

Creating sustainable programs for WIL in Science

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Today's webinar

- Context for WIL in Science: motivation, current state
- Leadership for WIL in Science project: overview of initial steps
- Successful WIL in Science project: strategy and progress
- WIL in Science research:
 - Perceptions of WIL in Science practitioners
 - Perceptions of science students

The problem in science...

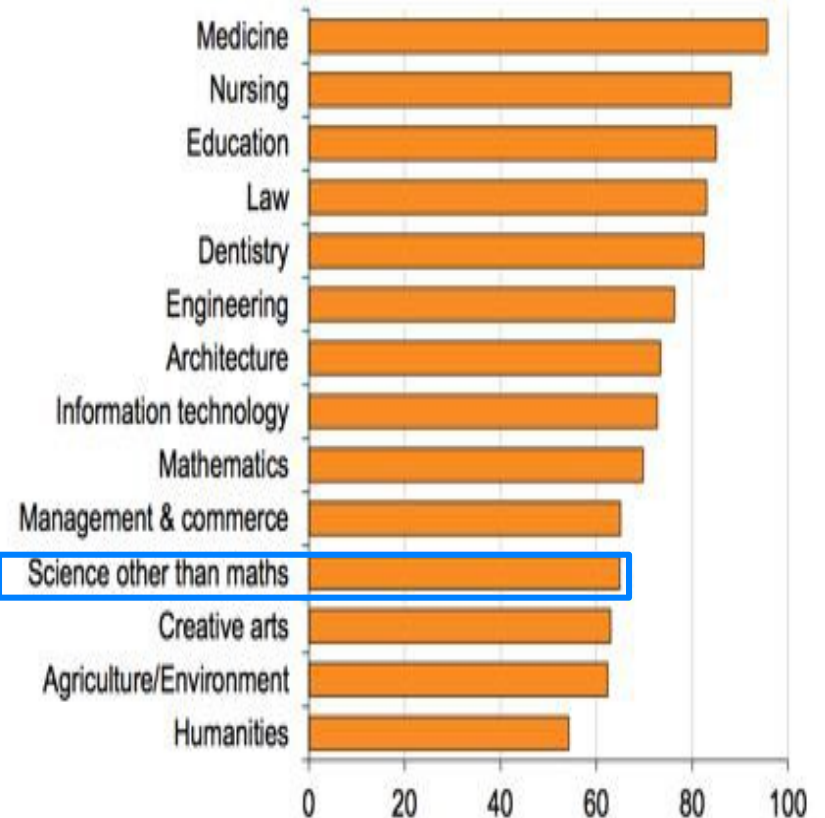
FINANCIAL REVIEW

NEWS ▾ BUSINESS ▾ MARKETS ▾ STREET TALK ▾ REAL ESTATE ▾ OPINION ▾ TECHNOLOGY ▾ PERSONAL FINANCE ▾ LEADERSHIP ▾ LIFESTYLE ▾ ALL ▾

Grattan Institute's Andrew Norton says science graduates struggle more than others to find their first job



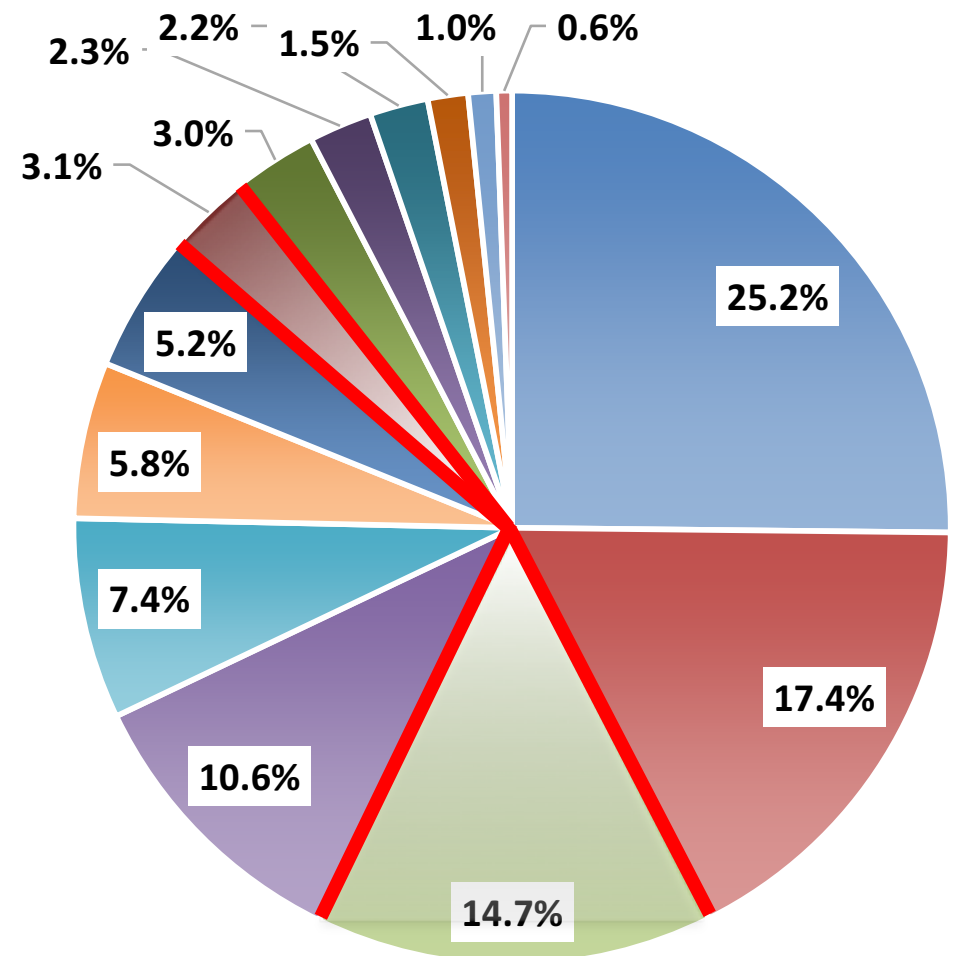
A bachelor-level science degree is not the best path to a graduate job, says the Grattan Institute's Andrew Norton.
Josh Robenstone



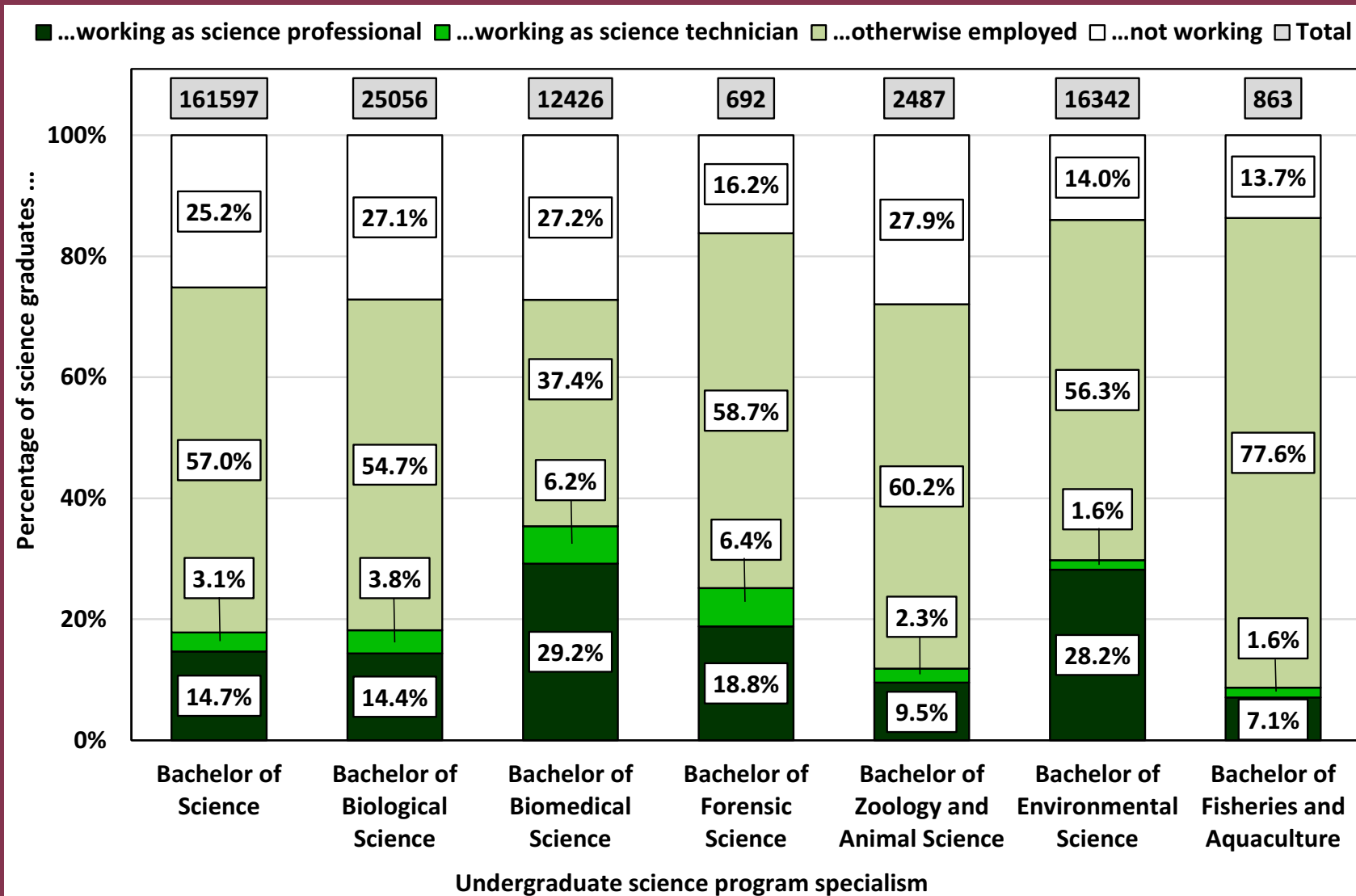
Science graduates have diverse careers

Almost **50%** of working B.Sc. graduates are not employed directly in Science.

<i>Directly in Science</i>	28%	
<i>Not working</i>	25%	
<i>'General'</i>	17%	} ~48%
<i>Management</i>	11%	
<i>IT</i>	7%	
<i>Education</i>	6%	
<i>Marketing</i>	5%	
<i>Finance</i>	3%	



Different degrees link to different outcomes



78%

↑

Out-of-field

38%

Not all scientists wear lab coats now...

Careers that understand science	Careers that use science	Scientists who create science
• Regulators • Science related business • Policy development • Teaching	• Health • Engineering • Information technology • Environmental Management • Architecture	• Pure research • Applied research



...and jobs are changing rapidly

THE CONVERSATION

Academic rigour, journalistic flair

Arts + Culture Business + Economy Education Environment + Energy Health + Medicine Politics + Society **Science + Technology**



Are you ready for the jobs of the future?

August 2, 2016 2.28pm AEST

New jobs, such as big data doctor, might be just around the corner. Shutterstock

What helps employability?

Employability means that students acquire the **skills, understandings and personal attributes** that make them more likely to secure employment and be successful in their chosen occupations to the benefit of themselves, the workforce, the community and the economy

Mantz Yorke 2009

Work-integrated Learning (WIL) is aimed at improving the employability of graduates by giving them valuable **practical experience** which is directly related to courses being studied at university. WIL also improves the **transition** from university to work and **productivity outcomes** for the employer and the economy.

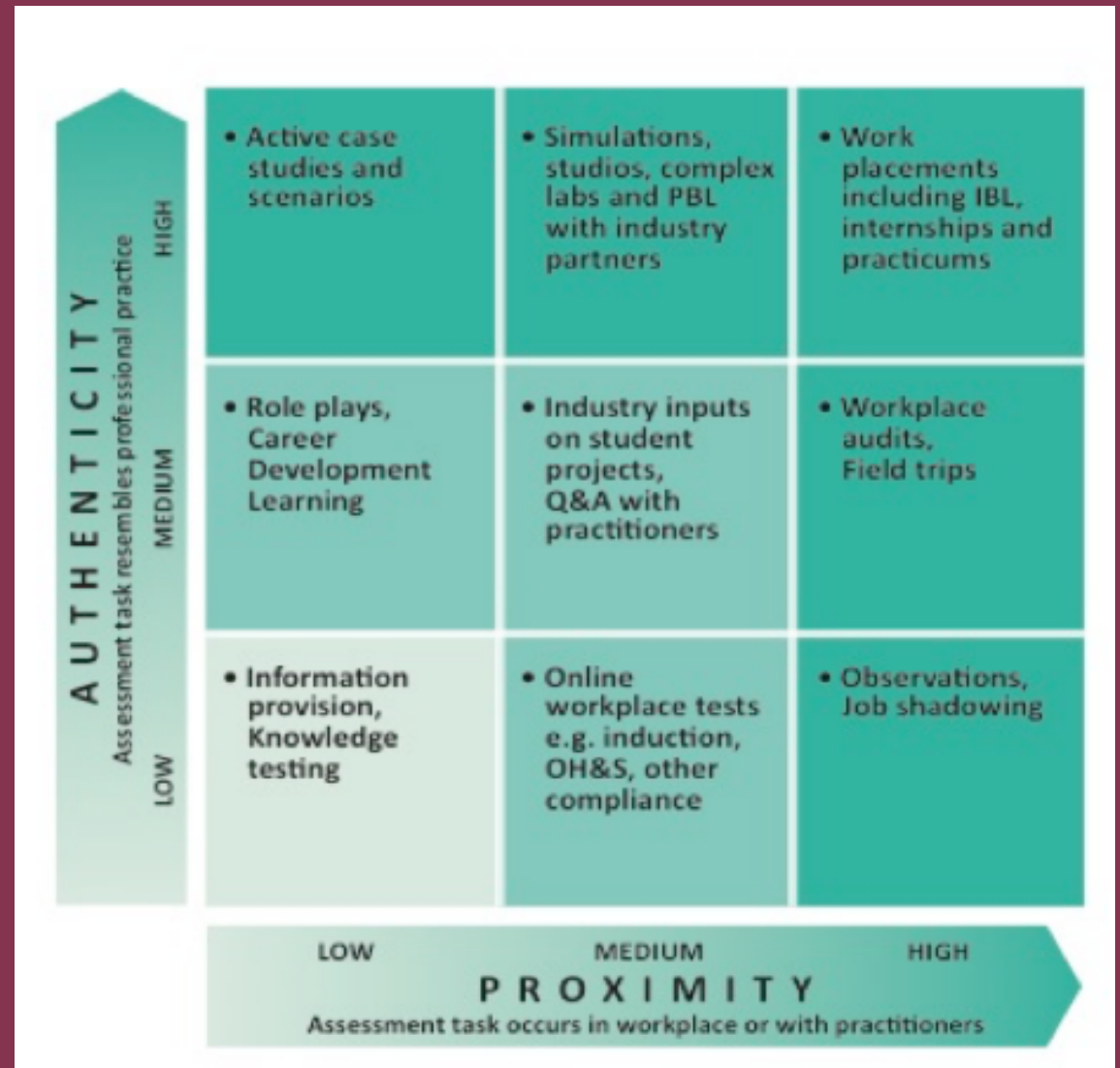
National Strategy on Work Integrated Learning in University Education, 2015

WIL can be diverse...

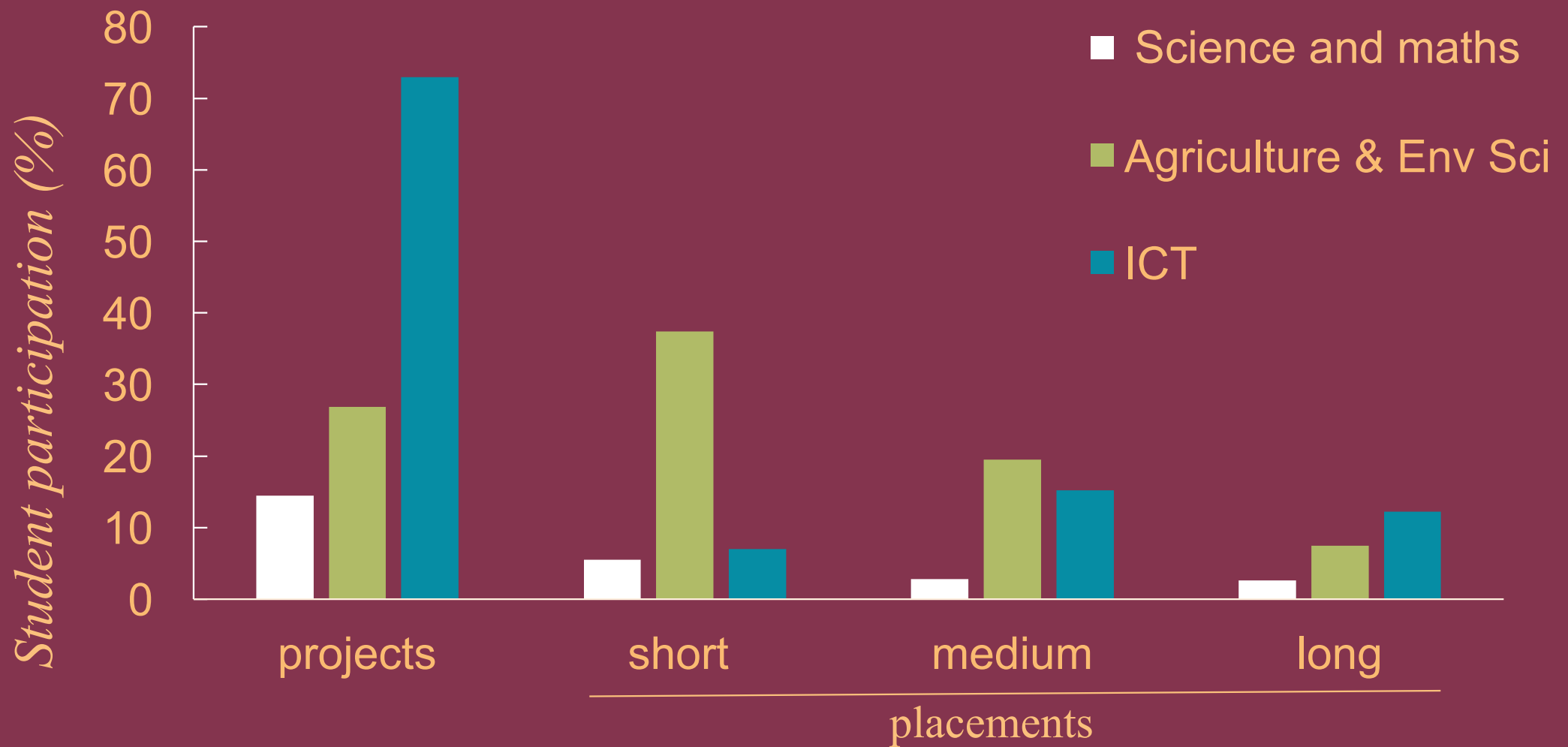
See:

Kaider, Hains-Wesson & Young, (2015) in <http://acen.edu.au/resources/enhancing-courses-for-employability/>

Oliver B (2015) 6:56, J. Teach. Learn. Graduate Employability



... but science students have less access to explicit WIL

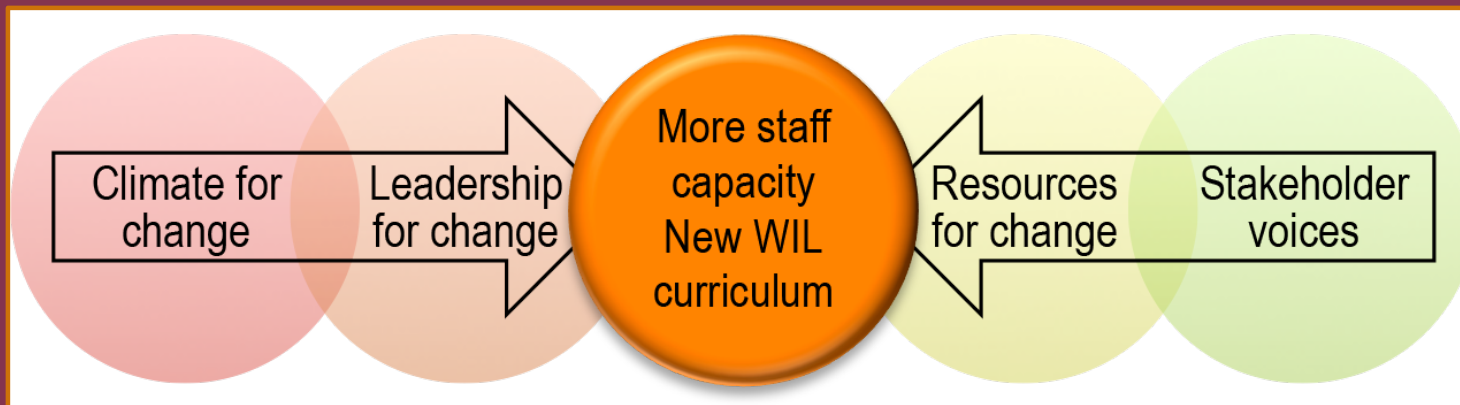


Edwards et al, 2015

How can we grow WIL in Science?

Leadership for WIL (2015-2016)

Successful WIL (2016-2018)



<http://www.acds-tlcc.edu.au/work-integrated-learning/>

Understanding the climate for change: national



PROFESSIONAL JOBS SUMMITS RANKINGS STU

Graduate employability: top universities in Australia ranked by employers

For graduate employability have been chosen by local recruiters.



Choose a university or higher education institution that is best for you.

Compare undergraduate and postgraduate coursework student experience and graduate employment.

Help me get started



National WIL Strategy

by acenadmin | Nov 10, 2015 | Resource |

Home Study Areas Institutions My Shortlist

Home About this site Graduate Employment

About this site

Student Experience

Graduate Employment

Graduate Satisfaction

Employer Satisfaction

For institutions

For students

Graduate Employment

Information on the QILT website about graduate employment outcomes is sourced from the Graduate Destinations Survey (GDS) for 2014 and 2015 and the Graduate Outcomes Survey (GOS) for 2016.

The GOS is funded by the Australian Government Department of Education and Training and in 2016 was administered by the Social Research Centre. The GDS was a forerunner survey to the GOS which up to 2015 was administered by Graduate Careers Australia.

Both the GDS and the GOS have been completed by graduates of Australian higher education institutions approximately four months

Latest Results

[2016 GOS National R](#)
(1.15MB)

[2016 GOS National R](#)
(Accessible)
(DOCX 333.09kB)

[2016 GOS-L National](#)
(PDF 529.22kB)

[2016 GOS-L National](#)
(Accessible)



Australia's future depends on strong partnerships. Enterprises, educators and the community, working together, improve the quality and capacity of our education systems and the innovation, breadth and competitiveness of our economy. These linkages are crucial if we are to succeed in meeting the challenges and opportunities presented by rapidly changing global realities.

Whatever policy and funding arrangements are in place, synergistic partnerships between industry, community, educators and researchers need to be enabled. Ideally, those partnerships will be deep and broad. They will draw on and leverage each partner's expertise and strength, while respecting the different mission and value each brings to the partnership – and to the nation as a whole – shaping our future prospects.

Creating a climate for change: local



University: strategic agenda, systems, resourcing

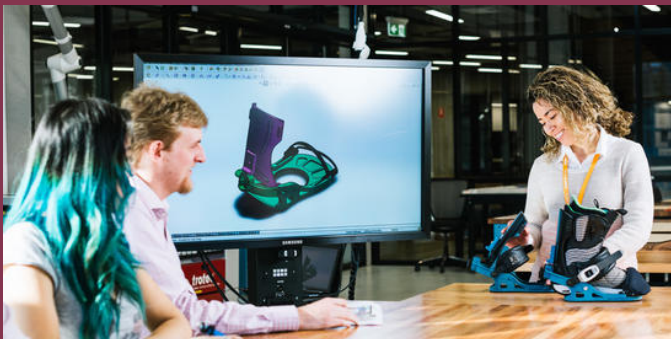
FACULTY OF SCIENCE, ENGINEERING AND BUILT ENVIRONMENT

Our four schools:

- School of Architecture & Built Environment
- School of Engineering
- School of Information Technology
- School of Life & Environmental Sciences



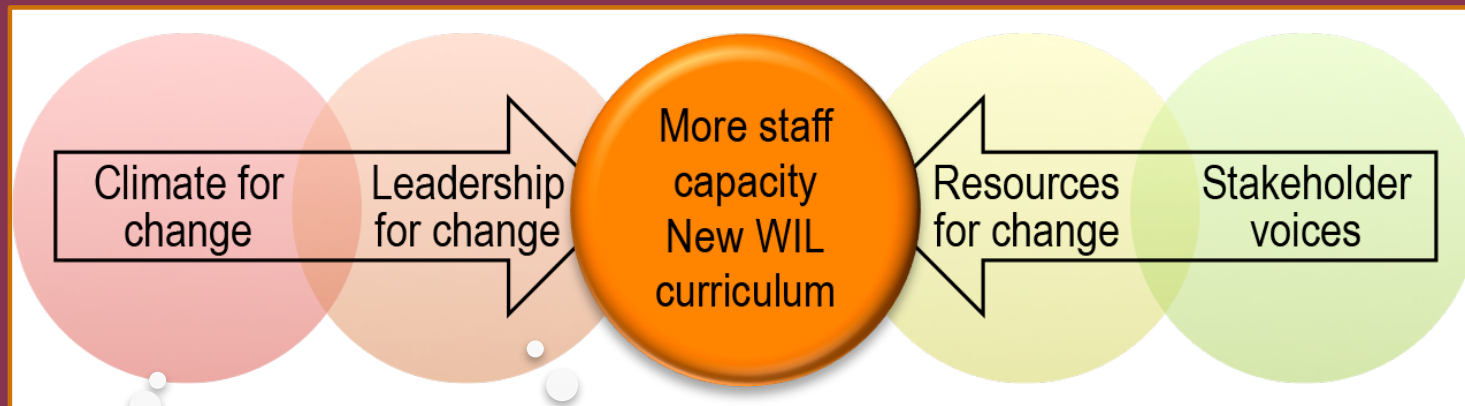
Faculty: degrees, discipline priorities, resources



Students and teachers and industry partners

Helping Faculties to grow WIL in Science

Leadership for WIL (2015-2016)



National network
WIL in Science Forum

Lighthouse projects
Regional workshops

<http://www.acds-tlcc.edu.au/work-integrated-learning/>

A change model for Faculties

- Faculties are at different stages in their WIL journey
- Need to meet them where they are
- Peer-to-peer support



- Discipline-oriented information,
- Case studies, examples, resources



Lighthouse Projects: case studies

<http://www.acds-tlcc.edu.au/publications/case-studies-of-successful-wil/>

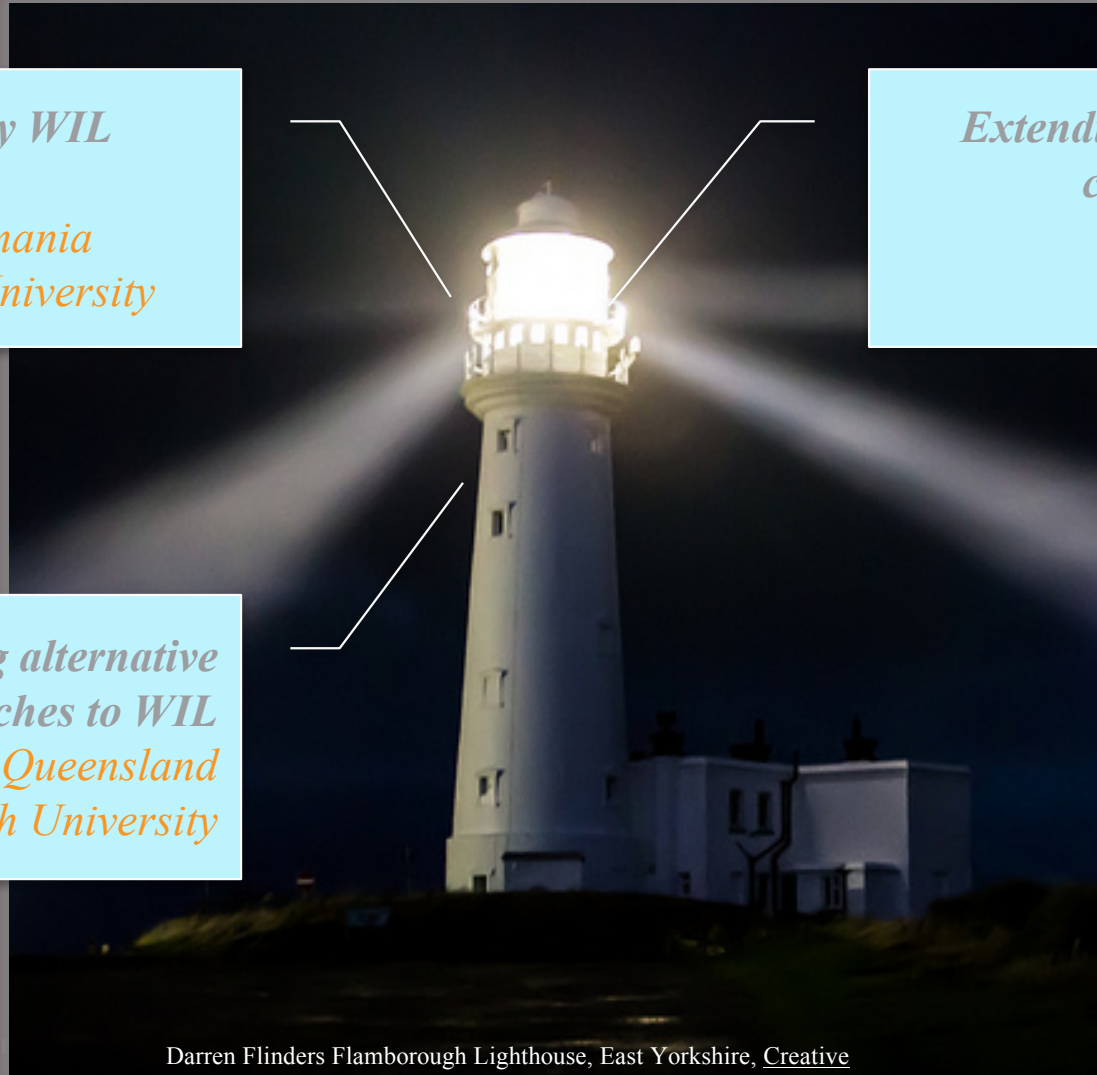
Setting up Faculty WIL programs

*University of Tasmania
Western Sydney University*

Extending WIL and building capacity for the future

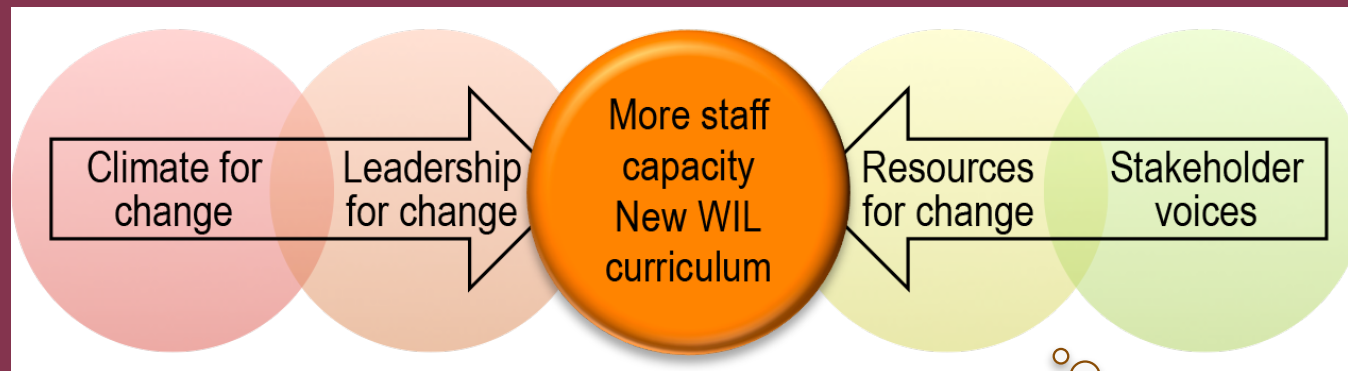
*UTS Sydney
Deakin University*

Developing alternative approaches to WIL
*University of Queensland
Monash University*



Helping Faculties to grow WIL in Science

Successful WIL (2016-2018)



Regional CoPs
Peer mentoring

WIL in Science guide
Curate existing resources
Expand case studies

WIL in Science 'specialists'
Science students

What WIL specialists say about student engagement

Research questions

- How and why science students **engage** with WIL opportunities
- Strategies for **communicating and motivating** science students to engage with WIL
- Strategies for making WIL experiences **meaningful** to science students

Who we spoke to

- N = 23 (13 universities)

Roles included:

- **Teaching** a WIL unit or program
- **Developing** or growing WIL within their faculty
- **Supporting** WIL
- **Engaging industry**
- **Championing** WIL

1. WIL specialists think science students are very interested in WIL but...

*“They’re **dead keen** for employment-related opportunity”*

- But how many actually engage?

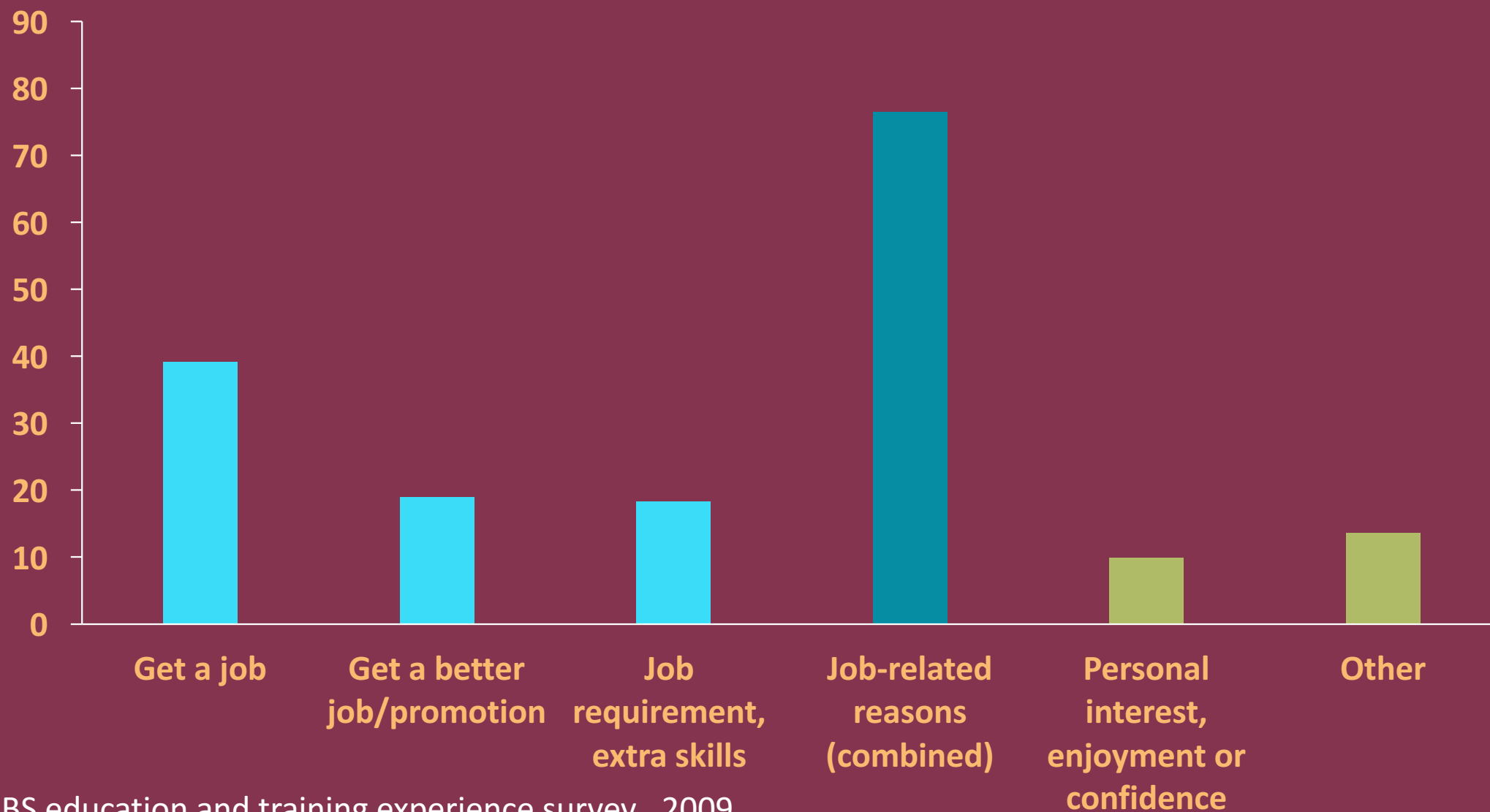
“it’s hard to say a blanket yes or no the majority are engaged or interested in WIL or not”

2. They think interest is related to employability

“This is an opportunity in a safe environment to actually explore whether what I think it's like to be a whatever is really what it's like. Get my foot in the door, get the edge on other graduates”

- Some students also motivated by passion and enthusiasm for their subject

Reasons for undertaking study (%)



ABS education and training experience survey , 2009

3. To engage students we need to have a conversation...

- Make WIL valuable and relevant

*“how understanding themselves, or having that self-awareness will **help them** navigate their world of work in the future”*

“what’s the purpose of this particular piece of assessment for you, for your future”

- Make WIL explicit
- We can't assume that students recognise the skills they are developing
- *"these are the things that we're going to build throughout the course alongside your discipline knowledge"*
- We need to talk to them about how the learning activities help them develop their capabilities

- Make WIL visible and accessible

*“**When they see** [placement] as part of their course map they tend to at least get engaged with ‘What is this? What do I need to do?’”*

*“We need to make room for it in the curriculum... it **makes it easier** for students to engage with it.”*

4. Different students need different conversations...

- Factors influencing engagement
 - The discipline culture
 - Ease of identifying career paths and opportunities
 - Discipline stereotypes
 - *“It's not a one size fits all”*
 - Motivations and goals
 - Prior work experience
 - Commitments outside university
 - Confidence

5. We all need to have the conversation...

“Multiple streams... multiple channels... multiple occasions”

- Lecturers
- Tutors and demonstrators
- Other students
- Recent graduates
- Employers and industry representatives
- Careers services

... but getting all staff on board can be challenging.

*“It’s a bit tricky as well getting the academics on board...
getting them to recognise that maybe half of the
student base, if not more, are **not on a research track**.”*

- Other challenges for teaching staff
 - Don’t know what to say about WIL
 - Don’t think of WIL
 - Don’t have a holistic view of the course

6. Of course, once we engage them, we need to make sure we deliver

- Assessment and reflection help make WIL meaningful

*“Because you are assessing the WIL experience you are kind of forcing them to reflect on what the **value** of that experience was. I think if there is no assessment built in... maybe they just do it and they don’t reflect on it.”*

7. Reflection is hard...

- Written reflection/reflective diary
- Job applications and interviews
- Skills audits
- Critical incident analysis

More WIL is not enough...

- We need to engage students in WIL by:
 - Communicating
 - Repeatedly and explicitly
 - About the value and relevance of WIL
 - Through multiple channels and multiple sources
 - Making WIL visible and accessible, with a range of options
 - Helping students reflect on their learning and development

But what do the students say?

- Focus groups and interviews
 - Approx. 75 students from two universities
 - Three more universities to come
- Explore strategies for
 - effectively communicating to students about WIL
 - motivating students to engage with WIL
 - making WIL experiences meaningful.

Next steps: information, ideas and more connections

WIL in Science Guide

WIL basics

WIL in Science
Defining WIL
Why WIL?
Common challenges

Good Practice

Design
Deliver
Evaluate

Program development

Initiate and plan
Build and trial
Expand and refine

Resources and Tools

Networks, discussion and sharing

Want to know more?

www.acds-tlcc.edu.au/



Thanks to the project team: Liz Johnson, John Rice, Cristina Varsavsky, Jo Ward, Mal Campbell, John Holdsworth, Trina Jorre de St Jorre, Jo Elliott and Jen Aughterson.