



Higher Education in Australia

In recent years Australia's 43 (36 public, 7 private) universities have between them educated over 1.5 million students per year,¹ including almost half a million overseas fee-paying students, and carried out 36% of Australian research measured² in terms of research expenditure. International education is Australia's fourth biggest export.³

The service role and social purpose of their universities is not something Australians discuss much. Most discussion that does happen is initiated by the universities themselves seeking support for a system that is stressed in many ways, or by the Commonwealth government expressing frustration that the universities are not more efficient at what they do and not delivering more—at present the particular preoccupation is why they are not delivering more in terms of commercialisation.⁴ Universities rarely feature in election debates at either State or Federal levels. They are largely taken for granted as part of many people's education pathway. The extent

¹ <https://www.universitiesaustralia.edu.au/wp-content/uploads/2020/04/Data-snapshot-2020.pdf>

² <https://www.abs.gov.au/statistics/industry/technology-and-innovation/research-and-experimental-development-businesses-australia/latest-release#gross-expenditure-on-r-d-gerd->

³ <https://www.smh.com.au/national/foreign-students-are-our-fourth-largest-export-even-with-the-pandemic-20210218-p573pz.html>

⁴ E.g. <https://www.dese.gov.au/urc> and <https://theconversation.com/our-unis-are-far-behind-the-worlds-best-at-commercialising-research-here-are-3-ways-to-catch-up-159915>

of their research is underestimated even by many in the sector, and the term ‘academic’ is often used pejoratively.

But the impact of Australian universities has been considerable and multifaceted and has evolved significantly over the 171 years since the University of Sydney, the first Australian university, was founded in 1850. We explore this from various angles below—student numbers, university location, policy evolution and research. This provides useful snapshots but there are many other dimensions that could have been explored as well, such as staff profile, cultural impact and second-track diplomacy.

STUDENT NUMBERS

Universities were an important though largely symbolic part of Australian nation-building in the second half of the nineteenth century and the early twentieth century, along with parliaments, churches, hospitals, schools and cultural institutions. The rhetoric around their establishment was the importance of having advanced education available for the leaders of this wealthy emerging democracy. By the time of Federation in 1901, four States had passed Acts of parliament establishing grand-looking universities in their capital cities. These were the universities of Sydney, Melbourne, Adelaide and Tasmania. But at that time, not many people were able to attend university—out of a population of 3.8 million people there were about 2560⁵ university students, 0.07% of the population.

Two more States established universities not long after Federation—the University of Queensland (1909) and the University of Western Australia (1911). University enrolments grew slowly in the period up to the Second World War. By 1939, when the Australian population was almost 7 million, there were 14,236 students at universities, 0.2% of the population.

Enrolments and participation rates grew much faster after the Second World War. There were ten times as many university students in 1980 as in 1950, and 39 times as many by 2010.⁶ For context, the population in 1980 was 1.8 times larger than in 1950 and 2.7 times larger by 2010 (see Table 4.1).

Not all these students were Australian. By 1990, 5% of the student cohort was international; this percentage had risen to 28% by 2008. The international student percentage has since dropped, staying at around 25%

⁵ https://en.m.wikipedia.org/wiki/Tertiary_education_in_Australia and <https://www.abs.gov.au/statistics/people/population/historical-population/latest-release>

⁶ <https://theconversation.com/who-goes-to-university-the-changing-profile-of-our-students-40373>

Table 4.1 Australian university student numbers and population 1950–2010

<i>Year</i>	<i>Student numbers</i>	<i>Population</i>	<i>Student numbers as a percentage of population^a (%)</i>
1950	30,630	8,178,696	0.37
1960	52,633	10,275,020	0.51
1970	161,455	12,507,349	1.3
1980	329,523	14,695,356	2.2
1990	485,066	17,065,128	2.8
2000	695,485	19,028,802	3.7
2010	1,192,657	22,031,750	5.4

^aThe figures in this column represent participation rate up to 1990; after that the situation is complicated by the presence of a substantial cohort of foreign students.

up to COVID. Post-COVID, it is hard to know where the foreign student numbers will settle.

Originally most students were enrolled in undergraduate awards. Now postgraduate coursework students account for about a quarter of all enrolments and research students account for around 5%.

To begin with, most university students were male. By 1987 there were equal numbers of males and females, and by 2018 about 58% of the university student population was female though, in certain fields, notably most engineering disciplines, female students account for less than 20% of the total student cohort.⁷

Over the last 30 years participation by indigenous students and by students from non-English speaking and low socioeconomic backgrounds has improved but is still not representative of their population shares. Nevertheless, Australia is a well-educated country. By the 2016 census 24% of youths and adults had a university qualification and 59% had some form of post-school qualification.⁸

WHERE AUSTRALIAN UNIVERSITIES ARE AND WHY IT MATTERS

Up to the Second World War all Australian universities were associated with capital cities of Australian States although there were two university colleges, one in regional New South Wales at Armidale, which was part of

⁷<https://grattan.edu.au/report/mapping-australian-higher-education-2018/>

⁸<https://www.abs.gov.au/AUSSTATS/abs@.nsf/mediareleasesbyReleaseDate/1533FE5A8541D66CCA2581BF00362D1D>

the University of Sydney, and one in the national capital, Canberra, and part of the University of Melbourne. In 1949, the Australian National University was created, located in Canberra and initially established as a research and research training university. It subsequently incorporated the Canberra University College, thus acquiring an undergraduate arm. In 1954 the Armidale university college became a university in its own right, the University of New England.

Since the mid-1950s, 26 more public universities have been created. Seven were new, but the majority resulted from the amalgamation, largely in the late 1980s, of a variety of agricultural colleges, teachers' colleges, colleges of advanced education and institutes of technology. Often spread over several locations, these new entities were designated universities. At the same time, many existing universities also acquired new campuses through similar amalgamations.

In the last 30 years, many universities have established yet more new campuses as part of a strategy to grow student numbers. Most of these campuses are in regional locations but some are regionally headquartered universities acquiring a capital city central business district presence, particularly to increase their chances of attracting foreign students.

As a result, there are university campuses in about 50 Australian cities and towns,⁹ many of them with beautiful buildings and grounds. Several universities also have overseas campuses, mainly in Asia.

While big city universities make important contributions to their local populations, the impact of having a campus in a small regional town can be transformative. Individuals benefit directly. Many people benefit from low socioeconomic backgrounds, especially indigenous Australians who otherwise would not be able to attend university and receive all the economic and social potential that is offered by a university education. There are also indirect benefits. If the university has a medical school, for instance, local healthcare is improved as there are specialists available who would almost never be in the bush otherwise. This means more people in the bush can access services such as cancer treatment that are much harder to access if the patient has to travel to a capital city often thousands of kilometres away. Similarly, the presence of other professional schools (e.g. veterinary science, engineering, agricultural sciences) means that specialist advice in those fields is readily on tap, generally with economic benefits for small businesses, especially farms. And the town benefits as well, since the

⁹<https://www.studyaustralia.gov.au/english/australian-education/universities-higher-education/list-of-australian-universities>

university is often the biggest employer, its facilities provide a natural venue for cultural events, and the university will often attract people to the town who would not normally visit. Overseas students come for several years to study and sometimes stay on as ‘new Australians’. Other people come for shorter visits, such as for conferences and summer schools, bringing benefits to local tourism and hospitality providers.

Universities thus play a significant role in underpinning the sustainability of rural Australia, something that is vitally important to a country that is very large and very sparsely populated.

POLICY LEVERS

The major inspiration for designing Australian universities was the UK system. This is reflected in all sorts of ways, from university administrative structure to architecture to the large number of British academics working in the Australian system. But the UK influence is probably most apparent in the evolution of policies affecting how the university system has developed in Australia. This is despite the fact that policy impacts in Australia are often different from the UK in effect and scale given that Australia is a much larger country geographically, has a much smaller population, and is politically organised as a federation of States and territories.

Australia’s public universities are all governed under Acts of state and territory parliaments with the exception of the Australian National University, which was created under a Commonwealth Government Act. Nevertheless, most of the major policy interventions affecting universities come from the Commonwealth Government which, over time, has increasingly provided the bulk of public funding to universities following a formal transfer of funding responsibilities in the mid-1970s. The various university Acts, however, remain with their original governments.

Many schemes at various times have helped individuals get a university education and also helped universities grow. For example, the repatriation scheme after the First World War gave returning soldiers a 50% discount on university fees.¹⁰ After the Second World War, the Commonwealth Reconstruction Training Scheme provided free university education and living allowances to returning soldiers (male and female). By 1951,

¹⁰<https://pursuit.unimelb.edu.au/articles/after-the-fighting-the-soldiers-who-studied>

approximately 17,000 returned service personnel had completed university studies under this scheme and some 800 were still at university.¹¹

Other sources of growth were incidental to another purpose. By demanding a university education as a condition of the right to practice, the professions not only promoted growth in universities but also broadened the variety of courses on offer. As a result, individuals received a university level education, the professions gained intellectual depth and rigour and the universities grew. Early professions requiring a university education included medicine, dentistry and engineering. In recent decades the list has expanded greatly and now includes accounting, librarianship, computer science and teaching, among others. Another example of incidental growth was how, for many years, teacher education took the form of a bonded scholarship which involved studying for a bachelor's degree followed by a diploma of education. Many people who did not particularly want to be teachers gained a university education and then either paid back part of the scholarship or served out the minimum time as teachers before moving on to what they really wanted to do.

But not all developments in universities were incidental to other purposes. Commonwealth Governments from both sides of politics have commissioned numerous studies over the years, investigating aspects of universities and acting to varying degrees on the recommendations. The Mills Committee's recommendations in 1950¹² led to the Commonwealth making substantial grants to the States for the universities, and led to the introduction in 1951 of Commonwealth Scholarships, a scheme whereby students with high matriculation scores were awarded university scholarships that paid for fees and provided a means-tested living allowance.¹³

In response to the Murray Committee report in 1957,¹⁴ the Government significantly increased recurrent funding to universities, introduced capital funding and established the Australian Universities Commission to advise on grants to universities.

The Martin Committee¹⁵ (1964) built on the work of the Murray Committee, especially on that Committee's recommendations to make university education more widely available. Arguably, it did not pursue the

¹¹ https://en.m.wikipedia.org/wiki/Commonwealth_Reconstruction_Training_Scheme

¹² https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Publications_Archive/archive/hefunding

¹³ <https://archives.unimelb.edu.au/resources/keys-to-the-past/keys/key-67>

¹⁴ <http://hdl.voced.edu.au/10707/228224>

¹⁵ <https://www.voced.edu.au/content/ngv%3A53781>

Murray Committee's recommendations for a less elite system but recommended the introduction of a binary system, under which much of the tertiary level education in technical areas and education in 'new' fields (e.g. computing, journalism, librarianship) were to be offered through colleges of advanced education that would concentrate on teaching and not carry out research, and thus were seen as having lower status than universities. As a result, several colleges of advanced education were established, many located in non-capital cities.

In 1973, university fees were abolished and the Commonwealth took full responsibility for almost all government funding to universities.¹⁶

The biggest shakeup of universities came in 1988, when the Commonwealth Minister for Employment, Education and Training, the Honourable J S Dawkins, released a green paper followed, after extensive consultation, by a white paper entitled 'Higher Education: A policy statement',¹⁷ which outlined a roadmap towards a mass higher education model for Australia with sustainable funding. One of the major steps in implementing this was the creation of the Unified National System in 1989, under which the distinction between universities and colleges of advanced education was removed. This was followed by a significant rationalisation, mainly through amalgamations, of the 75 higher education institutions (with various names) to 36 universities—which (in many ways thanks to the Martin Review) were located in capital cities and regional centres.

A detailed set of funding reforms were part of the Dawkins package. These included:

- the introduction of the Higher Education Contribution Scheme whereby students had to pay a contribution to the cost of their university education but could cover this using an income-contingent loan managed through the national tax system
- the Relative Funding Model, applied once, to ensure all universities were funded at the same amount per student but with weighting for different disciplines
- an increased emphasis on national competitive grants for research

¹⁶ https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Publications_Archive/archive/hefunding

¹⁷ <https://catalogue.nla.gov.au/Record/455837>

- measures designed to encourage universities to earn income from other sources, including earning funding from commercialising research results and being given permission to charge fees for international students.

Despite the Dawkins changes being broadly supported by State and Commonwealth governments and across the political spectrum as providing a way to achieve mass higher education with sustainable funding, they were deeply unpopular with academics and students. Students did not like the reintroduction of fees, and academics disapproved due to a variety of factors associated with status, funding changes consequent on the Relative Funding Model and organisational changes flowing from the amalgamations.

These changes have proved long lasting, and the Australian higher education system still looks structurally much as it did in 1990 despite several subsequent reviews and tweaking, particularly around demand-driven initiatives and domestic full-fee-paying places. The intent of most of the reforms has been realised, and Australia now has a mass higher education system and universities that are increasingly less dependent on government for financing, with almost half their revenue coming from sources other than government appropriations to universities.¹⁸ That said, Dawkins himself argues it is time for another major shakeup.¹⁹

RESEARCH

For many years Australian universities were not particularly active in research. From 1916, public sector research was dominated by the work of the Commonwealth Scientific and Industrial Research Organisation (CSIRO), and its predecessor bodies carrying out research to support industries of national importance, notably agriculture and mining. But with the creation of the Australian National University in 1949, originally dedicated only to research and research training, the situation changed and research became a more important part of university life, encouraged

¹⁸ <https://grattan.edu.au/wp-content/uploads/2018/09/907-Mapping-Australian-higher-education-2018.pdf>

¹⁹ <https://www.afr.com/work-and-careers/management/john-dawkins-says-his-university-reforms-are-completely-out-of-date-20160924-grnt3e>

subsequently through the recommendations of the Mills, Murray and Martin Reviews.

Other stimuli to university research were the introduction of the PhD degree (the first PhD awards were given by the University of Melbourne in 1948²⁰) and the availability of competitive research grants for individuals and teams with the creation of the Australian Research Grants Committee in 1965, which awarded \$4 million²¹ to 406 successful applicants in its first funding round in 1966.²²

The Dawkins changes included the creation of the Australian Research Council in 1988 which, as well as replacing the Australian Research Grants Committee, tackled a wide range of research policy issues, including how to support early career researchers; research concentration; how university research could support industry; and increasing the international profile and connectedness of Australian university research. It also introduced a range of new funding schemes, including a multi-part Fellowship scheme; a very successful industry university collaborative grants scheme called the Linkage Grants; research centre of excellence programmes (initially the Special Research Centres and the Key Centres for Teaching and Research); and research infrastructure grants. Over time these schemes were modified and new schemes were added. They were complemented by another large new programme devised by Australia's first Chief Scientist, Ralph Slatyer, the Cooperative Research Centre Scheme,²³ which funded industry focused competence centres with companies and research organisations contributing significantly as well.

Universities were also encouraged to apply to other competitive research schemes depending on subject area. For instance, medical and dental research is funded through the National Health and Medical Research Council, and agricultural research is funded through the rural research and development corporations.

Along with the fact that the bulk of PhD students were now being educated in Australia rather than overseas, research became a serious part of university activity from the late 1980s. Today, this is true across the board but particularly true of the research-intensive universities, the Group of

²⁰ <https://dro.deakin.edu.au/eserv/DU:30014355/evans-somecharacteristics-2004.pdf> & <https://files.eric.ed.gov/fulltext/EJ968535.pdf>

²¹ \$ in this chapter refers to Australian dollars.

²² <https://www.arc.gov.au/about-arc/arc-profile>

²³ <https://business.gov.au/grants-and-programs/cooperative-research-centres-crc-grants>

Eight universities (Adelaide, Australian National University, Melbourne, Monash, Queensland, Sydney, University of New South Wales and Western Australia), which continue to attract about two-thirds of the research funding despite fierce competition from the rest of the sector.²⁴

A notable feature of Australian university research is that funding through the various Commonwealth competitive schemes (one-third of all university research income) is not generally full funding, but rather a contribution that relies on certain costs (e.g. the cost of the principal investigator's time) being borne by the applicant university. Finding funding to cover the university's contribution is a constant challenge, particularly as the universities have grown in size, often at marginal funding rates. And, obviously, the more successful a university is in attracting research funding at below-full-cost levels, the more it has to find to make up the difference.

The government does provide some help with this shortfall—the so-called research block grant—but the method by which block grant allocations are calculated adds another twist. It categorises and weights certain styles of research funding differently, effectively giving a status order to types of research funding, which drives researchers to apply preferentially for grants with a relatively low government contribution. As this status order is also implicitly used in academic promotion criteria, the same behaviour is reinforced further.

One might query why universities chase these high status but relatively poorly supported grants so ferociously. The answer lies in the pivotal role of research in the international university ranking schemes, which are taken very seriously by Australian universities as international students use them as a guide when deciding where to study. As international student funding is needed by most universities to make up for the shortfall left by the full funding problem, a truly vicious cycle has emerged that gets tighter every year.

The effect of this vicious cycle, along with various exhortations and incentives to universities to be more industry focused in their research, has, ironically, led to a situation where university expenditure on research has grown considerably to \$12.7 billion in 2019–2020 (up from \$8.9 billion in 2011–2012) accounting in 2019–2020 for 36% of gross domestic expenditure on research and development (GERD), up from 28% of

²⁴ https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp2021/Quick_Guides/UniversityResearchFunding

GERD in 2011–2012. For comparison, in 2019–2020, business accounted for 51% of GERD (down from 58% in 2011–2012) and government research (mainly CSIRO) accounted for 10% of GERD (11% in 2011–2012).²⁵ Despite this impressive growth, there is a perception in the general community that CSIRO is a bigger contributor to Australian research and development than the universities, and governments are very critical of universities being too focused on basic research despite their considerable support for industry, with 48% of their research being applied and 11% being experimental development.²⁶

Over the last 18 months there has been a very strong push for universities to perform much better in research commercialisation. This has led to the recent announcement of a new initiative called Trailblazer Universities, under which \$243 million will be allocated over four years to four universities, including one regional one, to commercialise research. The Commonwealth Minister for Education’s media release on this was entitled ‘From ivory towers to engines of successful industry’.²⁷

PRE-COVID PREOCCUPATIONS

Before COVID hit, universities were preoccupied with delivering quality education and research in the face of the vicious cycle described above. While governments were pleased with the economic success of the foreign student market (Australia’s fourth biggest export industry), they imposed heavy compliance and quality assurance requirements on the universities to protect and hopefully grow this market further. This, along with the need to increase student services to support international students, led to the universities increasing their administrative staff to deal with the various reporting requirements. This in turn led to significant criticism from governments and industry leaders that universities were inefficient which makes sense superficially since approximately 57% of permanent university staff over the last three decades have been non-academic.²⁸

Students were unhappy about very large lecture classes and perceived low levels of academic support. Staff were reporting high work stress from

²⁵ <https://www.abs.gov.au/statistics/industry/technology-and-innovation/research-and-experimental-development-businesses-australia/latest-release#gross-expenditure-on-r-d-gerd>

²⁶ https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp2021/Quick_Guides/UniversityResearchFunding

²⁷ <https://ministers.dese.gov.au/tudge/ivory-towers-engines-successful-industry>

²⁸ <https://grattan.edu.au/report/mapping-australian-higher-education-2018/>

the demands of the large classes and their wishes and needs to keep up in research. University leaders keenly felt the pressure of staff and student (and often governing body) criticism internally, and criticism from governments and industry externally.

PANDEMIC PREOCCUPATIONS

COVID made it all worse. Suddenly the international student market looked in danger of collapsing. Many universities moved quickly to introduce redundancy programmes under which large numbers of academics left the system. While lectures in very large classes had not been great, watching them online was no better. Students and staff missed the social interaction, and this was particularly hard on certain groups, such as first-year students who had no prior experience of university, and PhD students who were trying to finish theses under time constraints, with interrupted experiments and little support in the writing-up phase. Experimental researchers were highly disadvantaged by lab closures. The almost two-year moratorium on international travel meant that international students couldn't reach Australia and researchers could not attend international conferences, a significant problem for Australian academics who, because of the distance of Australia from the research-intensive hubs of North America, North Asia and Europe, rely on conferences for vital research connections.

CONCLUSION

The Australian university system performs well in comparison with its OECD peers. Australians have good access to opportunities for university study and many take advantage of that. International education, for which universities are a pivotal part, is a major export success, and universities are major contributors to Australian research and development. But the Australian university system is stressed, and its current funding and performance are not sustainable, particularly if COVID causes the number of foreign students to plummet.

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