TEQSA – does not need to be reviewed again by professional regulators.

As mentioned above, one of the most challenging impacts of the pandemic on university teaching was the disruption to the placements and practicums that are essential to many professional degrees. A specified amount of practical experience is mandated in professional accreditation of these degrees, along with classroom study in the university.

Practical placements can be delayed, but as lockdowns dragged on, students, universities and professional accreditors became increasingly worried about their capacity to meet these requirements within the usual duration of a degree.

⁴¹ <https://www.universitiesaustralia.edu.au/wp-content/uploads/2019/06/Joint-Statement-of-Principles-for-Professional-Accreditation.pdf>

In response, Universities Australia and ACoP again came together in 2020 to agree on a joint statement on how to deal with these issues during the pandemic – this time in association with other higher education peak bodies (the Independent Tertiary Education Council of Australia (ITECA) and Independent Higher Education Australia (IHEA)) as well as the Australian Collaborative Education Network (ACEN – the peak body for WIL).⁴²

The joint statement committed signatories to work to make the adjustments to professional accreditation processes required by the realities of the pandemic, while maintaining learning outcomes through innovative practice. Signatories committed to continue to meet students' needs in changed conditions, while ensuring public safety, and public confidence in professional standards.

As with the 2016 joint statement on professional accreditation, the agreement on professional accreditation during the COVID-19 pandemic was driven by a commitment to efficiency and to improvement and adaptation through innovation. It is an example of universities – and other stakeholders in higher education – working proactively and autonomously to maintain and even improve outcomes in challenging circumstances.

For health professions students, undertaking an approved – or professionally accredited – university degree course is a requirement for registration into the profession. For 15 of these health professions, this is necessitated under the National Law.⁴³ Health professional accreditation bodies and universities worked consistently together throughout the pandemic to ensure clinical education continuity while also assuring quality graduate outcomes. Universities welcome close working with the professions, especially where roles are clearly delineated and respected. Much helpful progress was made during the pandemic in relation to health course delivery.⁴⁴

Despite this close and cooperative working relationship, the pandemic still led to delays in health course completions (more information in section 4.6). This is because aspects of health education, such as professional accreditation requirements and the need for in-situ health service placements – many of which are determined by jurisdictional health services – are outside of the direct control of the university and rely on industry stakeholders. While universities frequently innovate and update their course delivery, there is a limited amount that universities alone can do. Health professions education is one of the more complex examples of the influence of the professions and professional accreditation on university course delivery. However, industry requirements affect many other university courses and shape how they are delivered – including the degree to which online offerings or other innovations can be provided. Understanding these influences is important in considering future higher education delivery options.

⁴² <https://www.universitiesaustralia.edu.au/wp-content/uploads/2021/03/Joint-Statement-of-Principles-for-the-Higher-Education-Sector-COVID-19-Response.pdf>

⁴³ For further information about the Health Practitioner Regulation National Law Act 2009 and related regulations see: <https://www.ahpra.gov.au/about-ahpra/what-we-do/faq.aspx>

⁴⁴ For example, the development of joint principles on clinical education continuity; two health professional accreditation workshops and the development of a joint statement of intent on health professions accreditation (in progress)

4.6 IMPACT OF COVID-19 ON HIGHER EDUCATION

As with all sectors of the economy, COVID-19 has posed significant challenges to the Australian university sector. International border closure, social distancing and density limit requirements imposed by states and territories' public health directives have required universities to quickly adapt their teaching and learning arrangements, with many universities having to quickly move their course delivery to online.

Remote learning

Australia's 39 comprehensive universities were at differing levels of activity and maturity in online course delivery prior to the pandemic. In 2019, some universities had less than 10 per cent of their students enrolled as remote learning/online students while some had more than 50 per cent of their students studying remotely. Having to move all courses online in a short time was a bigger job for some universities than it was for others, though it was a significant challenge for all. Moreover, not all university courses could be moved to online delivery easily in a way that preserved important aspects of face-to-face teaching. While courses that are mostly "chalk-and-talk", for example in accounting and economics, could be moved to online delivery swiftly, it is significantly harder to emulate in-person study experience for courses in fine and performing arts. Nevertheless, universities were able to make big – and sometimes – surprising achievements in online delivery in these more challenging fields.

Some of the measures adopted during COVID-19 lockdowns were temporary. No-one would advocate providing exclusively the online experience that universities and students had to adopt – by necessity – in many parts of Australia in much of 2020 and 2021. What the experience of online delivery during the pandemic has taught universities and students is that the range of possibilities for different mixtures of online and in-person delivery is broader than many previously realised.

Online versus face-to-face delivery has been an over-simplification and a false dichotomy in higher education for at least ten years: in-person higher education has involved significant online activity for a long time. Universities' and students' responses to the pandemic show not only what *can* be delivered online, but what *should* be – and what works better online than it does in person.

Conversely, lockdowns have reminded students, universities and the public of what is most important about the in-person and on-campus experience, and how vital it is for many students. While lectures and information transmission were moving online well before the pandemic, face-to-face small group classes remain a major drawcard for students and an important component of learning. Furthermore, the broader on-campus experience cannot be replaced online – and most students wouldn't want it to be.

During the height of the pandemic response, most campus facilities – especially libraries – were also closed which significantly impacted students' learning experiences. The university library is not just a place of study, rather it is a place of interactions and exchanges between students and staff, especially for international students. The closure of libraries and campuses and moving to online teaching have posed additional challenges for students from disadvantaged backgrounds due to the lack of access to quiet study spaces, computers, and adequate internet connection at home. Universities have continued to provide student support services to their students in need.

Student experience

While students' satisfaction with teaching remained high during lockdowns, the overall university experience was significantly lower than before the pandemic.

It is not surprising when the *2020 Student Experience Survey* – with the main online fieldwork for the 2020 survey conducted between 28 July to 30 August 2020 – reported a sharp reduction in student ratings of their overall educational experience in 2020. Student ratings of the quality of their entire educational experience among undergraduates fell sharply from 78 per cent in 2019 to 69 per cent in 2020, a fall of nine percentage points.⁴⁵

What is more surprising is that despite the 9 percentage points fall in overall educational experience, students' ratings for *Skills Development* and *Teaching Quality* declined just three percentage points between 2019 and 2020, from 81 per cent to 78 per cent for both indicators. Students' ratings for *Student Support* were unchanged at 74 per cent in 2020.⁴⁶

Challenges in health professions education

The compulsory requirement for practical experience/service placements within certain courses, including teaching and health, make it impossible to move them to entirely online formats. During the pandemic, health professions education was particularly challenged due to its clinical education requirements, although a variety of tele-supervision and virtual/simulation approaches were implemented where possible.⁴⁷

Health professions education was caught at the intersection of meeting professional accreditation requirements, including compulsory clinical placements, and pressure on the health system as COVID-19 case numbers grew and public health measures increased. Some hospitals and health services closed to students during the pandemic, sometimes at very short notice. Where placements were still offered, later year health students tended to be prioritised. Certain disciplines were also prioritised over others. There was also variation in placement access across jurisdictions and health services. Despite joint efforts from education and health stakeholders, we now face several pressing placement and clinical education issues which threaten Australia's health workforce pipeline and supply:

- Clinical placement backlogs that remain from COVID-19. If unaddressed, existing health professions students will be delayed in completing their studies and replacement and expansion of the health workforce will not be possible as existing staff exit the sector. Ensuring our domestic workforce supply is especially critical while cautious border reopening prevents significant reliance on overseas health personnel.
- The need to leverage new/existing technologies to augment clinical education and support workforce pipeline continuity where access to face-to-face learning is still restricted.

Ensuring a sufficient, skilled, sustainable and competent health workforce is fundamental to productivity at the best of times, and even more so as we emerge from the pandemic. Universities are a key contributor to this supply pipeline but need support to ensure they can partner with other relevant health stakeholders to build necessary placement and supervision capacity.

Some aspects of clinical education can only be undertaken in health services. However, expanding universities' capacity to provide a greater number of virtual practicums and clinical experience will also help students to progress their studies and support workforce pipeline continuity where access to health service placements is restricted. There are various components of virtual learning – from simulation and tele-supervision/telelearning, to augmented, virtual reality

⁴⁵ Social Research Centre 2021, *2020 Student Experience Survey: National Report*.
[https://www.qilt.edu.au/surveys/student-experience-survey-\(ses\)](https://www.qilt.edu.au/surveys/student-experience-survey-(ses))

⁴⁶ Ibid.

⁴⁷ Where these were approved by professional accreditation bodies.

and artificial intelligence approaches. How much of each can be utilised varies by discipline, student year level, university and sometimes health service (if used in conjunction with face-to-face teaching). There is no one size fits all solution. Needs will vary with each university. This technology is also often expensive and needs technical support/training for staff and students to use it effectively as part of clinical training. Policy support for universities to expand this technology is therefore needed. The advantage, however, is that it can support clinical education where access to placements is more limited while also providing students and university/health service staff with important digital health knowledge. Universities Australia recommends the Australian Government provide a time-limited, targeted grant program to support additional clinical education technology in the university sector.

Recommendation 2:

The Productivity Commission affirm that the funding framework for government-subsidised university places should be adequate to meet future student demand due to changes in population and the labour market.

Recommendation 3:

The Productivity Commission consider that uncapped places should be extend to all Aboriginal and Torres Strait Islander students, not just those from regional and remote areas.

Recommendation 4:

The Productivity Commission support extension of the Higher Education Loan Program (HELP) to Australians undertaking non-award microcredentials.

Recommendation 5:

The Productivity Commission consider a time-limited health service placement adjustment package to support health workforce supply and skills growth.

Recommendation 6:

The Productivity Commission consider a time-limited targeted grant program to support additional clinical education technology in the university sector.

5 ROLE OF UNIVERSITY RESEARCH

5.1 THE CONTRIBUTION OF AUSTRALIA'S UNIVERSITY RESEARCH SYSTEM TO PRODUCTIVITY

Australia's university system has evolved to fulfil a range of functions, which individually and collectively help to drive public good outcomes and national prosperity. Research is a vital national activity. Research is also fundamental to what a university is. This was demonstrated by the recommendations of the *2019 Review of the Higher Education Provider Category Standards*.

The four research-related functions highlighted below identify key aspects of how universities interact with the community and society to ensure that Australia is resilient, prepared and internationally competitive.

They also articulate the broader functions of research – not just innovation and commercialisation – such as serving the community, helping Australia in its role as a global citizen and, critically, contributing to the education of university graduates on which the country will come to increasingly depend for its productivity performance.

Functions of Australia's research system

Resilience and preparedness – helping the nation and communities

Universities are a key plank of Australia's ability to rapidly deploy capabilities to mitigate the effects of external and internal shocks – economic, environmental, social or otherwise.

Universities are also a central part of their local and regional communities, helping them to cope with change and seize opportunities through research.

World-leading teaching informed by research

The quality of the education in Australia's universities is one of the best in the world due to students being taught by some of the best researchers in the world.

Growth and competitiveness

Research is an inexhaustible source of economic growth and competitiveness.

Australia's universities are deeply engaged with industry and undertake the majority of research from basic to applied.

Global engagement

Australia's universities are deeply integrated into global knowledge flows, allowing it to both benefit from and contribute to the global knowledge base.

Australia's role as a prominent global citizen is reinforced by the level of international research engagement and collaboration.

Resilience and preparedness

Australia has been a global leader in meeting the challenges posed by the COVID-19 pandemic. It has delivered a robust policy response based on the highest quality evidence. Universities were able to respond rapidly and effectively due to the decades' worth of investment in research excellence across all fields.

Our complex world requires sophisticated solutions that cannot be met by any single field of knowledge alone. Universities are uniquely positioned in the research system to be able to respond to any problem with the combined expertise they possess.

Some of the fields of research that universities are drawing on in responding to COVID-19 include:

- Medical and Health Sciences;
- Education;
- Human Society;
- Psychology;
- Engineering;
- Information and Computing Sciences;
- Technology; and
- Economics.

The response by universities includes supporting both short- and long-term issues and effects. The effects of the pandemic are being felt far beyond the medical field and affect all aspects of Australian society, from education to relationships to the economy. Universities have responded to all of these challenges with tailor-made solutions.

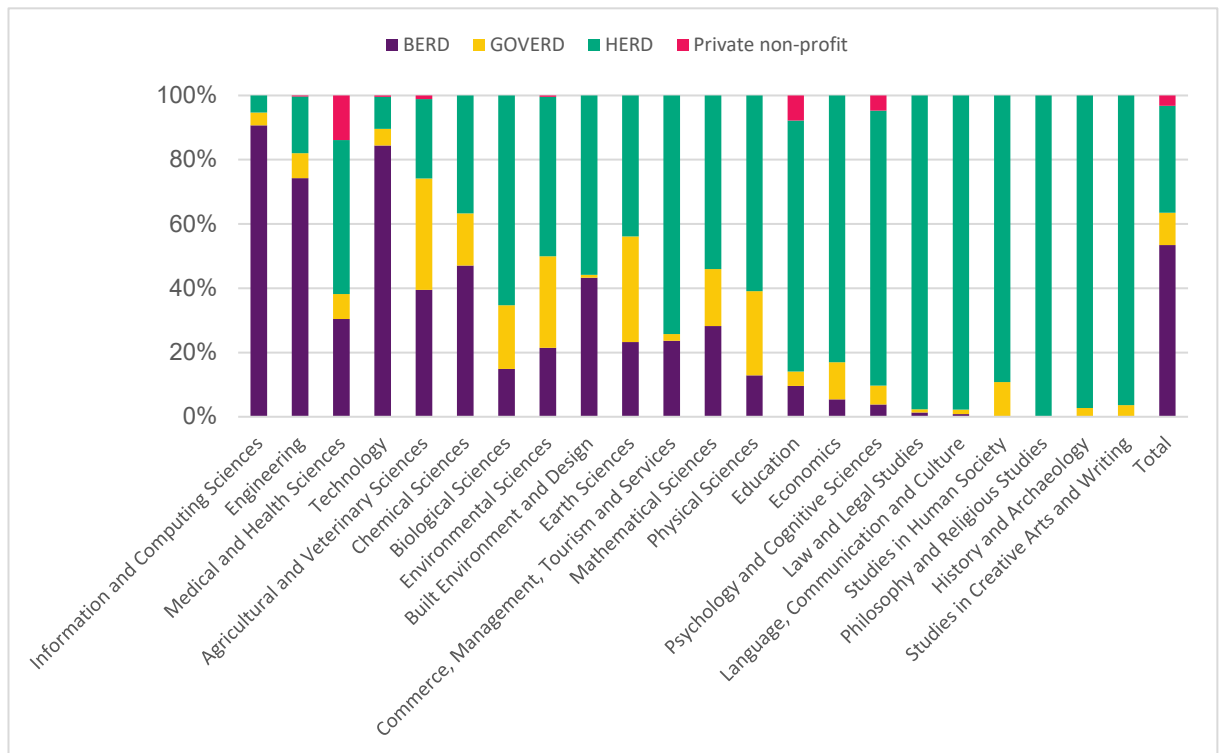
Sovereign capability has also arisen as a policy issue in recent times.

A research system is an indispensable aspect of developing or maintaining areas of sovereign capability, acting as both an input into other capability areas (e.g., working with industry to manufacture ventilators), and as an area of capability in itself.

Universities are active across all fields of research and are the dominant funders of 17 out of the 22 fields of research, funding between 44 per cent and 99 per cent of R&D.

University research can take a short-, medium-, or long-term view, focus on commercial and non-commercial returns, and cover fields of research that industry R&D does not. Non-commercial research may nevertheless be associated with industrial priorities, for example, the ethical considerations surrounding the application of artificial intelligence.

Figure 6: The dependency of research fields for funding on different sectors – Share of R&D expenditure by field of research, by sector, 2016–17



Source: ABS Catalogue numbers: 8111.0, 2016 (HERD), 8104.0, 2017-18 (BERD), 8109.0, 2016-17 (GOVERD and Private non-profit).

Notes: The shares of R&D spend by sector are estimated by summing the individual R&D aggregates, BERD, HERD, GOVERD and Private non-profit (see above for sources).

Growth and competitiveness

Australia’s economic growth prior to the pandemic has been the envy of advanced economies around the world. As the Treasurer noted in a speech in August 2019, the Australian economy has grown on average by 3.1 per cent per year, compared to an OECD average of 2.2 per cent.⁴⁸ He identified the main driver of this growth as productivity, contributing 1.7 percentage points of that 3.1 per cent growth, the remaining 1.4 per cent being the other two drivers of population and participation.

The Treasurer, the Hon Josh Frydenberg MP, called on business to ‘back itself’ and invest in R&D, which will in turn drive the productivity increases required to continue the multidecade success story.

Whilst the pandemic has disrupted Australia’s growth story, the equation still holds true. Given the current shock to the population and participation drivers (overseas migration contributed 62.5 per cent to Australia’s annual population growth), the onus on productivity is greater than ever.

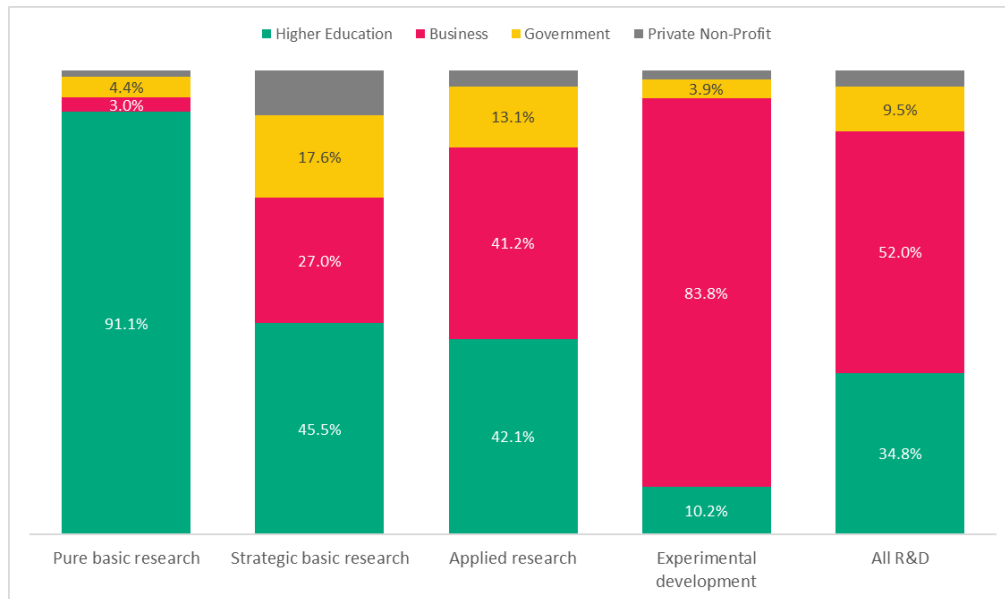
Given the importance of R&D to productivity growth, it is essential that Australia has capability across the research spectrum from basic to applied research.

⁴⁸ <https://ministers.treasury.gov.au/ministers/josh-frydenberg-2018/speeches/address-business-council-australia>

Research offers a renewable, inexhaustible driver of productivity growth and competitiveness

Universities are the primary actor in the Australian research system to cover this research spectrum – from basic, to applied research and experimental development – at a significant scale. In fact, universities perform fractionally more applied research than industry (Figure 7). They are deeply integrated with industry in helping to drive the creation of new products and services that drive our economic prosperity and competitiveness.

Figure 7: Share of R&D, by type of activity and sector, latest available



Source: ABS 2021, *Research and Experimental Development, Businesses, Australia, 2019–20*, Cat. No. 8104.0, ABS 2020, *Research and Experimental Development, Higher Education Organisations, Australia, 2018*, Cat No. 8111.0 and ABS 2020, *Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2018–19*, Cat. No. 8109.0.

A demonstration of the level of engagement between industry and universities is the extent to which business funds R&D in universities (Figure 8).

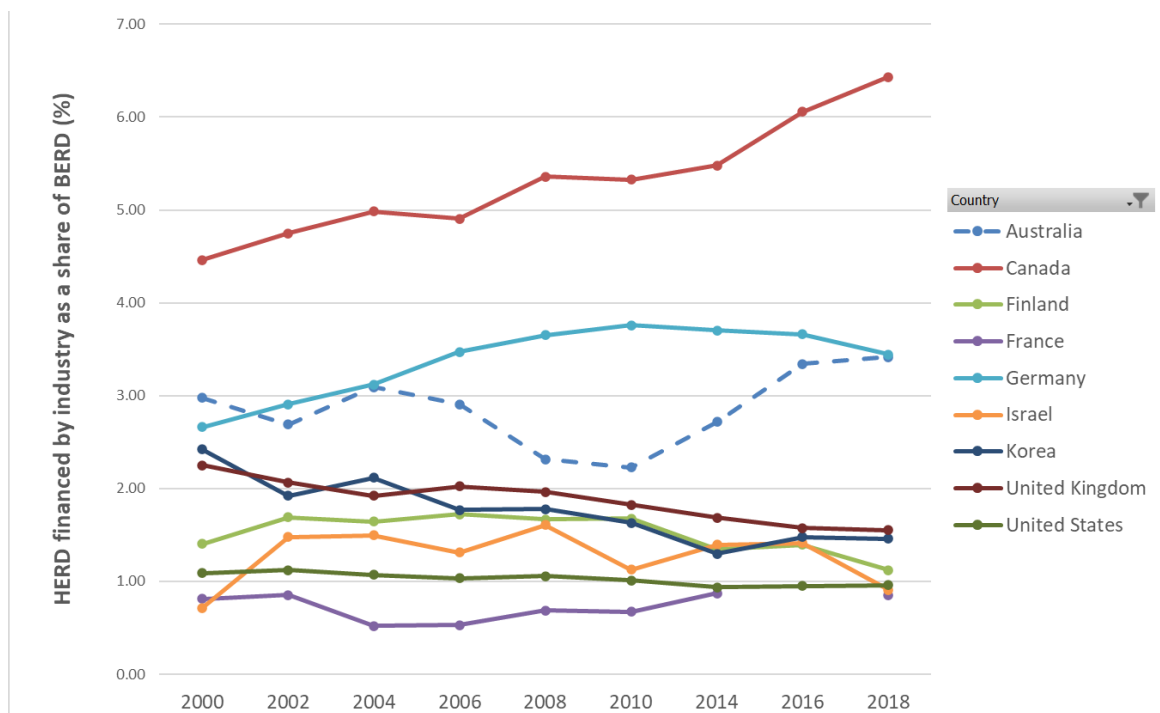
This measure represents the amount of industry funding that universities attract (HERD sourced from industry) as a share of the amount of R&D performed by the business sector (BERD).

It provides an indication of the extent to which business allocates funds for R&D performed by universities, relative to R&D performed by itself. It is an indication of demand for university research.

The numbers reveal that the demand by business for university research in Australia is greater than in many comparator countries, such as the UK, USA, Israel, Finland and Korea. This is a clear demonstration that our university system delivers both the fundamental research that drives the knowledge frontier, and is deeply engaged with industry.

In order to emerge and thrive from the adversities of the COVID-19 pandemic, Australia will need a research-led recovery that will drive productivity and economic prosperity. Universities can and must be a part of these efforts.

Figure 8: International comparison of Higher Education R&D Expenditure (HERD) sourced from industry as a share of Business Expenditure on R&D (BERD), 2000 to 2018



Source: OECD 2021, Main Science and Technology Indicators database and ABS 2020, Research and Experimental Development, Higher Education Organisations, Australia, 2018, Cat No. 8111.0

Teaching informed by research

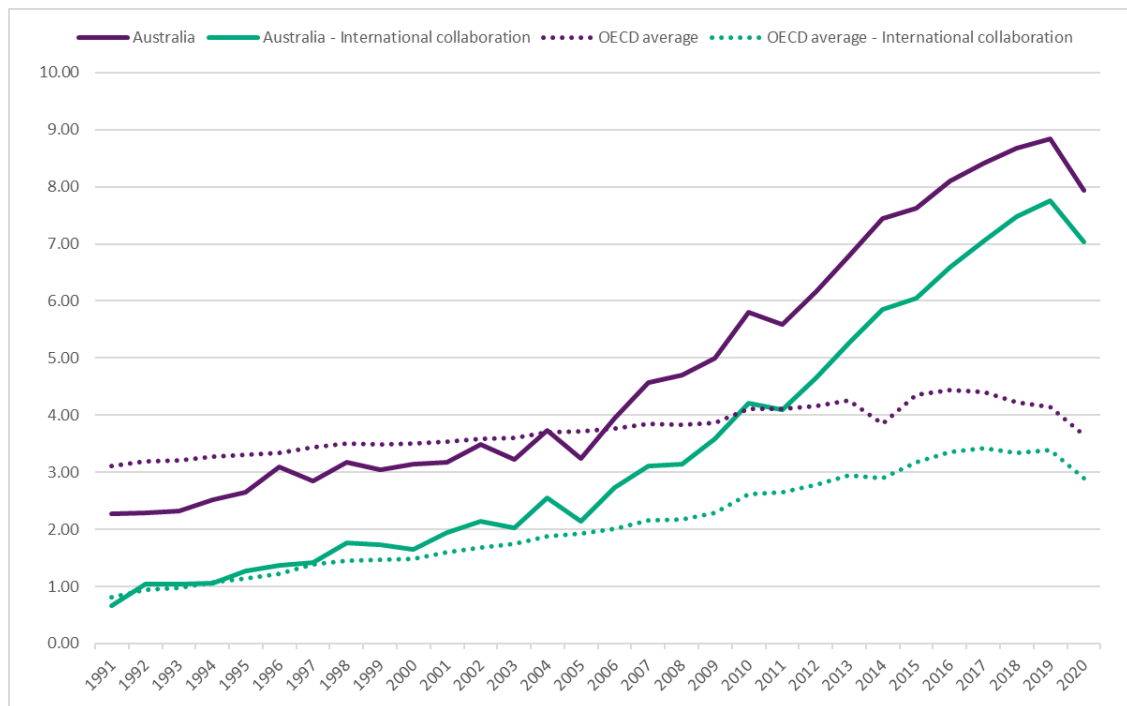
One of the primary functions of universities is the education of the students who will drive productivity through their engagement in our future workforce and continue to make their contributions to civil society. In an increasingly knowledge-driven economy, human capital is the greatest asset that our businesses hold.

The human capital of both the present, and increasingly of the future, needs to satisfy the competing requirements of being both specialised and flexible. Students are continuously reminded of the number of different careers that they can expect within their working lives. As noted in Section 4.1 above, it is estimated that a school-leaver will have 17 different employers and 5 distinct careers.

Given such change, the education received by the student needs to be both broad and deep, informed by the best knowledge available. Our university researchers are also the educators of our students. The quality of the instruction is informed by the latest developments, so that students have the confidence that what they are taught is world's best practice.

There is therefore a direct link between the quality of our researchers and the ability of our workforce to meet the challenges of today and tomorrow. A commonly accepted measure of research quality is the share of publications in the world's top one per cent of publications. Figure 9 below shows Australia's performance relative to the OECD average. Also shown is the significance of international collaboration to Australia's research effort. Notwithstanding the recent decline in 2020, Australian research is demonstrably amongst the world's best. This in turn means that Australian graduates receive instruction from the best researchers in the world.

Figure 9: Share of the world’s top one percent of publications by citation and collaboration with international co-authors: 1991 to 2020



Source: Department of Industry, Science, Energy and Resources 2020, *Innovation System Monitor*.

Global engagement

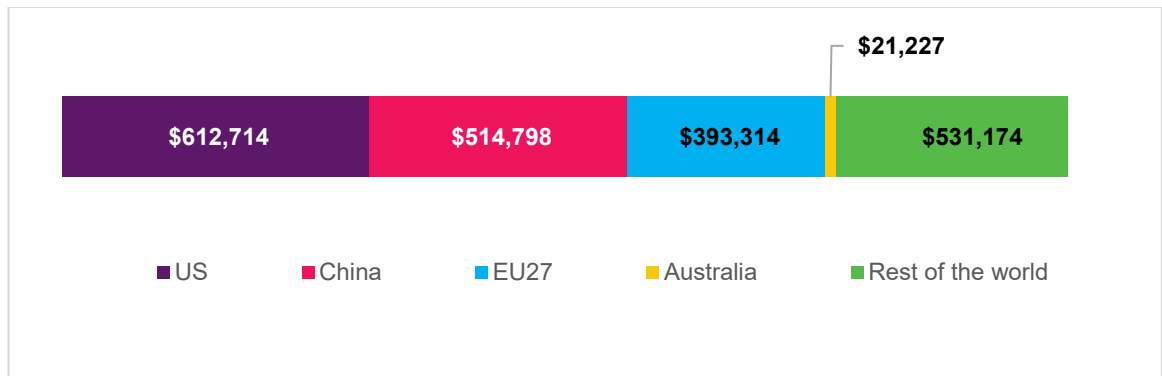
Figure 9 above shows the contribution of university research to our national resilience; its potential as a source of national competitiveness and growth; and its importance to the quality of teaching.

Australian research exists in a global context and provides an important pathway of absorptive capacity, that is, the ability to integrate external knowledge. To illustrate the scale, in 2019, global R&D expenditure was about US\$2.1 trillion, compared to Australia’s US\$21.2 billion (2017) or 1.0 per cent of the world’s R&D expenditure.⁴⁹

The top three countries/regions – the US, China and the EU28 – comprised 73.4 per cent of the total expenditure. The US spent US\$612.7 billion or 29.6 per cent, China spent US\$514.8 billion or 24.8 per cent and the EU27 spent US\$393.3 billion or 19.0 per cent (Figure 10).

⁴⁹ Main Science and Technology Indicators database. Accessed 18 March 2022. Prices are in constant 2015 prices and PPP.

Figure 10: Global Gross Expenditure on R&D in 2018 (\$US million)



Australia's overall investment in R&D is falling behind international competitors. At 1.79 per cent of GDP, Australia lags behind its competitors and is now well below the OECD average of 2.48 per cent in 2019. Australia's investment has been declining for over a decade, down from 2.25 per cent of GDP in 2008, and there is no sign of stabilisation. This contrasts with steady increase in the OECD average over the same period, from 2.28 per cent to 2.48 per cent in 2019.⁵⁰ Australia lags behind Israel (4.93 per cent of GDP), Germany (3.19 per cent), South Korea (4.64 per cent), US (3.07 per cent), Denmark (2.91 per cent), and China (2.23 per cent) in overall investment in R&D.

The Australian economy relies heavily on its ability to absorb external knowledge. The Australian innovation system is known for its strength in the adoption and modification of existing innovation, including externally sourced innovation and its diffusion across the economy.⁵¹

A decline in R&D intensity, in particular that of industry, should be of serious concern to all. This not only compromises the ability to invent radically new products and processes but also the ability to integrate and utilise existing innovation. An economy with low rates of R&D intensity is less likely to be equipped to absorb the coming waves of emerging technologies.

⁵⁰ OECD 2020, Main Science and Technology Indicators database

⁵¹ Australian Government 2017, *Australian Innovation System Report 2017*, p.14.

5.2 INDUSTRY R&D AND RESEARCH COMMERCIALISATION

When the research system works at its best, the key research performing entities of industry, government, higher education and the private non-profit sectors both complement and mutually reinforce each other.

The Productivity Commission has found the levels of R&D investment by the private sector to have declined to a degree that may have a material effect on the productivity and prosperity of the country.⁵² Moreover, recent analysis by the Treasury has found Australian firms are catching up to the global frontier more slowly than they did in the early 2000s. This suggests that Australian firms have been slower to adopt cutting-edge technology and processes, and to improve their productivity performances more generally.⁵³ In turn, slower ‘within-firm’ productivity growth has weighed on aggregate productivity growth. The Treasury paper concludes that the gap between the global frontier and Australian firms has grown over time, and Australian are catching up more slowly.

This suggests that Australian firms have become slower to adopt, innovate and improve their productivity performance, which can explain part of the slowdown in aggregate productivity growth since the mid-2000s.

Australia’s current tax incentive focus

With 86 per cent of Australia’s current innovation-focussed investment filtered through the R&D Tax Incentive mechanism, Australia sits apart from peer nations in its singular focus on tax incentives as a mode of stimulating R&D.⁵⁴

The R&D Tax Incentive (RDTI) scheme has been promoted as the flagship operation of Australian Government innovation efforts for many decades, aiming to promote business innovation through the offering of a tax offset⁵⁵ for eligible companies.

The scope of the RDTI has been characterised by both commentators and government as falling short in a number of ways. These critiques include charging industry with the use of the measure to subsidise business as usual, rather than using the offset to alleviate risks and partake in R&D activities beyond their usual remit. Furthermore, it has been demonstrated that in many cases tax incentives on their own – retrospectively offsetting firms’ innovative activity – are not as effective as a combined strategy that also rewards innovation through either grants or prizes.⁵⁶ This is significant, in that Australia – unlike many other OECD nations – directs the majority of government R&D towards tax incentives, rather than direct funding.⁵⁷

⁵² Productivity Commission 2019, PC Productivity Bulletin, May

⁵³ Andrews, D., Hambur, J., Hansell, D. and Wheeler, A. 2022, *Reaching for the stars: Australian firms and the global productivity frontier*, Treasury Working/Technical Paper, 2022#01, 7 February 2022.

⁵⁴ Direct government funding and government tax support for business R&D, 2018 and 2006, OECD R&D Tax Incentive Database, <http://oe.cd/rntax>, December 2020.

⁵⁵ Set at a 43.5 per cent refundable and 38.5 per cent non-refundable tax offset for businesses with aggregated annual turnovers below and above \$20 million AUD respectively.

⁵⁶ Busom et al. 2014, *Tax incentives or subsidies for business R&D?*, Small Business Economics, vol. 43 (3), Bedu et al. 2019, *Do regional R&D subsidies foster innovative SMEs’ development*, European Planning Studies, vol. 28 (8).

⁵⁷ Direct government funding and government tax support for business R&D, 2018 and 2006, OECD R&D Tax Incentive Database, <http://oe.cd/rntax>, December 2020.

For example, the percentage of government assistance to business R&D that is allocated through a tax incentive mechanism (indirect assistance) is:

- Australia: 86 per cent
- UK: 76 per cent
- Canada: 69 per cent
- US: 38 per cent
- NZ: 11 per cent
- Israel: Zero per cent (no tax incentive, all direct mechanisms)
- Germany: Zero per cent (no tax incentive, all direct mechanisms)

In its submission to the University Research Commercialisation taskforce, Universities Australia highlighted multiple direct R&D funding initiatives that the Government could adopt or scale up, to boost Australia's innovation and productivity, including:⁵⁸

- Consider the strategic balance approach to investment articulated in Industry, Innovation and Science Australia's advice to Government.
- Adopt a nationally cohesive approach that leverages state-based R&D and innovation initiatives.
- Focus on demand-side incentives for business as it may be more effective in stimulating research commercialisation.
- Investigate the scaling and optimisation of the current Business Research and Innovation Initiative (BRII) program.
- Investigate the introduction of a Small Business Technology Transfer (STTR)-like program.
- Enhance the matching of R&D supply and demand in SMEs by introducing a technology vouchers scheme like that practiced in NSW.
- Mission-driven activity should be appropriately linked to demand, including existing and emerging Australian industry. Connecting mission-based activity to the Modern Manufacturing Strategy should be investigated. Mission oriented innovation policy involves the selection of a societal challenge on which to focus effort. The clustering of research and industry towards shared goals is an effective way of linking research with demand. A recent example of this is the Australian Government's Clean Hydrogen Mission, announced in June 2021.
- Investigate the introduction of a technology transfer network like the German Steinbeis system, in addition to conducting a scan of the system of Australian technology transfer.
- Reinstating the robust measurement by Government of research commercialisation across the entire research sector to provide accurate, quality data on a policy objective of this importance.

The recently released University Research Commercialisation Action Plan seeks to further focus research funding in universities into research commercialisation. Universities Australia supports a balanced approach to research funding which also supports the critical role of discovery research, and the role that only Government can play in providing the patient funding that such research

⁵⁸ UA submission can be accessed at: <https://www.universitiesaustralia.edu.au/wp-content/uploads/2021/04/UA-Submission-Uni-research-commercialisation.pdf>

requires. UA's approach gives Australia the best chance of developing sovereign capability across priority fields of research, and across the basic, applied and translation pipeline.

This narrowing of focus for funding research in the university sector is not matched by a narrowing of support for industry R&D. In 2019–2020, Government provided \$2.7 billion⁵⁹ of support to industry through the Research and Development Tax Incentive (RDTI) with almost no say in how that R&D should be focussed in the national economic or commercial interest. It is also unclear how Government measures the value or return for this investment.

Recommendation 7:

The Productivity Commission consider the appropriate balance of the Government's investment in university research to enhance Australia's productivity.

Recommendation 8:

The Productivity Commission consider whether Australia's research and development effort would be better supported through shifting the balance between direct support programs and indirect schemes like the R&D Tax Incentive.

⁵⁹ Australian Government, Science, Research and Innovation (SRI) Budget Tables, 2021-2022.

6 REGULATION AND PRODUCTIVITY

Stable and predictable policy is important to maximising universities' productivity.

Universities respond to oversight and review from a range of Commonwealth departments and agencies, including:

- Department of Education, Skills and Employment;
- Department of Home Affairs;
- Department of Defence;
- Attorney-General's Department;
- Department of Foreign Affairs and Trade;
- Department of the Prime Minister and Cabinet;
- Tertiary Education Quality Standards Agency (TEQSA); and
- Australian Research Council (ARC).

Universities welcome oversight of their activities. However, each Government department and agency works from their own perspective and set of responsibilities. The cumulative effect of uncoordinated oversight hinders productivity on both an institutional and sectoral level, engendering a short-term focus as institutions await the next review. This is not the basis for creating the long-term policy settings which would allow universities to make a greater productivity contribution.

Good practice case study – universities and national security

Universities and Government work effectively and collaboratively on a range of national security issues, of which the best example is the University Foreign Interference Taskforce (UFIT). The revised UFIT Guidelines, released in November 2021, are a testament to what can be achieved through effective collaboration – one which other countries in the world have sought to emulate.

Universities are contributors to a safe and secure Australia and support risk-proportionate and coherent approaches to policy and regulation. In all cases, the regulatory costs and benefits should be identified and recognised in accordance with best practice regulation, making principles articulated by the Commonwealth Office of Best Practice Regulation. Government has recently identified the implementation of UFIT as “low cost”. Universities Australia strongly disagrees with this assessment of the impact. UA is aware that the implementation costs of cybersecurity and due diligence measures have run into the many millions across the sector to date. Only by identifying and quantifying regulatory cost can the comparative benefits of a proposed regulation be identified.

In addition to legislation and regulations, which are important for a well-functioning university system, there has been a trend increase in recent years in the burden of quasi-regulation that have imposed additional regulatory compliance activities. While such guidelines are not compliance documents, there are nevertheless expectations about how universities respond to the advice contained in them.

Universities Australia will continue to work with Government to identify efficiencies and to strengthen policy coherence.

Recommendation 9:

The Productivity Commission consider measures to:

- identify and deal with regulatory overlap;
- coordinate regulatory and reporting requirements more effectively in different portfolios; and
- work with stakeholders to understand the balance of regulatory benefit and cost.

APPENDIX 1: UNIVERSITIES ARE PILLARS OF THEIR LOCAL COMMUNITIES

In addition to their contributions in preparing Australia's skilled workforce and the nation's research capability, Australian universities are pillars of their local communities. This has been clearly demonstrated during the recent flood crisis, the Black Summer bushfires in 2020, and during the nation's response to the COVID-19 pandemic. Universities have opened their campus facilities and shared their expertise and resources to support local communities, emergency authorities, students and staff.

During the recent flood crisis in New South Wales, universities at flood affected communities rose to the challenge and played a major role in the rescue and recovery efforts across the region. At the height of the emergency, Southern Cross University (SCU) – a national leader in marine science – deployed six research vessels for flood rescues. SCU's Lismore Campus was designated as the primary emergency evacuation centre. The high ground of the campus and the dry floors of its sports hall provided desperately needed refuge to the Lismore community. Within 24 hours, the evacuation centre was home to not only hundreds of people but also displaced animals. More than 500 Australian Defence Force personnel were camping on the campus grounds as they joined the clean-up effort. The flooded Lismore police station that was inoperable also relocated to the university campus and is now servicing the region from their makeshift set-up. Southern Cross University's National Marine Science Centre has housed three million oyster babies for all flood affected commercial farmers in the area, when floodwaters threatened the Mid North Coast oyster industry.⁶⁰

During the Black Summer's bushfires, Australian universities contributed to the recovery efforts across their community. Some of these community assistances include, but are not limited to:

- The University of New England provided almost 2,000 beds and served almost 7,000 meals for the Rural Fire Service.
- Charles Sturt University's Port Macquarie campus accommodated up to 200 firefighters at a time in December 2019. The university also made rooms available in Wagga Wagga, Albury and Bathurst for evacuees.
- Federation University Australia made 40 beds at its Gippsland campus available for emergency evacuation purposes.
- Sixteen apartments at Swinburne University of Technology's student residences in Hawthorn were offered to families affected by the bushfires. The university also donated clean bed linen to be distributed to bushfire victims.
- University of Wollongong made its Bega and Batemans Bay campuses available as places of refuge for people fleeing bushfire zones. Approximately 200 people sheltered at the Batemans Bay campus and 33 people and five pets sheltered from the fires at the Bega campus.
- Western Sydney University made emergency accommodation available at its Hawkesbury campus. Across all campuses, the university made 350 beds available for up to six weeks.
- The University of Adelaide helped grape growers and wine makers affected by the fires and smoke taint and offered cold storage for vintages.

⁶⁰ <https://www.theaustralian.com.au/higher-education/southern-cross-university-goes-all-in-to-help-lismore-battle-the-flood/news-story/e59f809f31b01206d0bae4795f0037ab>.

- The University of Newcastle opened its innovation precinct to small businesses displaced by the fires.
- University of the Sunshine Coast used Bear – the university detection dog – to search for injured and displaced wildlife, particularly koalas. (Funded by the International Fund for Animal Welfare).
- Veterinary care for animals – both evacuated and injured - was provided by The University of Sydney, The University of Melbourne and Charles Sturt University through their vet clinics.
- Staff at Swinburne University of Technology created ‘fauna balls’, providing sustenance for wildlife that have lost their main food source.
- The University of Adelaide participated in seedling planting to revegetate fire-affected areas.
- The University of Newcastle has made its sports training grounds available to the ACT Brumbies who were affected by hazardous bushfire smoke.
- The University of Canberra asked communities what they need to respond and recover to bushfires. The university sent mobile health clinics to impacted towns and explored student placements on work integrated learning opportunities to support affected regions.

Australian universities have also played a significant role in the nation’s response to the COVID-19 pandemic. Many health students across a range of disciplines became part of the pandemic surge workforce. Students were involved in various ways across different jurisdictions from administrative to clinical roles. Where relevant to their scopes of practice and with appropriate training and oversight, students from certain disciplines were also able to assist as student vaccinators.

Most universities operate primary care clinics. While operating models and structures vary, the main goal of these clinics is to offer primary care services to staff, students and the broader community. During the pandemic, many university clinics played a critical part in the national vaccine rollout over and above their usual primary care delivery.⁶¹ Participating university clinics were listed on the COVID-19 Eligibility Checker and were accessible to all people in their community. Some clinics were open from 8am to 10pm to provide extended community access. Vaccine delivery varied from clinic to clinic and was highly dependent on vaccine availability and supply. However, figures range from 5,000 vaccines in the first six months to the administration of 500 to 600 vaccines per week.⁶²

Some clinics supported vaccine roll-out in particularly vulnerable groups. For example, the University of South Australia’s clinic worked with aged care facilities to vaccinate elderly residents, accelerating vaccination of those most in need. Some universities without primary care clinics on-campus still supported access to vaccines by offering their campuses for use as vaccination hubs, with a total of 65 hubs opened during the pandemic. For example, Western Sydney University does not have a medical centre. However, they brought vaccination hubs on-campus during the pandemic to enable campus and community access to vaccinations. Like other universities, they also have COVID-19 Testing Clinics open to the public. More recently, universities have also made their campuses available as booster vaccination hubs in harder to reach areas.

⁶¹ To participate in the vaccination roll-out, clinics had to meet certain criteria such as having sufficient waiting room space; having separate vaccination and post-vaccination observation areas etc. This precluded some university clinics from participating.

⁶² Noting that in the early months of the vaccine roll-out, vaccine supply, especially of Pfizer, was limited with many primary care clinics were only receiving 50 per week during this time.

Many universities also set up testing centres and supported COVID-19 monitoring functions. For example, the University of Melbourne became part of the Victorian Public Health Track and Trace Network – which was vital during the Melbourne outbreak. They – like many universities – also undertook meal drops to community members during the lockdown to support people isolating or in quarantine. Universities also promoted and distributed vaccine information within their local communities, keeping people updated and advised about the pandemic and where they could access testing, treatment and vaccination.

In addition to COVID-19 response, a number of universities run student-led clinics which are distinct and separate from their primary care clinics. Student-led clinics provide opportunities for health professions students to undertake supervised clinical placements while also offering community access to much needed health services. Such clinics enable community members to access health services that are either non-existent, hard to get into or not affordable within their locality. For example:

- The University of Canberra student-led clinic is a multidisciplinary student-led allied health clinic that provides services – such as physiotherapy, speech pathology, occupational therapy, counselling and clinical psychology – to the community at reduced fees or rates. The clinic enables local residents to access services they could not otherwise afford and/or where there are long waiting lists in the public health system, while also supporting hundreds of students to complete their required clinical placements every year.
- James Cook University's mobile dental health service is delivered by fourth/fifth-year dental students. This mobile clinic provides dental services to rural and remote communities in various parts of Queensland and the Northern Territory. In one year, the service provided more than 36,000 occasions of service to patients in the Cairns district alone. Without this service, these communities would struggle to access dental care. Prior to establishing the mobile dental clinic, the shortest waiting time for public, non-emergency dental services in the area was four years.