

Integration of Research, Teaching and Learning: Issues and Questions for Australia

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Issues and Questions

- Part 1: Articulating assumptions
- Part 2: National developments and policy issues
- Part 3: The student voice on linking learning, teaching and research
- Next steps: Discussion questions



The Teaching-Research Nexus

A guide for academics and policy-makers
in higher education

ABOUT THIS
PROJECT

WHAT IS THE
TRN?

**BENEFITS FOR
STUDENTS**

IN THE
CURRICULUM

TRN IN POLICY

TRN & ACADEMIC
CAREERS

EXAMPLES OF
TRN PRACTICE

Benefits for Students

Benefits for Students



It is argued in this section that disciplinary research can inform and enhance the teaching and learning environment, benefiting students during their degree studies and afterwards, when they move into the world of employment and (it is hoped) lifelong learning. There are four key categories of benefit:

Benefit 1: Deepen students' understanding of the knowledge bases of disciplines and professions, including their research methods and contemporary research challenges and issues

Benefit 2: Build students' higher-order intellectual capabilities and enhance their skills for employment and lifelong learning

Benefit 3: Develop students' capacity to conduct research and enquiry

Benefit 4: Enhance students' engagement and develop their capacity for independent learning

Source: www.trnexus.edu.au

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Assumption set 1: benefits to students

- **Benefit 1:** Deepen students' understanding of the knowledge bases of disciplines and professions, including their research methods and contemporary research challenges and issues
- **Benefit 2:** Build students' higher-order intellectual capabilities and enhance their skills for employment and lifelong learning
- **Benefit 3:** Develop students' capacity to conduct research and enquiry
- **Benefit 4:** Enhance students' engagement and develop their capacity for independent learning

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Benefit 2:
Build students' higher-order intellectual capabilities and enhance their skills for employment and lifelong learning



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Assumption set 2: benefits to staff and universities

- Including
 - Marketing advantages
 - Attracting Honours and PhD students
 - Staff opportunities to learn from students' inquiry
 - Improved staff promotion prospects if rewarded through promotion policy

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TRN in Policy » Benefits to Institutions

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Benefits to Institutions

Policy-maker interviewees in our study identified several ways in which they believed closer connections between teaching and research could be beneficial for their universities, for staff and for students.

Benefits to the university

From the perspective of Australian university policy-makers, benefits of the TRN to the institution may include:

- enhancement of the quality of teaching resulting from closer links between teaching and research;
- expanded options for funded grant opportunities. Academic staff are no longer restricted to Australian Research Council (ARC) or National Health and Medical Research Council (NHMRC) grants for they may also be eligible for Australian Learning and Teaching Council (ALTC) grants if they are able to emphasise the benefits of teaching-research linkages for student learning;
- raising of the status of learning and teaching in the university as a result of closer ties between research and teaching;
- marketing advantages – some policy-makers believed they would be more likely to capture the 'high achieving matriculants' if they were able to market their undergraduate programs/degrees as having a strong research base;
- attracting Honours and PhD students as a result of their connections with research in the undergraduate years.

The following statement captures the views of many policy-maker interviewees when asked whether they felt there were benefits to be gained from forging closer links between research and teaching in their universities:

17 TRL dimensions in institutional websites and web-based policy documents

- A Teaching informed by research on good practice in teaching and learning**
- B Scholarship of teaching and learning**
- C General high level statement interpreting TRLs e.g. alignment, integration, informs, interaction, enhancement, dynamically linked, complementarity**
- D Teaching and learning informed and influenced by research**
- E Research intensive culture permeates and is integrated with teaching**
- F TRLs assist with knowledge transfer to external communities**
- G Research-led teaching influences curriculum design and teaching**
- H Research-based learning is integrated into teaching programs**
- I Students engage with research environment and researchers**
- J Integration of research and consultancy findings into teaching**
- K Linking of research practices and the learning inquiry process**
- L Teaching and research support each other**
- M Embed research-enhanced teaching**
- N Incorporation of research methodologies in teaching**
- O Teaching informs research**
- P Learners learn by doing research**
- Q Research intensive learning and teaching**

NOTE: These dimensions use terminology derived directly from websites and online policy documents.

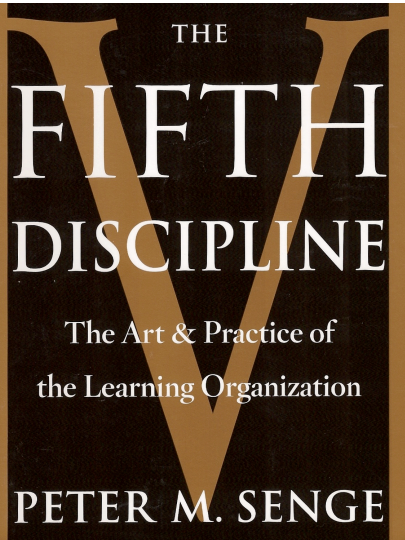
Source: trnexus.edu.au/index.php?page=national-policy

TRLs in Australian Universities: Key Dimensions in Policy Making

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37			
A				X				X		X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X			
B		X				X	X		X	X	X	X				X	X	X	X		X	X	X		X	X	X	X	X	X		X					X	X		
C					X	X	X	X	X		X						X						X	X	X		X	X		X			X	X	X	X	X			
D												X	X	X	X	X							X	X	X	X	X	X	X	X	X	X	X	X	X	X				
E																											X					X	X	X		X	X			
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G																			X	X	X		X									X	X	X		X	X	X		
H																											X						X	X	X		X	X	X	
I																											X		X	X							X			
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L																																		X				X		
M																																	X	X		X				
N																																							X	
O																																		X						
P																																						X		
Q																																						X		

GO8: GROUP OF 8 (Research-intensive)
 IRU: INNOVATIVE RESEARCH UNIs

NGU: NEW GEN UNIs
 ATN: AUST'N TECH. NETWORK



Assumption set 3: institutional readiness

Forging links between learning, teaching and undergraduate research, from the first year, assumes **institutional willingness and readiness to engage in inquiry-oriented policy and practice**

see Senge, 1990,
*The Fifth Discipline:
The art and practice of the learning organisation*

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Assumption set 4: terminology is problematic

The terms “research” and “inquiry” are problematic and should be problematised within disciplinary and institutional contexts

Issues and Questions

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Review of Australian Higher Education

Recommendation 2

That the Australian Government set a national target of at least 40 per cent of 25- to 34-year-olds having attained a qualification at bachelor level or above by 2020. (revised to 2025)

Recommendation 4

That the Australian Government set a national target that, by 2020, 20 per cent of higher education enrolments at undergraduate level are people from low socio-economic status backgrounds.

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Venturing means enterprise and a major, **bold** and **perhaps risky** undertaking. It also connotes being **forward looking** and being **prepared to seize opportunity**. This is the **innovative spirit we need to nurture in all Australians**. An innovative Australia is a country that is enterprising and venturesome.

Cutler, 2008

Source: <http://www.innovation.gov.au/innovationreview/Pages/home.aspx>

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INNOVATION INNOVATION

Powering Ideas
An Innovation Agenda
for the 21st Century
Executive Summary



Tough times demand creative solutions. *Powering Ideas* will help us find those solutions. It will help us transform challenges into opportunities, risks into rewards.

This is a ten-year reform agenda to make Australia more productive and more competitive. Increasing our capacity to create new knowledge and find new ways of doing business is the key to building a modern economy based on advanced skills and technologies. It is the key to success in this, the global century.

Innovation is not an abstraction. Nor is it an end itself. It is how we make a better Australia, and contribute to making a better world — a prosperous, fair and decent world, in which everyone has the chance of a fulfilling life.

Senator Kim Carr
Minister for Innovation, Industry, Science and Research

A handwritten signature in black ink, appearing to read 'Kim Carr'.

FOREWORD

Senator Kim Carr

Vision:

- A ten-year reform agenda to make Australia more productive and more competitive.

Part of the strategy:

- Increasing our capacity to create new knowledge and find new ways of doing business is the key to building a modern economy based on advanced skills and technologies.

Source: *Powering Ideas: An innovation agenda for the 21st century*

Available online: <http://minister.innovation.gov.au/Carr/Pages/SETTINGTHEINNOVATIONAGENDATO2020.asp>

Senator Kim Carr

Problem:

- In the last eight years, Australia has slipped from 5th to 18th in the World Economic Forum's Global Competitiveness Index.

Part of the solution:

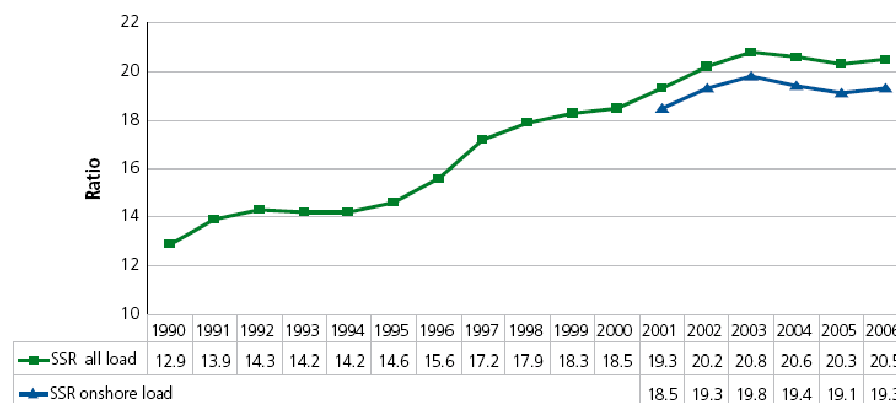
- Universities and research organisations attract the best and brightest minds to conduct world-class research, fuelling the innovation system with new knowledge and ideas.

Source: *Powering Ideas: An innovation agenda for the 21st century*
 Available online: <http://minister.innovation.gov.au/Carr/Pages/SETTINGTHEINNOVATIONAGENDATO2020.asp>

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Figure 19: Universities Australia student-to-teacher ratio, 1990 to 2006



Note: Data is for Universities Australia member universities only.

Source: *Universities Australia 2008a, 2006 Student to Teacher Ratio For Academic Staff with Teaching function, October*. UA cited sources are *DEEWR Higher Education Student and Staff Statistics 1990 to 2000* and *DEST Unit Record Files 2001 – 2006*; *Bond University Management Report August 2007 (data for 2001 to 2006 only)*.

Source: Bradley et al., 2008, p.72

Big spending to lure research students

Joanna Mather

Universities are ploughing tens of millions of dollars into scholarships to attract international students into postgraduate research degrees here, in part to compensate for static domestic enrolments.

Research shows 29 universities spent \$79 million on scholarships and stipends for commencing postgraduate research students from abroad in 2008. It's the first time a figure has been put on spending in the area nationwide, according to Tracy McCabe, chairman of the Australian Universities International Directors Forum which commissioned the study.

The quantum was more than expected, she said. "Universities have clearly made the decision to provide funding to

recruit these students and to ensure they are the best students we can get our hands on," Ms McCabe said.

Scholarships are important if Australia is to compete with universities in the United States and United Kingdom for the most talented students.

But there is also a worrying trend in terms of the production of highly skilled home-grown knowledge and technology workers.

Between 2004 and 2008 — the years of chronic skills shortages in Australia — enrolments in higher research degrees by Australian students were flat, said Hong Kong-based consultant Alan Olsen, who carried out the study on behalf of the directors forum. By 2008, 22 per cent of postgraduate research students in Australia were from overseas, he said.

Data from the Federation of Australian Scientific and Technological Societies show the number of domestic students entering higher research degrees peaked at just under 7000 in 1999 and dropped to just below 6000 in 2006.

There is competition for the best minds.

MAX KING, MONASH UNIVERSITY

FASTS executive director Bradley Smith said a decade of strong jobs growth and high salaries in industry had carved a hole in the number of top-quality domestic students opting to do a PhD or research master's degree. "There is anecdotal evidence to suggest that the best local students who might

previously have gone on to do a PhD had been moving straight into the labour market," he said.

A Group of Eight discussion paper highlights that 72.6 per cent of research graduates enter non-university occupations.

That's good for individual employers, but there are long-term implications for the skills level of the workforce more broadly, not to mention the number of PhD-qualified people available to teach at universities.

Monash University pro vice-chancellor of research and research training, Max King, said PhD-qualified workers were at a premium in the global knowledge economy — and would become more so. "There is a clear trend that the whole world is moving further towards the knowledge economy,

and there is real competition for the very best minds," he said. "It's just going to get more and more intense over the next decade."

Professor King said providing scholarships to attract international talent was important, but that Australia also needed to grow its domestic enrolments.

He said the fact that the economic downturn had made study a more appealing option and the federal government's decision to increase the stipend attached to commonwealth-funded postgraduate scholarships for Australian students could help.

"The stipend is going up next year as announced in the budget to \$22,500," he said. "The efforts of the government are, I think, helping. Certainly at Monash we've seen an increase."

Source: Financial Review 26.10.09

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Qualifications Framework

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PROJECTS
OVERSEAS
PUBLICATIONS
FAQS


- ▶ For Students
- ▶ For Educational Providers
- ▶ For Employers
- ▶ For Those Overseas



The Australian Qualifications Framework (AQF) is a quality assured national framework of qualifications in the school, vocational education and training (VET), and higher education sectors in Australia.

The Framework links together all these qualifications and is a highly visible, quality-assured national system of educational recognition which promotes lifelong learning and a seamless and diverse education and training system.

AQF National Register



AQF Handbook

The AQF Handbook provides a detailed guide for the implementation of the Australian Qualifications Framework. It should be read in conjunction with documents issued by accrediting bodies.

[Learn More](#) · [View the Handbook](#)

Source: www.aqf.edu.au

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		Disagree	Uncertain	Agree
I am finding my course intellectually stimulating	1994	12	25	63
	1999	10	26	63
	2004	6	19	75*

Source: Krause, K., Hartley, R., James, R., & McInnis, C. (2005). *The first year experience in Australian universities: Findings from a decade of national studies*. Canberra: Australian Department of Education, Science and Training.

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		Disagree	Uncertain	Agree
I am clear about the reason I came to university	1994	10	16	74
	1999	12	17	72*
	2004	4	11	85**

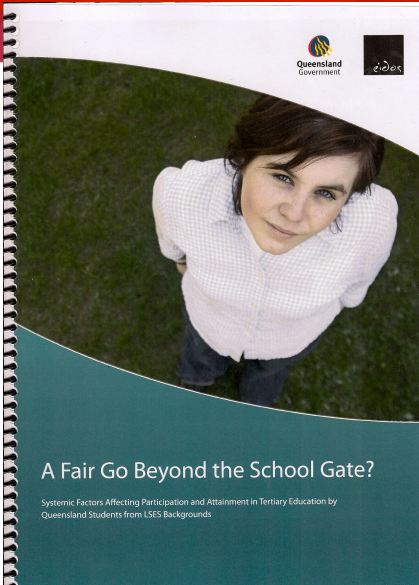
Source: Krause, K., Hartley, R., James, R., & McInnis, C. (2005). *The first year experience in Australian universities: Findings from a decade of national studies*. Canberra: Australian Department of Education, Science and Training.

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Student perspectives

- *I wasn't prepared to be "culture shocked"*
- *... the information given to us in high school was nothing like it should have been. Uni reps should visit all year 11 and 12 over those last 2 years. I believe more people would go to uni if there was more info*
- *Lack of challenge within course*



Queensland Government

A Fair Go Beyond the School Gate?

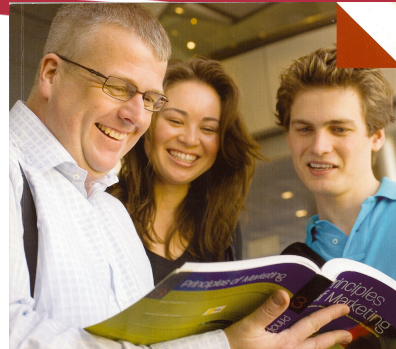
Systemic Factors Affecting Participation and Attainment in Tertiary Education by Queensland Students from LSES Backgrounds

Source: Krause, K., Vick, M., Boon, H., Bland, D. (forthcoming). *A fair go beyond the school gate? Systemic factors affecting participation and attainment in tertiary education by Queensland students from LSES backgrounds*. Brisbane: Queensland Department of Education and Training.

What did Australian students say about engaging in research experiences?

Only 2.2% of first year students and 5.9% of later year students reported working on a research project with a staff member outside of coursework requirements.

These numbers are low and pose particular challenges for universities.



Engaging Students for Success

Australasian Student Engagement Report
Australasian Survey of Student Engagement

AUSSE

ACER

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The peculiar challenge colleges face is how to construct a foundation of knowledge and understanding that will help their students adapt and respond effectively to whatever international problems and opportunities may confront them in their later lives.

More than most of the aims that colleges pursue, this task is novel and remains clouded by uncertainty and confusion.
[Bok, 2006, p.76]

OUR UNDERACHIEVING COLLEGES



A CANDID LOOK AT HOW MUCH
STUDENTS LEARN AND
WHY THEY SHOULD BE LEARNING MORE

DEREK BOK

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Discussion Starter Questions

- You may wish to start by briefly exploring your group's understanding of the terms "undergraduate research" and "inquiry".
- What are the consequences for Australia's future of not engaging undergraduates with research and inquiry from the first year, in all universities?
- What are the strategic implications of encouraging a greater commitment to undergraduate research activities across the sector?

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Thank you