

Exploring Difference: The challenge of postgraduate education

A presentation from the Australian perspective

Philosophy

- ▶ Bachelors graduate should be able to practice in the discipline
- ▶ Masters graduate should be a master of the discipline – able to communicate it well, both in depth and breadth, and to apply knowledge to solve problems
- ▶ Doctoral graduates should be able to create new knowledge in the discipline and ensure the sustainability of the discipline

Successful Graduate Schools

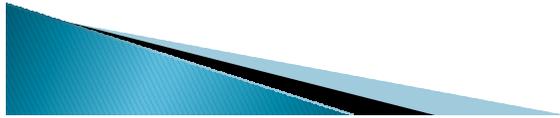
- ▶ Good leadership
- ▶ Clear and efficient processes
- ▶ Policy driven by data
- ▶ Responsiveness and support to individual student needs
- ▶ Career-directed training
- ▶ Support to supervisors and the institution's research mission

Main challenges

- ▶ Building strong intellectual communities
- ▶ Responsiveness in training to changing career pathways
- ▶ Responsiveness to the challenges posed by globalised education
- ▶ Data, and their relationship to quality

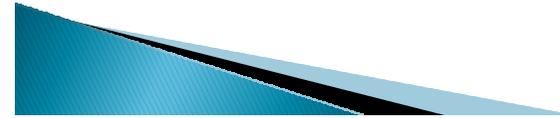
Workshop overview

- ▶ Outline the Australian cycle of Bachelors, Masters and Doctoral programs
- ▶ Outline the way in which research training is funded in Australia
- ▶ Overview national body of Deans for quality control
- ▶ Describe Go8 work on developing a unified high quality PhD program



Topics to discuss

- ▶ How to select the best students
- ▶ How to train supervisors
- ▶ How to ensure world-class facilities
- ▶ Content and design of programs
- ▶ Mobility
- ▶ Scholarships
- ▶ Data and research on research training
- ▶ Examinations



The Australian PhD:

A unified approach

A presentation on behalf of the Group of Eight



Australian overview

- ▶ Bachelors degrees in Australia are 3, 4 or more years in length – e.g. BA, BSc, BEng, MBBS
- ▶ Post-Bachelors degrees are called “postgraduate” – thus a postgraduate student is someone enrolled in a higher degree.
- ▶ A graduate is anyone who has completed any degree



Typical pathways

- ▶ BA (Hons) -> PhD 8 years
- ▶ BSc -> MEng -> PhD 8-9 years
- ▶ Entry to PhD requires:
 - Bachelors degree
 - Some research training, typically via an Honours year, or a Masters, or by demonstrated output through working with a research team
 - Grade average of 70% or better
 - English language at IELTS 6.5 or better

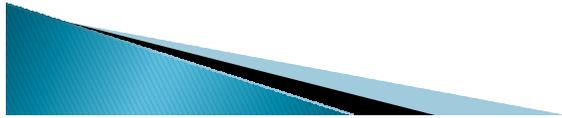
- ▶ Postgraduate degrees are typically
 - Masters by coursework
 - Masters by coursework and dissertation
 - Masters by thesis and coursework
 - Masters by research
 - Professional doctorates
 - PhD
- ▶ The last four are called “higher degrees by research” – HDR
- ▶ Most HDR students are doing the PhD

The PhD

- ▶ Individual research project
- ▶ Supervision by at least 2 supervisors
- ▶ First year is “Confirmation of Candidature” and requires demonstrated performance through a satisfactory research proposal, academic writing, oral presentation, ethics approvals, and other as specified
- ▶ Annual reporting requirements
- ▶ Programs of transferable skill training
- ▶ Examination of thesis via 2-3 external, independent examiners.
- ▶ Overall, about 25% of Australian undergraduates embark on postgraduate education
- ▶ Many do graduate coursework degrees, and many more undertake double Bachelors combinations
- ▶ International postgraduate demand is strong in coursework degrees, and is growing
- ▶ Approximately 20% of research students are international, and this figure is growing

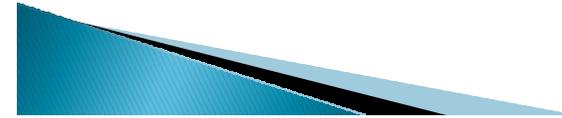
The Research Training Scheme

- ▶ Funds domestic higher degree by research students
- ▶ 4 years for PhD; 2 years for Masters
- ▶ Clock can recommence after 3 year break
- ▶ Relative share of funds to each institution based on success in completions and the research environment



RTS calculation

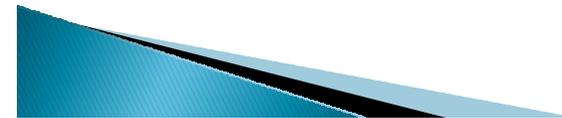
- ▶ In any year, each university's relative RTS performance index is computed:
 - HDR student completions are weighted at 50%;
 - Research income is weighted at 40%; and
 - Research publications are weighted at 10%.



- ▶ **Completions data** are collected through the Higher Education Student Data Collection and are weighted by course level and field of study:
 - Low cost: high cost completions are weighted at 1:2.35
 - Doctorate degrees by research: Master degrees by research are weighted 2:1



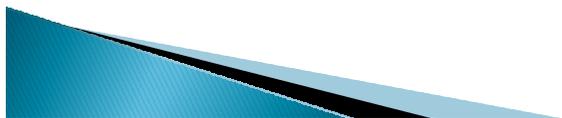
- ▶ **Research income** is collected in four categories:
 - Category 1: Australian Competitive Grants Income
 - Category 2: Other Public Sector Research Income
 - Category 3: Industry and Other Research Income
 - Category 4: Cooperative Research Centre Income
- ▶ Research income is measured in dollar values.



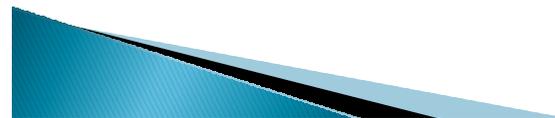
▶ **Publications** are collected in four categories:

- Books;
- Book chapters;
- Journal articles;
- Conference papers,

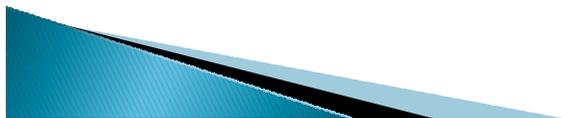
with books weighted by a factor of 5 and the other three categories weighted by a factor of 1. Authorship is attributed on a pro-rata basis



- ▶ Currently the Government distributes annually about \$600M via the RTS.
- ▶ Data measure quantity rather than quality
- ▶ The new ERA will assess research quality and distribute funds on the basis of quality
- ▶ The same relative formula is also used for scholarship distribution



- ▶ The RTS has driven a performance-based culture, focussing activities on successful and timely completions
- ▶ The RTS has run during a period of growth in research student numbers, including strong growth of international student numbers
- ▶ Australia has a Quality Assurance agency, called AUQA, which ensures that programs are delivered at appropriate standards. All programs must be registered and regularly reviewed.



- ▶ Thus, research degrees are free to domestic students
- ▶ International students must pay fees, which vary between \$AUS20k – \$AUS30k per annum
- ▶ Many, however, are funded by their home country, or win Australian-funded scholarships



DDOGS

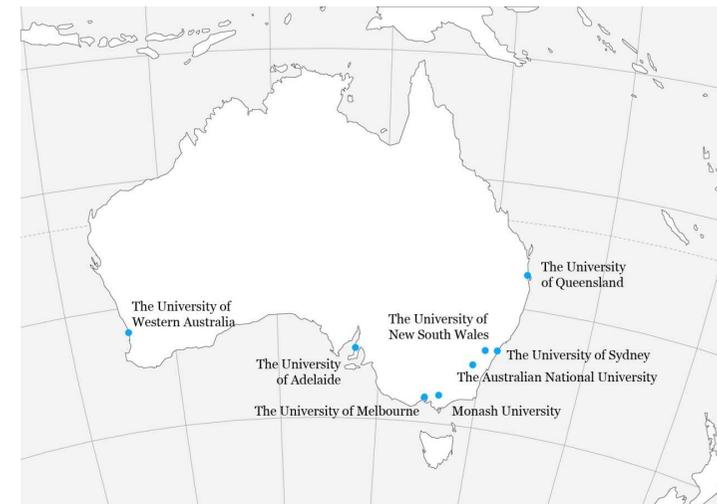
- ▶ All Australian universities have a person nominated as the Dean or Director of Graduate Studies
- ▶ Many have formal Graduate School structures
- ▶ Dean position depends on student numbers and university mission
- ▶ Deans meet twice yearly to discuss all matters relating to graduate research
- ▶ Also include New Zealand and often visitors from other countries

- ▶ DDOGS share examples of good practice
- ▶ Develop common frameworks relating to confirmation of candidature, annual reporting, supervision training and examination
- ▶ Differences are common, but student mobility is easy and outcomes are “harmonized” by the RTS and quality audits

The Go8 PhD

- ▶ The Go8 represent Australia’s eight research intensive, comprehensive universities
- ▶ The Go8 win over 70% of all university competitive research funds and supervise more than half of all postgraduate research students
- ▶ In March 2008, the Go8 DDOGS met to discuss the development of the “Go8 PhD” – designing a framework for world-class research training

Australia’s ‘Group of Eight’ Leading Universities



High quality students

- ▶ The focus of the Go8 PhD is **quality**:
 - High quality students
 - High quality supervision
 - High quality facilities
 - High quality programs (content and design)
 - High quality programs (mobility)
 - High quality scholarship schemes
 - High quality data and research on HDR programs
 - High quality examinations

- ▶ What best predicts success at the PhD level?
- ▶ Decline in domestic demand and an increase in international demand poses problems for selection
- ▶ Should we use a mandatory Graduate Research Examination (Cambridge) or other standardized testing?
- ▶ Should Confirmation of Candidature require formal examinations?

High quality supervision

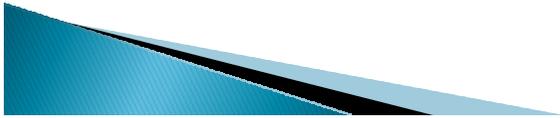
- ▶ Quality supervision is a key predictor of success
- ▶ Some disciplines have become fragile
- ▶ Increase in jointly-badged programs poses problems for supervision quality assurance
- ▶ Supervision requires training and constant upgrading
- ▶ Should supervisors be accredited?
- ▶ Should scholarships be directed to successful supervisors rather than to students?
- ▶ Is workload acknowledged?

High quality facilities

- ▶ Competition for resources is intense
- ▶ Competitive research groups must win external funding to keep facilities up to date
- ▶ Basic facilities such as space, computers and travel are under pressure
- ▶ Residential accommodation under pressure for international students
- ▶ IT infrastructure always lagging research
- ▶ Facilities are difficult to share even within institutions

High quality programs: design and content

- ▶ Australian PhDs can lack breadth and be short on generic skills
- ▶ Graduates want more training in team-based and applied research, project management, interdisciplinarity, grant writing, leadership and financial management
- ▶ Does coursework, though, lead to longer completion times?
- ▶ Should publications be required for PhD?



High quality programs: Mobility

- ▶ Should mobility be a compulsory part of the PhD training?
- ▶ National or international?
- ▶ What data do we have on PhD mobility?
- ▶ How do we encourage Australian students into co-tutelle programs?
- ▶ Can Go8/DAAD program be set up with other countries?
- ▶ How do we maximize benefits of EMBL membership?



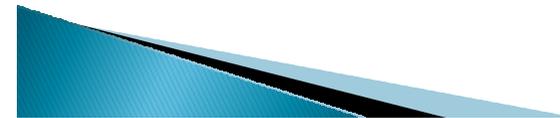
High quality scholarship schemes

- ▶ Currently, Australian stipends are too low at \$20,000 per annum for 3.5 years
- ▶ How can PhD stipends compete with salary loss during training?
- ▶ Too few scholarships for international students
- ▶ How are PhD students funded elsewhere?
- ▶ Do teaching assistantships impede or assist completion?
- ▶ Should PhD training be tied to grants?



High quality data and research

- ▶ Need data for management, policy advocacy, and research
- ▶ Different universities use different IT systems, thus data definitions and data structures often differ
- ▶ No protocols exist nationally or internationally for data definition and data sharing
- ▶ What data do we need globally?



High quality examinations

- ▶ Desirables are timeliness, independence, rigorous and reliable process, and value-add for the student
- ▶ High quality examiners must be informed, impartial, available, and familiar with standards
- ▶ Do we examine the thesis, the student, or the outcomes (publications)?
- ▶ Are oral examinations essential?



Conclusion

- ▶ Can we draw common themes regarding quality?
- ▶ Will changing career structures change the nature of the PhD?
- ▶ What do we need to do to improve student mobility?

