SCIENCE & TECHNOLOGY AUSTRALIA POLICY SUBMISSION

4 NOVEMBER 2022

PRODUCTIVITY COMMISSION 5-YEAR PRODUCTIVITY INQUIRY INTERIM REPORT 5: FROM LEARNING TO GROWTH

Science & Technology Australia is the peak body for the nation's science and technology sectors, representing 105 member organisations and more than 90,000 scientists and technologists. We connect science and technology with governments, business and the community to advance science's role in solving some of humanity's greatest challenges.

We thank the Productivity Commission for this opportunity to offer input on From learning to growth, the fifth interim report for its 5-Year Productivity Inquiry.

Education is transformative. It uplifts our entire society to be more productive, more socially equitable, more prosperous, healthier, and safer. As we face the challenges of the coming decades, we need a society that is well-informed and well-equipped to deliver new innovations to support our society and way of life. We will need more university-qualified graduates entering the workforce, and more STEM-skilled graduates in particular, to meet the needs of a future workforce driven by technological advances.

We will need more university-qualified graduates entering the workforce, and more STEM-skilled graduates in particular, to meet the needs of a future workforce driven by technological advances.

The productivity gains from a highly educated workforce extend across society. Graduates themselves will gain a significant earnings premium over their careers, but benefits also extend to people without degrees – the 'spillover effects' of university graduates entering the workforce include job creation for non-graduates, boost wages for non-graduates, and make a powerful contribution to Australia's GDP.[1]

MEETING FUTURE SKILLS AND JOB NEEDS

The report notes that the demand for workers with a bachelor level qualification or higher to support a skilled workforce significantly outpace available university places over coming years (p46). This highlights the importance of maintaining a strong and accessible university system that is well-resourced to meet the workforce demands of the future. Support for STEM degrees will be especially

[1] https://www.universitiesaustralia.edu.au/wp-content/uploads/2021/01/The-graduate-effect-higher-education-spillovers-to-the-Australian-workforce.pdf

important, given the Government's goal of building Australia's tech sector to achieve 1.2 million tech jobs by 2030.
Science & Technology Australia supports calls for extra fully-funded university places. Universities cannot be expected to teach more students without additional funding for each extra place. STA also backs more support for equity groups to ensure higher education is accessible to all Australians.

JOB READY GRADUATES FUNDING PACKAGE

Science & Technology Australia welcomes the Productivity Commission's critique of the Job Ready Graduates funding package. The scheme proposed to create 39,000 extra university places over three years – **but with no additional Commonwealth funding**. The scheme included a three-year transitional buffer arrangement, which is set to expire in 2024 – this is when universities will feel the full impact of the funding changes.

The package adjusted Commonwealth funding per place for degrees, as well as the student contribution amounts (student fees). The premise for these adjustments was to direct student choices by reducing the student contributions for degrees in areas of skills shortages – such as STEM.

Science & Technology Australia certainly supports the goal to produce more STEM-skilled graduates. However, the package ultimately created the opposite incentive. It significantly cut the total funding to universities per student place in several STEM degrees – by 17 per cent for mathematics, 16 per cent for science, and 9 per cent for agriculture. Per place funding for other important degrees was also cut – by 8 per cent for nursing and 6 per cent for education[2].

At the same time, the student contribution amounts for several humanities and social science degrees (HASS) degrees were raised, creating a boost to total funding per place for HASS degrees.

Combined, these changes have created a perverse disincentive for universities to produce more STEM graduates in areas pivotal to Australia's future productivity.

The report notes the income-contingent nature of HELP loans support students to undertake university study – which are designed to be repaid only when students earn wages above a designated threshold – makes students much less sensitive to price signals. They choose university courses based on their interests and aptitude.

Given the importance of having STEM-qualified graduates to support the workforce, Science & Technology Australia advocates restoring the previous funding levels for each student enrolled in a STEM degree.

TEACHING QUALITY

The report notes the high number of teaching staff at universities on casual contracts, suggesting that this, and an existing strong focus on rewards gained from a strong research capability, limits universities' ability to improve quality in teaching and enhance student outcomes (p82). Science & Technology Australia is alarmed at the scale of job insecurity in STEM teaching and research in the higher education sector and has consistently advocated for stronger job security and certainty.

[2] https://www.universitiesaustralia.edu.au/wp-content/uploads/2020/09/200910-UA-submission-to-inquiry-into-JRG-legislation.pdf

Similarly, the report suggests teaching quality and learning outcomes could be improved through greater 'contestability' of funding for universities. In a system where funding is already constrained, yet will be expected to cater to larger numbers of students over the coming decade (p46) this would be highly unlikely to promote a stronger system overall. Universities serve essential functions in both our cities and regions, and pitting them against each other to fight for slices of an ultimately diminishing pie will be detrimental to the sector as a whole.

At the same time, the report acknowledges the very salient issues with relying on performance-based funding for higher education, including the difficulty in establishing appropriate metrics and avoiding potential disincentives for universities to enrol disadvantaged students or those from minority groups. Science & Technology Australia strongly cautions against promoting more use of performance-based funding for higher education institutions. Education must be accessible to everyone in Australian society, and the health of our future workforce depends on supporting a diverse range of Australians to seek out qualifications and skills.

INTERNATIONAL STUDENTS

International students are referred to as a '…key financial factor in tertiary education, but less relevant to productivity' (p47). This extremely limited view fails to recognise the vast potential of international students as valuable skilled migrants that have already made a significant investment in coming to Australia. From a productivity perspective, international students come to Australia at a prime time in their lives, with all the costs of their early and secondary education having been met by their home country. They then immerse themselves in the Australian higher education system and broader society, fully funding the cost of their own university education, and making significant contributions across the entire economy. They graduate from Australian institutions with a high-quality qualification and are ideally placed to support our labour needs.

International students promote intellectual innovation through their diversity and unique perspectives. This diversity enhances the student experience for all students and enhances the quality of work. International graduates who settle in Australia through the skilled migration program, have been vital in enhancing workforce diversity in STEM fields. For example, the engineering workforce is only 13 per cent women[3]. Engineers Australia's analysis found that over the last decade, the only reason this did not decrease is the high women participation through migrant engineers.

Science & Technology Australia agrees visa and migration settings must be carefully considered to maximise the benefits international students and graduates can bring to Australia, but strongly cautions against taking a negative overall perspective or relying on negative anecdotal claims (as per p47) to guide policy.

Most importantly, we need to recognise that Australia has been privileged to attract international talent through high-quality education offerings. It is a highly competitive space, and our traditional source of students are now also investing heavily in their own quality offerings. To protect and enhance Australian productivity, we need to proactively consider the value we offer to the development and lives of our graduates – beyond their initial qualification – to stay competitive. Australia's workforce in many sectors crucial to our productivity largely depends on international graduates, trained at Australian institutions, who have chosen to make Australia home. These sectors include information and computing technology automation and robotics, industry 4.0, and

[3] https://www.engineersaustralia.org.au/sites/default/files/2022-07/women-in-engineering-report-june-2022.pdf

internet-of-things and data analytics. Improved data on the composition of these workforces is needed to properly appreciate the benefits international students and graduates bring to Australia.

SUPPORT FOR EQUITY GROUPS

Science & Technology Australia strongly supports active consideration of how best to support equity groups to improve access, retention and completion rates. These are complex considerations but are critical to ensure we achieve diversity and a range of perspectives and experience in our skilled workforce, as well as a more equitable and productive society more broadly.

Please do not hesitate to contact us if we can assist with any additional information.

Yours faithfully,

Professor Mark Hutchinson
President
Science & Technology Australia

Misha Schubert
Chief Executive Officer
Science & Technology Australia

SCIENCE & TECHNOLOGY AUSTRALIA / PO Box 259 CANBERRA ACT 2601 / 02 6257 2891 /
info@sta.org.au / www.scienceandtechnologyaustralia.org.au / ABN 71 626 822 845