

Connecting to Society and Doctoral Education for Public Good

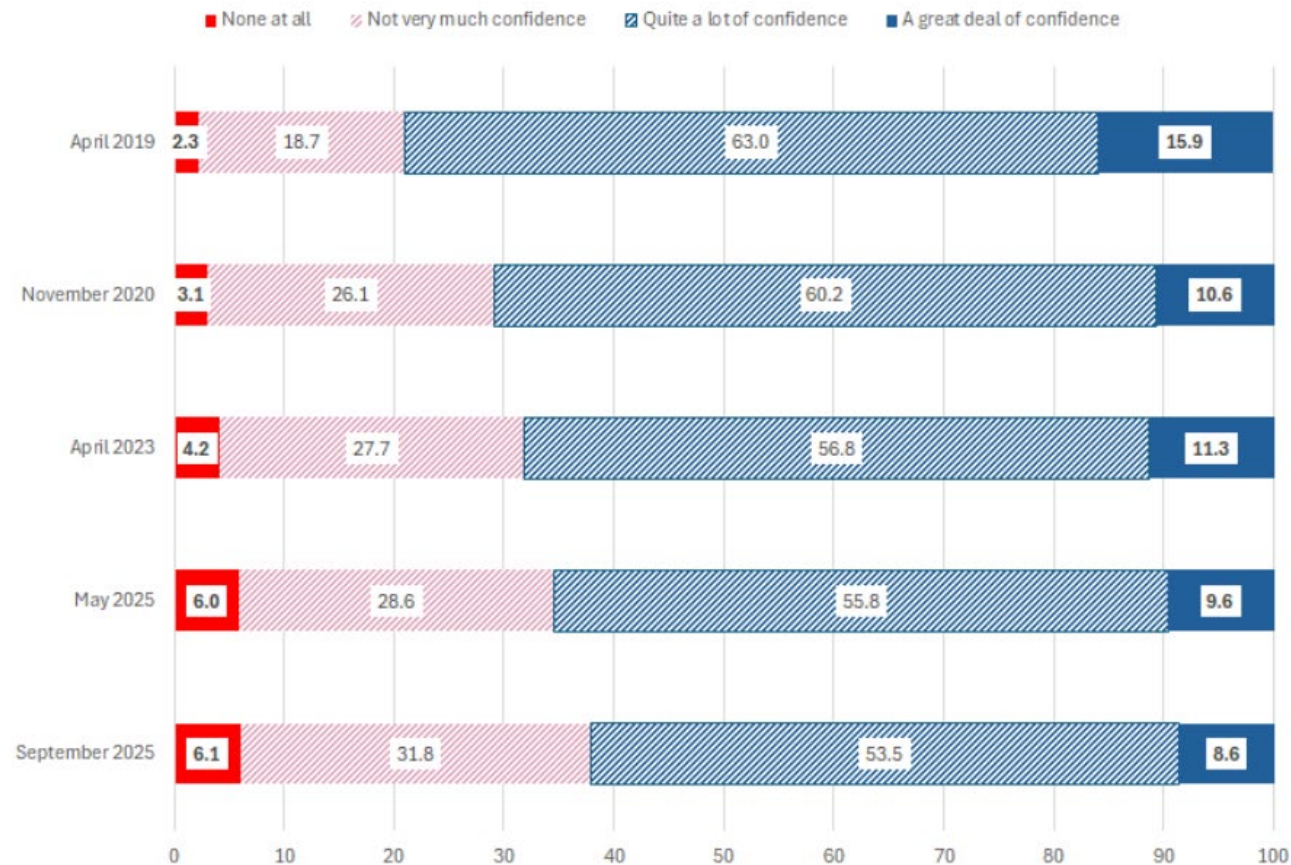
Louise Sharpe
Pro Vice-Chancellor (Researcher Training)



THE UNIVERSITY OF
SYDNEY



Figure 3 Confidence in universities – April 2019 to September/October 2025



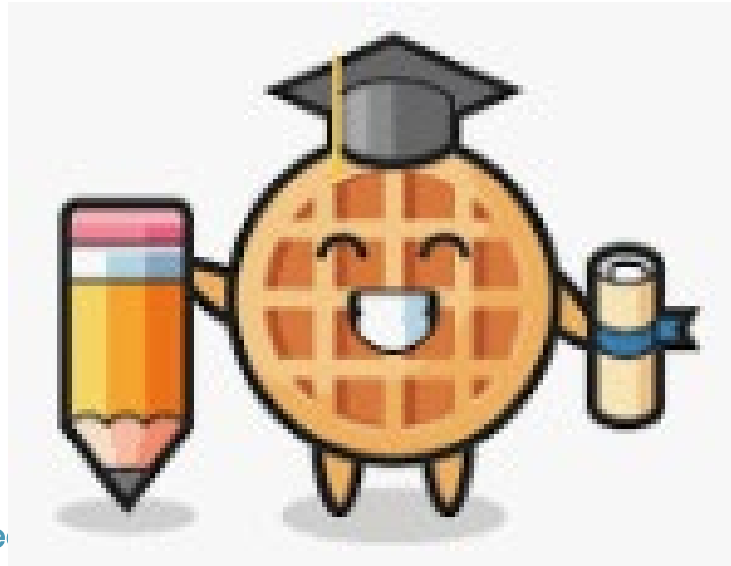
Biddle, N., Fischer, A., Gray, M., Mulgan, G., and Tourkey, R., (2026) Public perceptions of Higher Education and its role in strengthening (and weakening) democracy in Australia Australian Resilient Democracy Network Discussion Paper 15, Australian National University



Outside academia, people aren't well informed about PhD research – and that's a problem

Published: April 9, 2026 9.17pm AEST

Public View of PhD students



nature

PhD training is no longer fit for purpose – it needs reform now

If researchers are to meet society's expectations, their training and mentoring must escape the nineteenth century.

These days, there's barely a world leader who doesn't talk up science. Prime Minister Narendra Modi was the star turn at the annual Indian Science Congress, held this month in Nagpur, where he exhorted the nation's researchers to do the science needed to make India self-reliant. At last October's landmark Communist Party congress, Chinese Premier Xi Jinping set out his vision

“
In most places, a candidate's work is still evaluated using a

sometimes called a viva voce ('with living voice' in Latin), a nod to its nineteenth-century origins. And in many countries, candidates must publish in a journal before they get a PhD, something that critics say could fuel predatory publishing.

The system's strains have become more obvious because the number of people doing PhD training has been rising sharply. According to the 2022 book *Towards a Global Core Value System in Doctoral Education* – available as an open-access PDF; see go.nature.com/3zihyuk – the number of PhDs awarded in China more than doubled from 23,400 in 2004 to 55,011 in 2016 (and reached around 60,000 in 2019). India's numbers increased from 17,850 in 2004 to 25,095 in 2016; US figures climbed from 48,500 to 69,525 over the same period.

The doctorate updated

Too often, PhD training is still, at least conceptually, organized as it was after its development in and subsequent export from mid-nineteenth-century Germany. At that time, young scholars were attached to individual professors in a master-apprentice relationship, with the objective of safeguarding and advancing knowledge in individual disciplines.

WORLD VIEW

A personal take on events

R. HOWARD



Reform the PhD system or close it down

There are too many doctoral programmes, producing too many PhDs for the job market. Shut some and change the rest, says Mark C. Taylor.

The system of PhD education in the United States and many other countries is broken and unsustainable, and needs to be reconceived. In many fields, it creates only a cruel fantasy of future employment that promotes the self-interest of faculty members at the expense of students. The reality is that there are very few jobs for people who might have spent up to 12 years on their degrees.

Most doctoral-education programmes conform to a model defined in European universities during the Middle Ages, in which education is a process of cloning that trains students to do what their mentors do. The clones now vastly outnumber their mentors. The academic job market collapsed in the 1970s, yet universities have not adjusted their admissions policies, because they need graduate students to work in laboratories and as teaching assistants. But once those students finish their education, there are no academic jobs for them.

Universities face growing financial challenges. Most in the United States, for example, have not recovered from losses incurred on investments during the financial fiasco of 2008, and they probably never will. State and federal support is also collapsing, so institutions cannot afford to support as many programmes. There could be an upside to these unfortunate developments: growing competition for dwindling public and private resources might force universities to change their approach to PhD education, even if they do not want to.

There are two responsible courses of action: either radically reform doctoral programmes or shut them down.

The necessary changes are both curricular and institutional. One reason that many doctoral programmes do not adequately serve students

is that they are overly specialized, with curricula fragmented and of fields and subfields. Faculty members will resist, but financial reali-

reform. It is important to realize that problems will never be solved as long as each institution continues to act independently. The difficulties are systemic and must be addressed comprehensively and cooperatively. Prestige is measured both within and beyond institutions by the number and purported strength of a department's doctoral programmes, so, seeking competitive advantage and financial gain from alliances with the private sector, universities continue to create them. As is detailed on page 276, that has led most fields to produce too many PhDs for too long.

The solution is to eliminate programmes that are inadequate or redundant. The difficult decisions should be made by administrators, in consultation with faculty members at their own and other universities, as well as interested, informed and responsible representatives beyond the academic community who have a vested interest in effective

doctoral education. To facilitate change, universities should move away from excessive competition fuelled by pernicious rating systems, and develop structures and procedures that foster cooperation. This would enable them to share faculty members, students and resources, and to efficiently increase educational opportunities. Institutions wouldn't need a department in every field, and could outsource some subjects. Teleconferencing and the Internet mean that cooperation is no longer limited by physical proximity.

Consortia could contain a core faculty drawn from the home department, and a rotating group of faculty members from other institutions. This would reduce both the number of graduate programmes and the number of faculty members. Students would have access to more academic staff with more diverse expertise in a wider range

**MOST
DOCTORAL
PROGRAMMES
CONFORM TO A
MODEL DEFINED
IN THE
MIDDLE AGES.**

Australia has way more PhD graduates than academic jobs. Here's how to rethink doctoral degrees

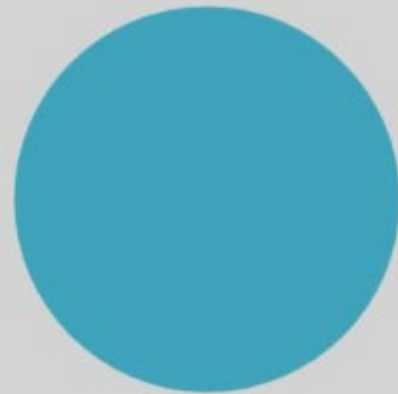
Published: May 15, 2023 6.08am AEST

Shutterstock



PhDs have an image problem.

What people think a PhD's skills are...



Subject matter expertise

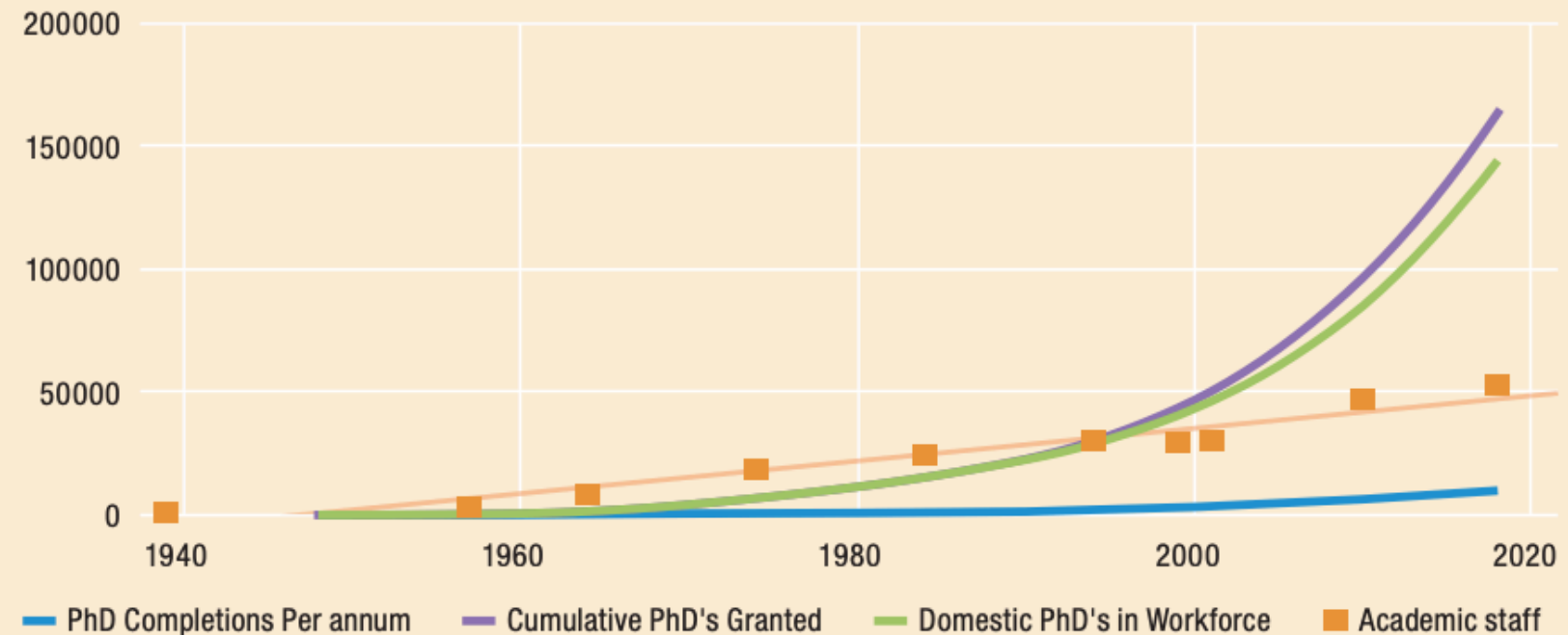
The reality of PhD skills...



- Project management
- Fast learning
- Communication
- Data & analysis
- Coffee-powered perseverance
- Deadline juggling
- Problem-solving
- Teaching & mentoring
- Resilience
- Last-minute Googling

PhD Careers in Australia

Figure 1 Trends in PhD completions and academic workforce in Australia 1948–2018 (Per annum and cumulative)⁶



Cumulative estimate adjusted for overseas PhD students moving back to their home country after graduating, and for life expectation

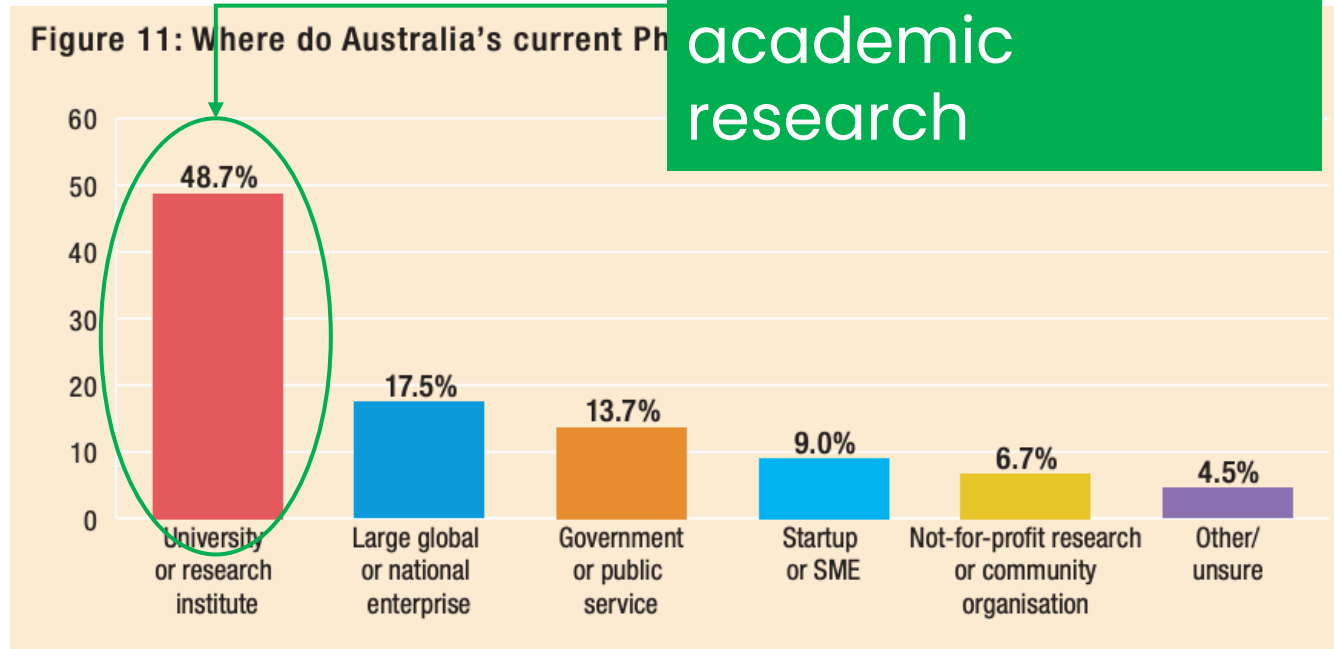
https://amsi.org.au/wp-content/uploads/2019/04/advancing_australias_knowledge_economy.pdf

The Assumption

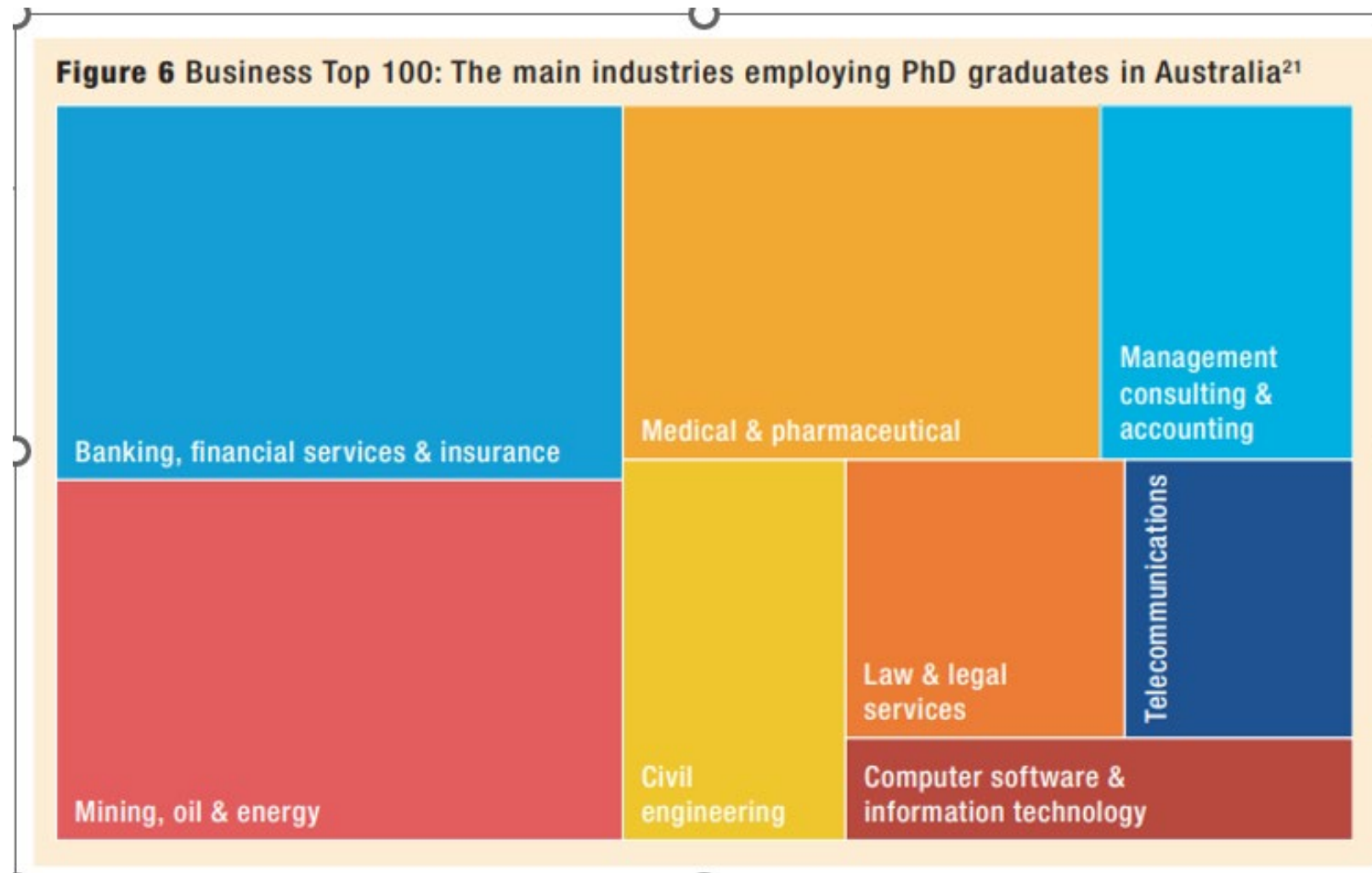


PhD Careers in Australia

< 50% intend a career in academic research



https://amsi.org.au/wp-content/uploads/2019/04/advancing_australias_knowledge_economy.pdf



From: McCarthy & Wienk. Advancing Australia's knowledge Economy.

How can we get back on track in public (and even other academic) opinion?

We need research capability more than ever

Google AI Overviews put people at risk of harm with misleading health advice

Exclusive: Inaccurate information presented in summaries, Guardian investigation finds

Science & technology | Bad news

Disinformation is on the rise. How does it work?

Understanding it will lead to better ways to fight it



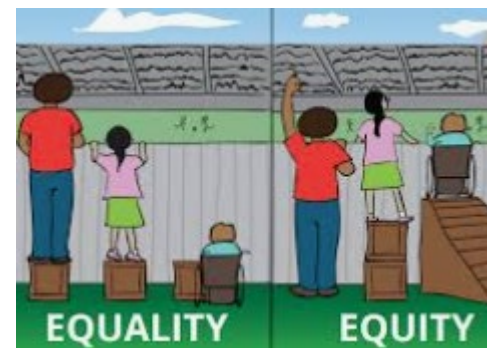
"Then I see the disinfectant, where I see it knocks it out in a minute. Is there a way we can do something like that? By injection inside or almost a cleaning, as you see it gets into the lungs and it does a tremendous number."

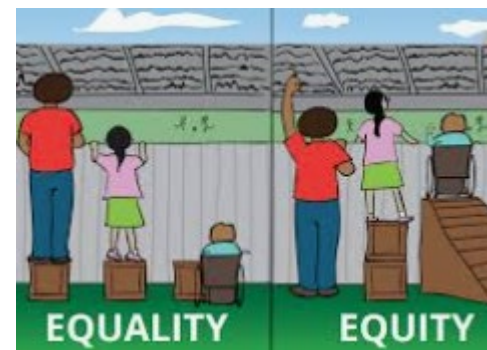
Pres. Donald Trump
April 23, 2020

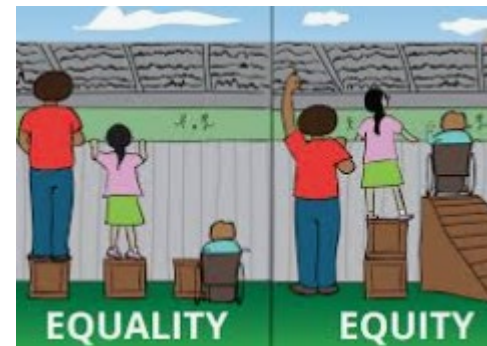
FOX 47 **YES!**
WSYM TV

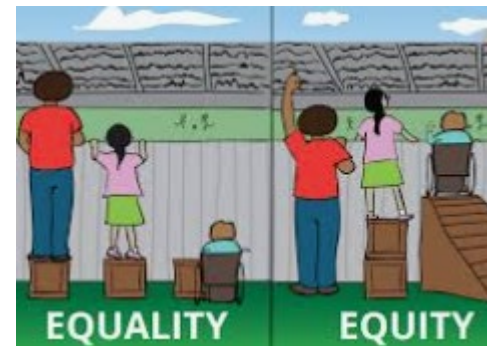




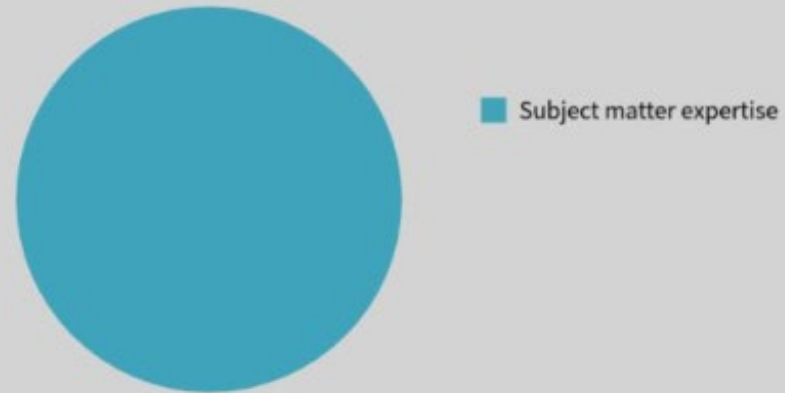




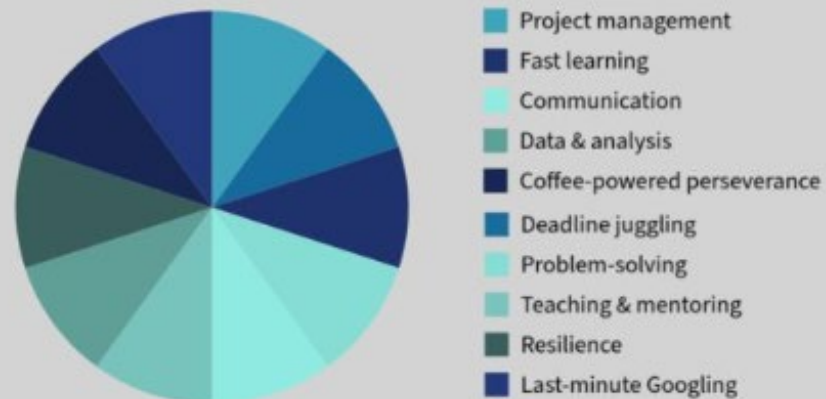




What people think a PhD's skills are...



The reality of PhD skills...



HDR CAPABILITY FRAMEWORK

LEADING YOURSELF WITH OTHERS

Develop leadership, collaboration, and wellbeing as you navigate your research degree and beyond.



Stay Well and Resilient



Be Inclusive and Culturally Competent



Collaborate and Connect



Show Leadership

LEADING YOUR RESEARCH

Become a confident and capable researcher, equipped with the tools to navigate your research degree journey.



Master Research Methods and Practices



Manage your Project, Candidature and Supervision



Stay Ethical and Safe



Boost your Data and Digital Literacy



Academic Writing with Impact



Think Creatively and Critically



Work in and across Disciplines

LEADING WITH IMPACT

Create research that makes a real-world impact and authentically connect with audiences of diverse backgrounds, capabilities and interests.



Authentic Research Communication



Build Industry Connections



Innovate and Translate Research



Be a Global Citizen



Teach and Inspire



Seek Research Funding Opportunities

LEADING YOUR CAREER

Grow your career through continuous research and professional development and proactive career planning



Continuous Skill Development



Plan your Career



Craft your Professional Identity



FRAMEWORK

Levels of Industry Engagement in HDR Programs

Thematic analysis of 35 detailed written responses about the types of industry engagement within institutions



Levels of Industry Engagement



Bey Alivand

PhD Candidate · Business Information Systems

UNIVERSITY OF SYDNEY · MOTUS LAB

Developing AI Digital Humans for People Living with Acquired Brain Injury Through Co-Design



The Challenge

More than **700,000 Australians** live with acquired brain injury. Everyday life, communication and social interaction can be overwhelming.



The Innovation

AI-powered digital humans that adapt communication, simplify information, personalise support and let users engage at their own pace.



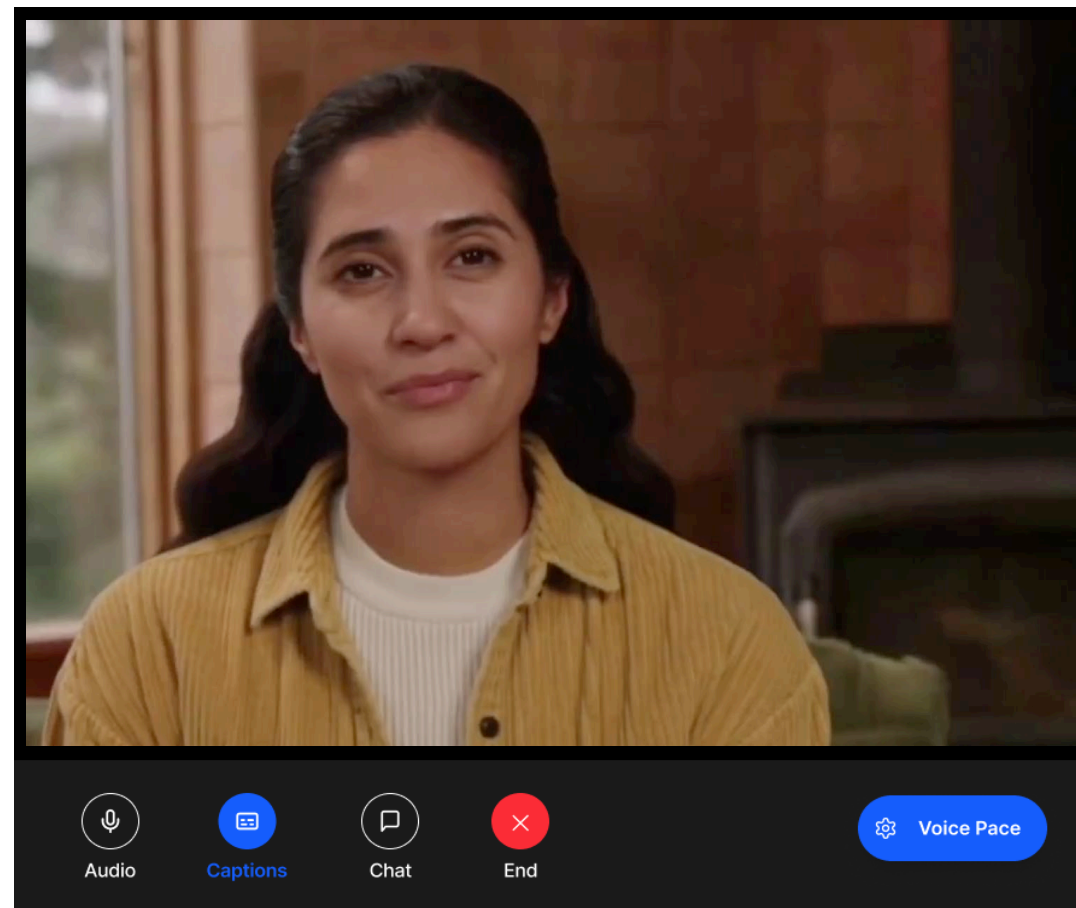
The Co-Design and Communities

Design with them not just for them. Guided by lived experience, community partnership and participatory design.



Societal Impact

Supports independence, confidence and offers accessible interaction. Developing cutting-edge AI for real world problem; for an impact.



Beyond the Ivory Tower : Multiple Pathways

- ❖ Commercialisation & Economic Innovation
- ❖ Scalability to Healthcare and Community Support (e.g. palliative care)
- ❖ Industry–University Partnership



Matt Boustred and Matt Crott.

Start-up raises \$784,000 for baby resuscitation system

18 August 2021

Biomedical start-up is now valued at almost \$3.8 million



Australian Government

Department of Health, Disability and Ageing

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Helping newborn babies to start breathing

One in ten newborns need help to start breathing at birth. Australian company ResusRight is developing a world-first portable resuscitation monitor. The Nemo monitor shows paramedics and birth attendants how much air to give the baby, helping to avoid injury or death.

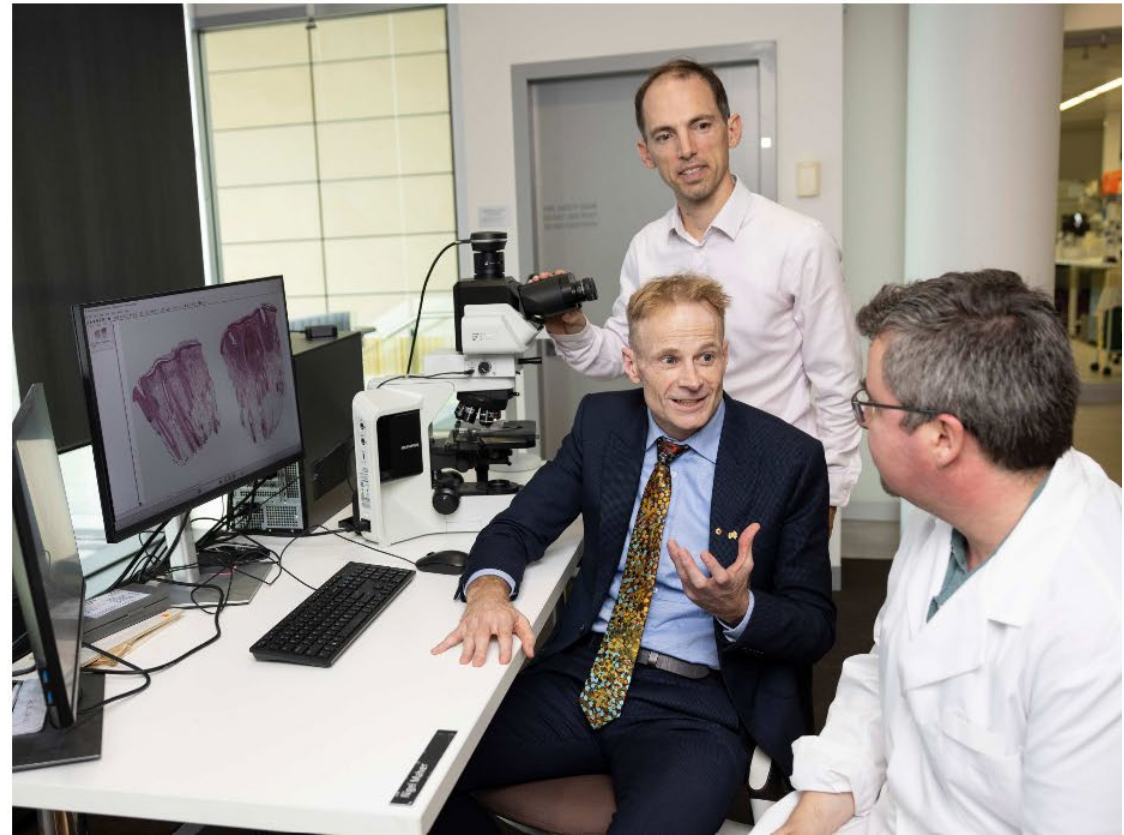


ResusRight
FOR SAFER BIRTH

27 February 2025

Mentor and Me: Nigel Maher and Richard Scolyer

Hear from PhD candidate Nigel Maher and his supervisor Professor Richard Scolyer as the two discuss melanoma, AI, and doing research with impact.



https://vimeo.com/1011236610?&login=true#__=_

We need to engage more



We need to engage more



We need to engage more



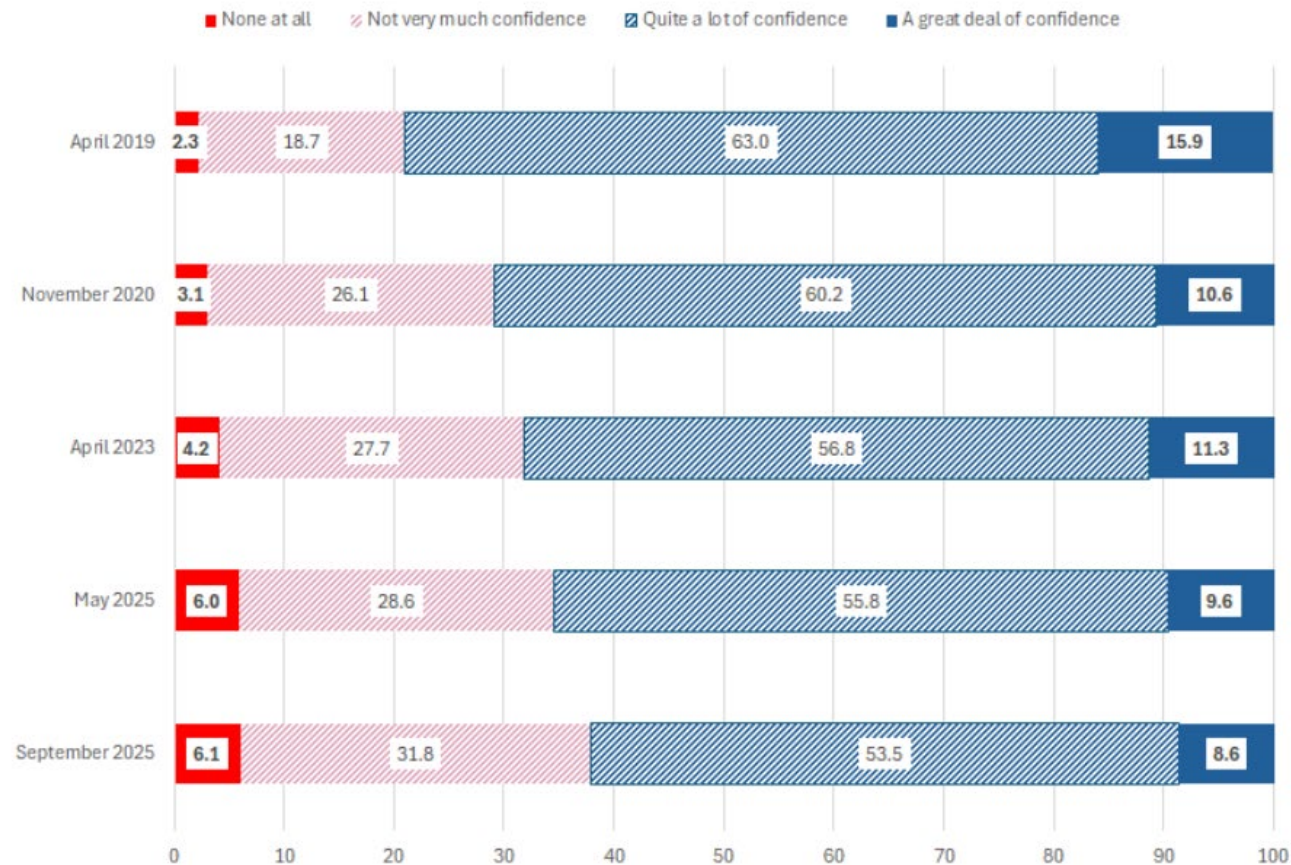
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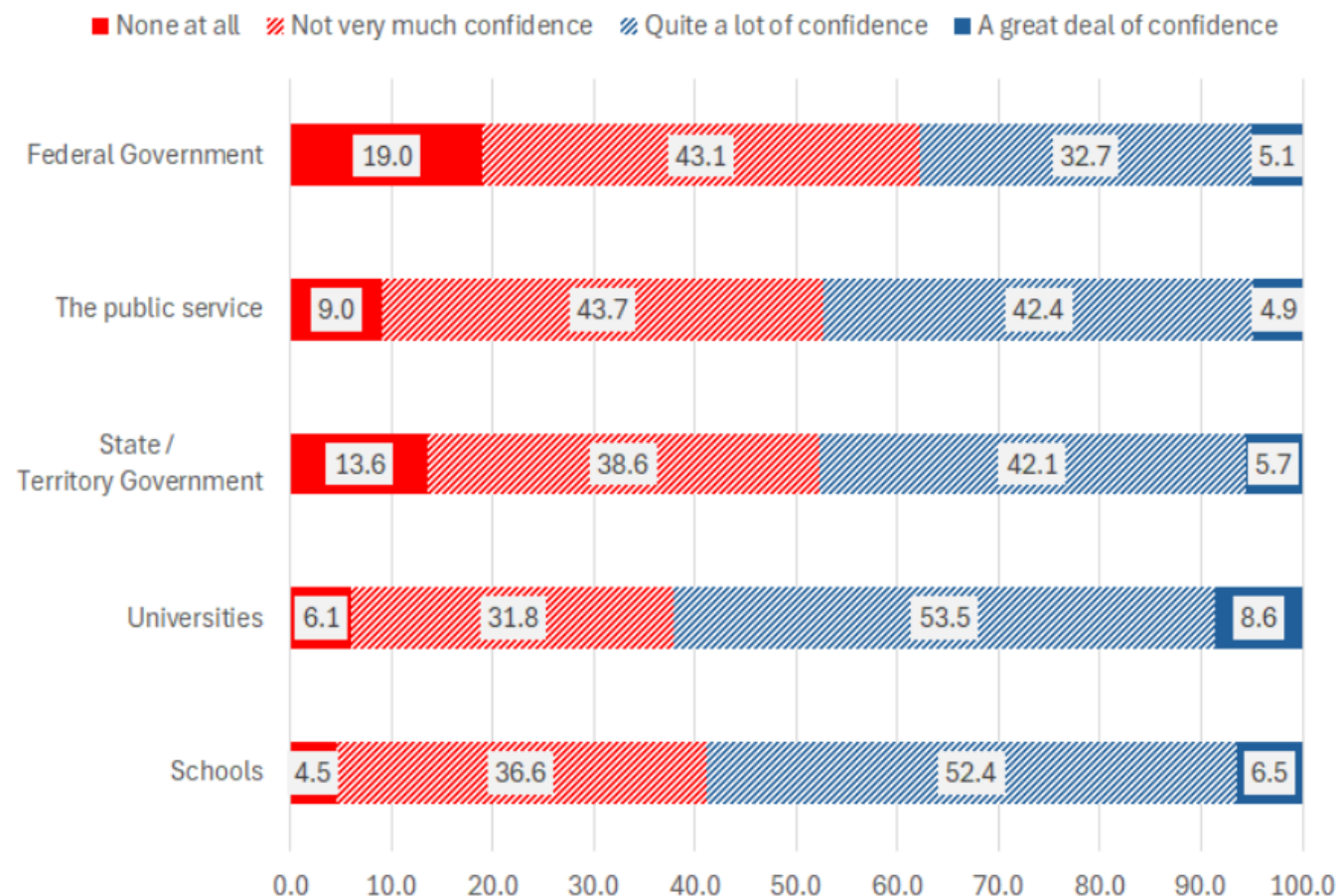


Figure 3 Confidence in universities – April 2019 to September/October 2025



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Figure 2 Confidence in institutions – September/October 2025



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Questions? Comments?

