

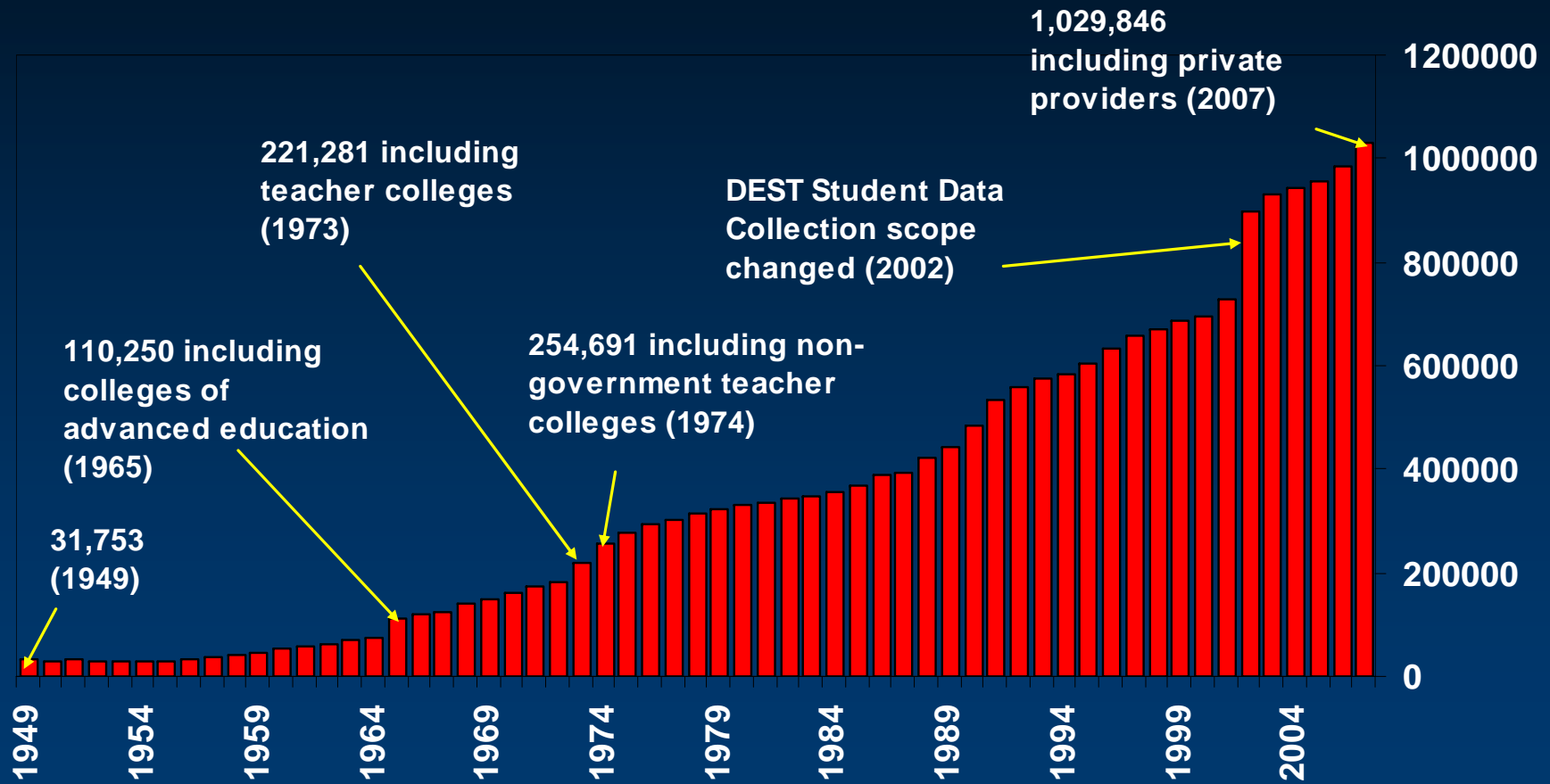
HIGHER DEGREE RESEARCH

Trends within the contemporary Australian context

HDR changes over time

- First PhD 1868 in Germany
- Not until the 1950s did a worldwide PhD 'system' develop
- Rapid rise in PhD numbers since 1990
- Wider context for PhD studies shifting – more than 50% of PhD graduates are not academics or directly in research careers
- Increasing emphasis on skill development in dual categories (academic and employability skills)
- Globally, a significant increase in number of PhDs expected over next 10 years, with an emphasis on *quality*

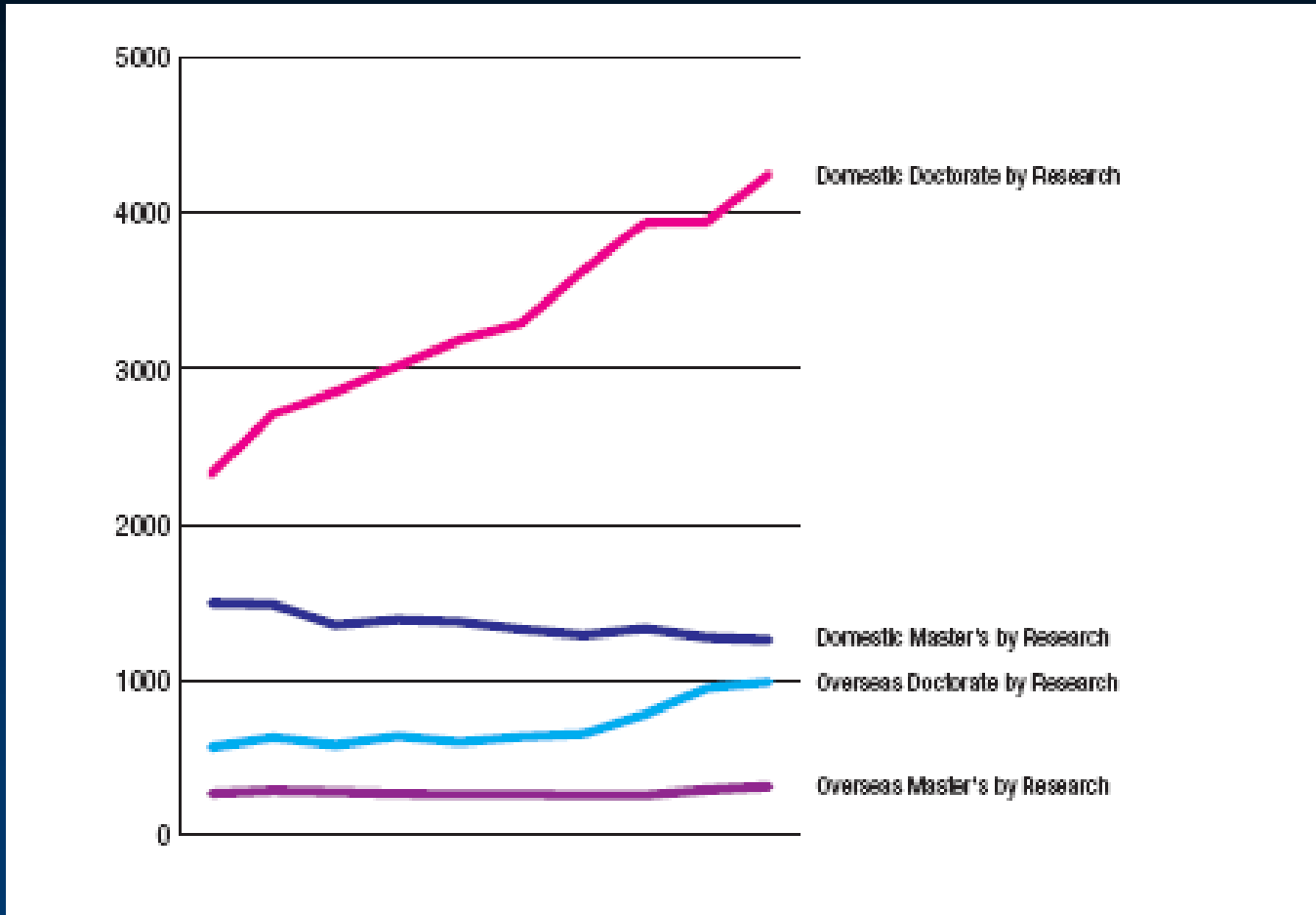
Students in Australian higher education 1949-2007



Source: DEEWR Selected Higher Education Statistics



Higher Degree Research completions, Australia, 1996-2006



- Diversification of PhD group - more women, international students, more 'professional' PhDs, increasing pressure for part-time PhDs
- Graduates are older. In the US, median age of PhD graduates is 34 (32 in SET; 40 for non SET fields). Australia - 65% between 30-49.
- Growth of new HDR fields – for example Law, Education, Business, Creative Arts
- In Australia, increase in 'Industry' HDR students, especially on ARC Linkage grants

Further trends in the PhD

- Completion times in flux - funding for 3.5 years, average completion 4-5 years (the US – 7 years).
- In Australia 70-80% of students complete their PhDs.
- Clear 'three phases' within a PhD; worldwide trend towards more coursework in phase 1, more focus on professional skills development and international experience in phase 2 and 3
- Notion of a 'supervisor' has been shifting, move from master/apprentice model to guide. Panels have gradually replaced sole supervisor, leading to 'whole of university' approach to graduate training

Findings of Go8 survey of HDR students 7-10 years after graduation

- Graduates wanted skills they felt were *not* provided during their PhD - teaching, leadership, public speaking, project management, teamwork experience, industry experience.
- Supervisors - support, availability, interest, enthusiasm and ability to give career guidance rated as more important than technical 'know-how'
- Specialised research in a field is not more valued than other more generalised research skills such as problem solving and critical thinking
- Mismatch between aims of PhD programs of 'adding to knowledge', 'making an original contribution to a field' and experience/benefits of a PhD

Need for a reconsideration of the PhD?

The way forward – new approaches to the HDR experience

The PhD is relatively new and transforming - Australia could take a leadership role in its redefinition

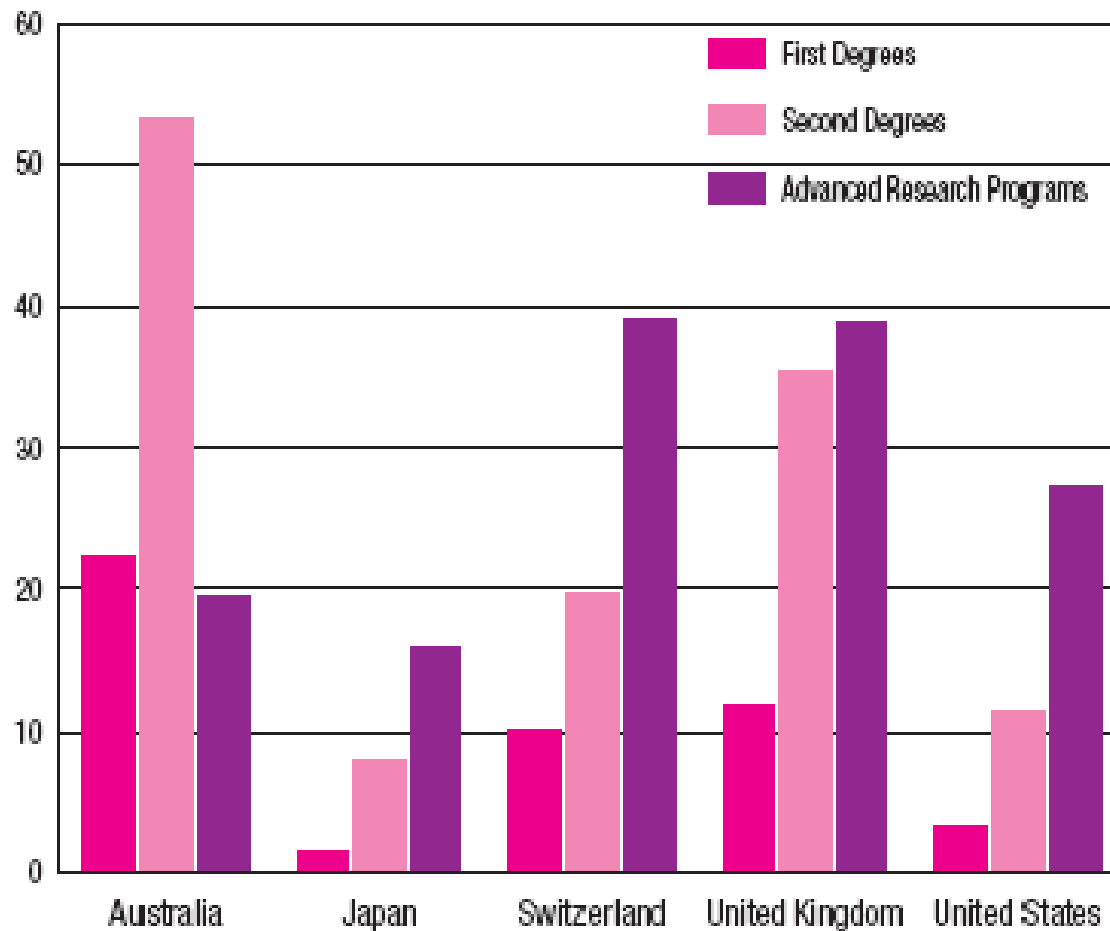
How?

- More graduates will be working outside universities – every Australian university should grasp this opportunity locally with government and business
- Diversify Australian HDR 'types' with compacts
- Distinctive training at each university – monitor HDR destinations and refine training accordingly
- International experience for students (mobility; joint PhDs)
- New approach to training and quality assurance – set the standard in quality

Drivers for PhD QUALITY measures

- signalled by government as an element of future funding
- a focus of interest in recent PhD reports from Europe, the UK and the US; Bologna process goal to develop comparable degrees
- 'best practice' and 'minimum standards' necessary but not sufficient to ensure quality
- Need to profile Australian PhDs in the global marketplace - PhDs are shorter in Australia with the drop-off in domestic numbers less dramatic than US; potential for growth in international HDRs

Proportion of international graduates in total graduate output by level of award, for selected countries, 2005



Source: OECD, Education at a Glance, 2007

HDR – quality ‘policy’ issues

- Presently no national validation of HDR quality
- Impact of ERA? HDR scholarships to be more closely linked to research quality – but serious problems with this approach
- PREQ data identifies the degree of satisfaction of HDR graduates but this is not a measure of quality

No clear policy on how Australian universities will both grow the number of HDR graduates and simultaneously increase the quality of outcomes from HDR training

- Need to be proactively identifying quality measures at institutional level rather than waiting for government

Quality points in the PhD

1. Entry of students – domestic, international, co-tutelle, co-badged
2. Evaluation of student's knowledge, capacity to undertake research prior to entry
3. Induction program
4. Quality of research training environments
5. Quality of supervision
6. Quality of academic training
7. Quality of professional development program
8. Quality of infrastructure and facilities provided for HDR students
9. Quality assessment of the PhD thesis
10. Graduate destinations

Entry of students

- Decline of Honours as entry qualification
- Rise in international students - consistency of assessment at entry difficult
- Introduce Graduate Record Examination (or equivalent)?

Evaluation prior to entry

- Important to acknowledge the skills and attributes that candidates are able to demonstrate on commencement
- Academic issues - valuating a student's knowledge/gaps in knowledge, capacity to undertake research
- Determining whether a student needs to undertake a Masters prior to a PhD; or whether there is a need for professional/skills development within the PhD

- Clear first phase of a PhD with developed program crafted for each student
- Research program developed
- Learning plan developed
- More careful selection of supervisors at end of first phase (3 months/6 months?)

Quality of supervision

- Continuous training
- Supervisor register
- Assessment and anonymous reporting by students
- Assessment through PhD outcomes
- Recognised in performance management processes and promotions

Quality of HDR training

- Diversity of training needed for all HDR students – teaching, industry experience, transferable skills. All HDR students need academic and employability skills.
- Maintain scholarly excellence in training - research methods/theory and research integrity required in first year of PhD
- Quality of research environment - critical mass of scholars with positive research culture
- International exposure
- Quality audit of academic training programs in fields – by industry, professional bodies. Measuring quality of program through student and employer assessment.

- Oral presentation
- Form for assessors includes quality measures
- Bibliometrics for student publications
- Assessor database developed along with assessor standards set to ensure quality of assessors
- Internal rating of assessment quality

Examiners indicate, with a number (1-6: from best to worst) in the box against each of the following criteria, how they rate that aspect of the candidate's work.

- The thesis as a whole is a substantial and original contribution to knowledge of the subject with which it deals.
- The candidate shows familiarity with, and understanding of, the relevant literature.
- The techniques adopted are appropriate to the subject matter and are properly applied.
- The candidate demonstrates a capacity for independent, critical thinking.
- The results are suitably set out, and accompanied by adequate exposition.
- The quality of English and general presentation are of a standard for publication.

Graduate destinations

- Focus of AUQA
- More systematic national mapping needed
- Ability to map training to destinations

- Opportune time to define the PhD from an institutional perspective and integrate this into compact negotiations
- UniSA – set the standard with the ‘engaged HDR experience’
- Focus on quality outcomes and how to measure these
- Focus on skill development and validating outcomes
- Mapping graduate destinations
- Provide government with validation of quality and skills development rather than wait for a quality agency

ANU

Academic staff per 10,000 employed persons, by age, Australia 2006

