Quality in Postgraduate Research
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Evolution of the doctorate:
a UK perspective on an
international qualification

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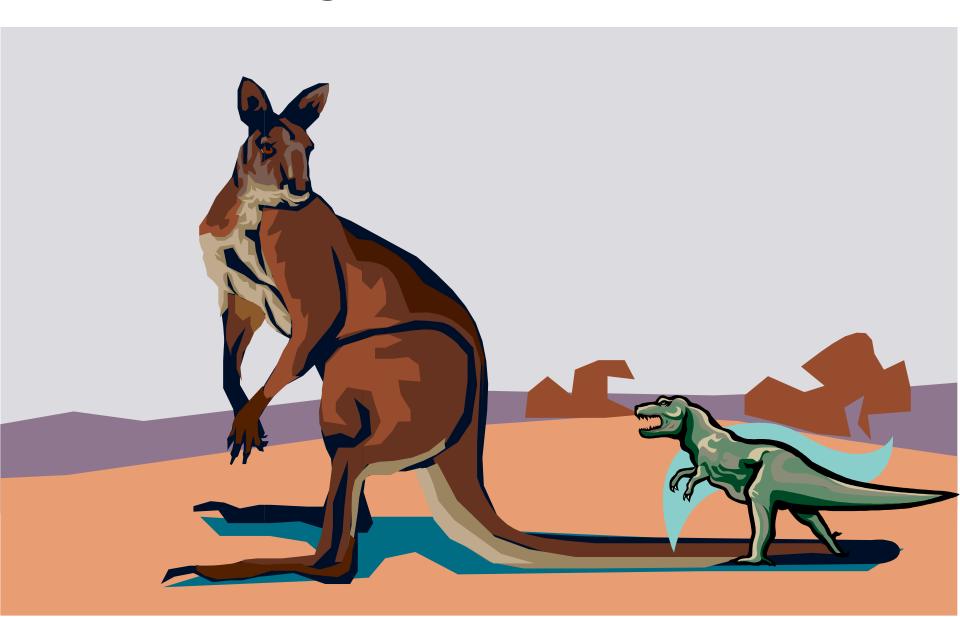
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The kangaroo and the T-Rex…

Summary

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1. Evolutionary factors

2. The PhD - a 'global brand'?

3. Different UK models of structured doctoral training

4. Quality and the impact of national and university guidance

5. Assessment

6. Conclusions

What is the doctorate for?

- Preparation for research, training for employment, or both?

- Do doctoral graduates need more personal and professional skills than they currently acquire?

- Importance of doctorate in universities' research effort and knowledge exchange ?[1]

[1]Moreno-Navarro, J. J. (2010). *New Regulation for Doctoral Studies in Spain*: presentation at 3rd annual meeting of EUA-CDE, Berlin, June 2010. [Online] Available from:
http://www.eua.be/events/past/2010/third-eua-cde-annual-meeting/Presentations.aspx

1 Evolutionary factors

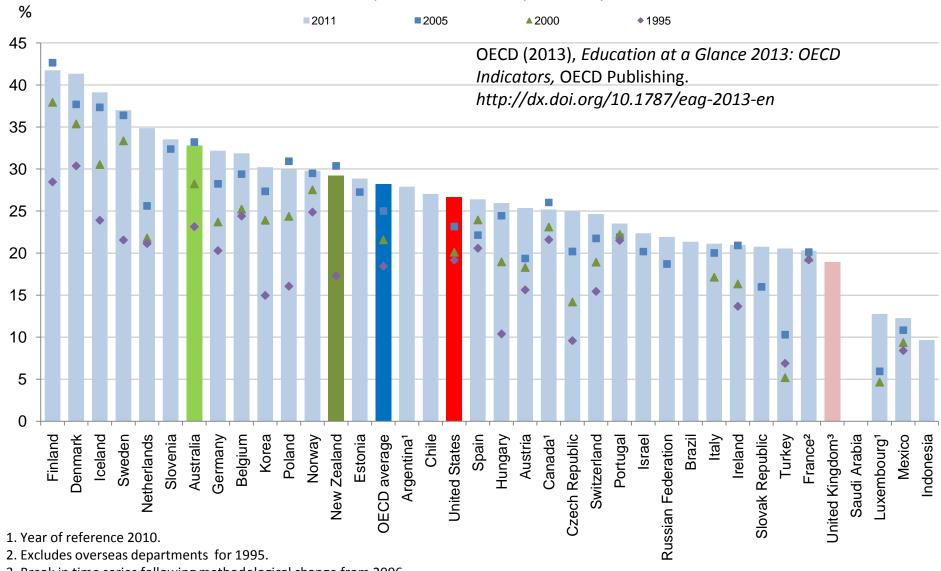# Some factors affecting doctoral development

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- Massification of higher education

- Political intervention and funding sources

- Needs of the professions

- Prioritisation of the student experience

- Employer demands

Massification of HE

Chart C1.1. Enrolment rates of 20-29 year-olds (1995, 2000, 2005 and 2011)

Full-time and part-time students in public and private institutions

■ 2011   ■ 2005   ▲ 2000   ◆ 1995

OECD (2013), *Education at a Glance 2013: OECD Indicators,* OECD Publishing.
http://dx.doi.org/10.1787/eag-2013-en

1. Year of reference 2010.
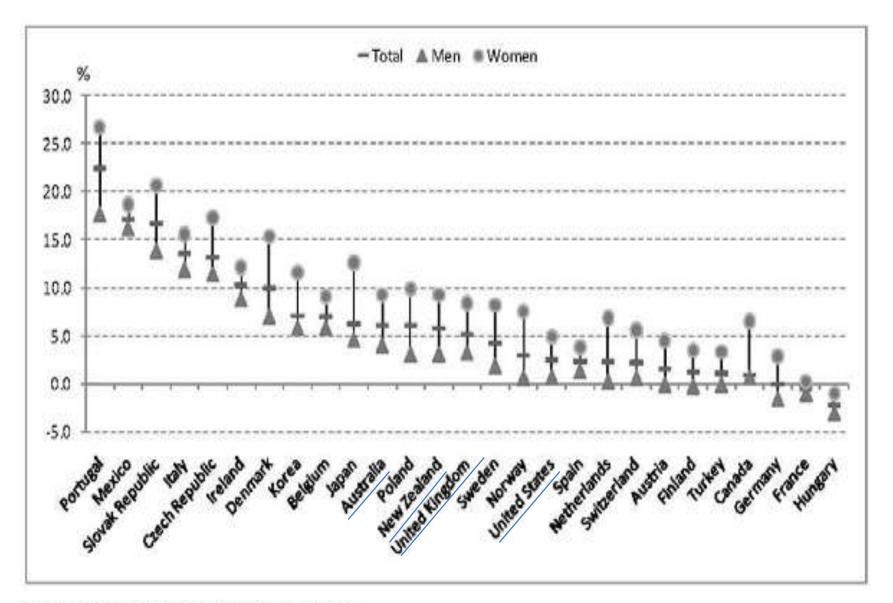
2. Excludes overseas departments for 1995.

3. Break in time series following methodological change from 2006.

Countries are ranked in descending order of the enrolment rates of 20-29 year-olds in 2011.

Source: OECD. Argentina and Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). Table C1.2. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).

Global average growth of doctoral degrees 1998-2006

Source: OECD Education database, 2009.

Number of students enrolled in advanced research programmes by year Source: OECD Statistics

	1998	2000	2003	2005	2010	2011
Australia	25,178	27,615	32,258	38,776	47,054	49,973
Canada	27,362	26,862	...	34,716	42,960	45,441
Denmark	4,290	4,648	4,758	4,385	7,849	8,857
France	97,311	94,327	97,709	82,696	71,356	71,121
Greece	2,175	2,096	19,321	22,314	22,705	22,628
Italy	12,369	13,177	29,939	37,520	38,227	36,313
Japan	52,141	59,007	68,245	73,527	73,734	74,606
Korea	26,291	31,787	36,226	41,055	53,533	59,699
New Zealand	2,897	3,336	3,722	4,758	7,779	8,073
Norway	3,061	2,133	4,170	4,360	7,442	8,112
Portugal	4,178	11,680	15,877	18,410	16,877	18,370
Sweden	16,952	20,714	21,623	22,216	19,986	20,642
Turkey	20,038	19,587	23,228	27,393	44,768	43,405
UK	69,617	74,242	85,061	91,607	85,179	90,028
US	291,740	293,002	306,889	384,577	479,423	492,345

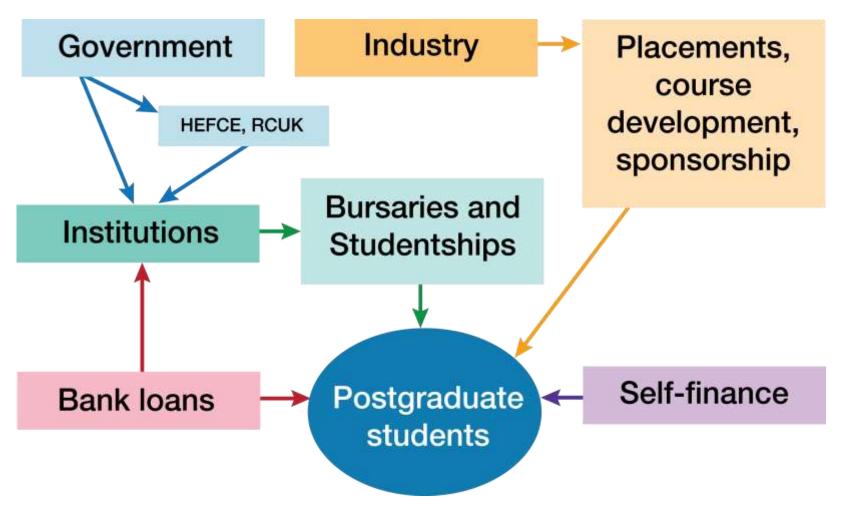# Australia: home and overseas PG numbers by field 2012 registrations

HOME

	Nat/ Ph Sci	IT	Eng/ Tech	Arch/ Bldg	Agric/ Enviro	Health	Educ	Man/ Comm	Socie/ Cult	Creat Arts	Total
H PG other	4,402	4,406	6,276	4,513	2,845	31,294	33,635	40,873	46,484	5,585	180,313
H PG R	7,561	1,156	4,029	706	1,759	7,069	3,798	2,733	11,175	2,966	42,952
Totals	11,963	5,562	10,305	5,219	4,604	38,363	37,433	43,606	57,659	8,551	223,265

OVERSEAS

	Nat/ Ph Sci	IT	Eng/ Tech	Arch/ Bldg	Agric/ Enviro	Health	Educ	Man/ Comm	Socie/ Cult	Creat Arts	Total
OS PG other	2,572	7,918	5,416	1,843	1,108	4,217	5,437	49,555	7,907	1,983	87,956
OS PG R	4,153	1,074	4,188	325	1,150	1,887	1,102	1,904	2,759	396	18,938
Total	6,725	8,992	9,604	2,168	2,258	6,104	6,539	51,459	10,666	2,379	106,894
Grand Totals	18,688	14,554	19,909	7,387	6,862	44,467	43,972	95,065	68,325	10,930	330,159

Source: OECD Education Statistics database   Data extracted 20 March 2014, OECD library

Political interventions and funding

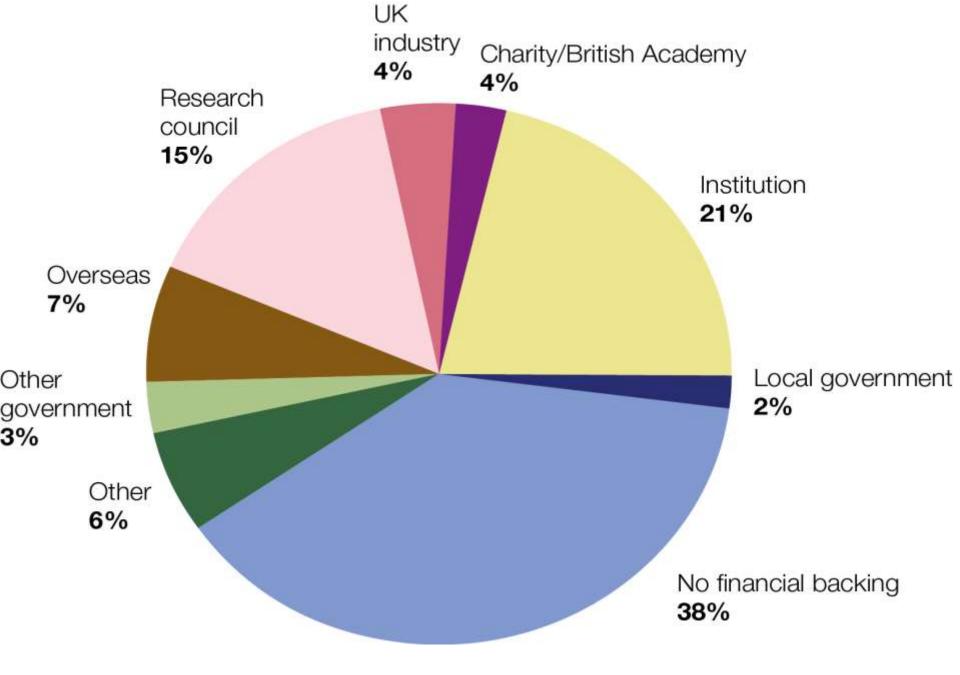ATATURK

VOTE

IMPACT! Halse, C. and Mowbray, S. (2011). The Impact of the Doctorate. *Studies in Higher Education*, 36: 5, 513-525

Funding – England and Northern Ireland

Creasey, E. (2013). *Postgraduate education in England and Northern Ireland: Overview report 2013,* ref. 2013/14 [Online] Bristol: HEFCE. Available at: http://www.hefce.ac.uk/pubs/year/2013/201314/name,82615,en.html

Figure 1: Funding flows into postgraduate provision

Ibid . Fig 9a – sources of tuition fees for PGR students in 2011-12

Current HEFCE postgraduate projects
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1. Intentions after Graduation survey
2. Typology for analysing student statistics
3. **Study to analyse transition from UG to PG**
4. Mapping taught PG fee levels
5. Information needs of taught postgraduates
6. Enhancement of PTES and PRES
7. **Comparative project on PG education in 8 countries**

Transition to higher degrees across the UK

- 12.5% entered a higher degree as a first destination (10% taught, 2% research)

- 'Pure' disciplines had higher progress rates than 'applied'

- Clear links between first degree achievement level and progress to higher degree

- EU domiciled graduates progressed at higher rates than UK-domiciled

Paul Wakeling and Gillian Hampden-Thompson (2013) *Transition to higher degrees across the UK: an analysis of national, institutional and individual differences.* York: Higher Education Academy
http://www.heacademy.ac.uk/resources/detail/Research/Postgraduate_transitions

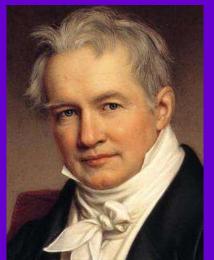# Comparative project on PG education

- Comparison of postgraduate education in eight countries
- Masters and doctoral programmes
- Three themes:
  - Quality
  - Fair access
  - Impact in employment
- 1-year project

United States

Europe and India

Australia

2 The PhD – a global brand?

Bologna Declaration and earlier

- German/Prussian PhD influenced development of all doctorates (17th century)

- 'Adoption of a system of **easily readable and comparable degrees'** (Bologna Declaration, 19.06.99)

- PhD as a qualification was way ahead: a 'global brand' for around a century

Alexander von Humboldt

Wilhelm von Humboldt

References: Noble (1994:6);, QAA (2012: 31); Stanford Encyclopaedia of Philosophy [online]
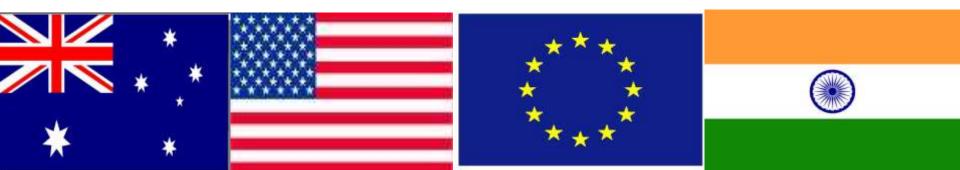
Competition and collaboration?

- Australia

- United States

- Europe

- Asia

Kemp, N., Archer, W., Gilligan, C. and Humfrey, C. (2008) *The UK's competitive advantage: The market for international research students*. London: UK Higher Education International Unit. Research Series/2
http://www.international.ac.uk/media/531762/the_uk_s_competitive_advantage.the_market_for_international_research_students.pdf
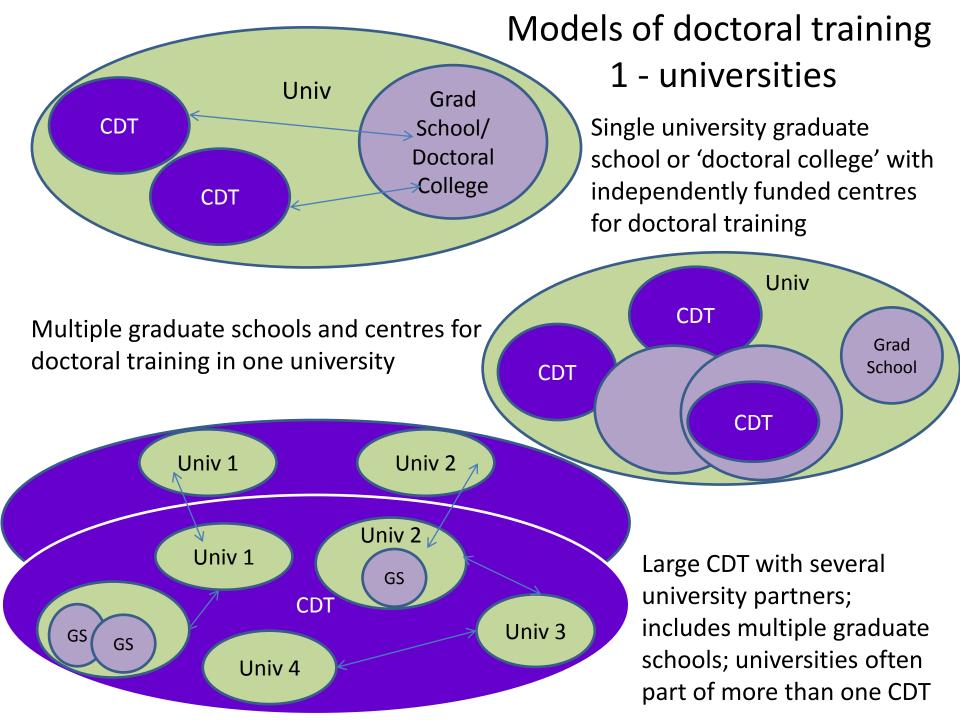Jørgensen, T.E. (2012) *CODOC – Cooperation on doctoral education between Africa, Asia, Latin America and Europe*. Brussels: European University Association. www.eua.be
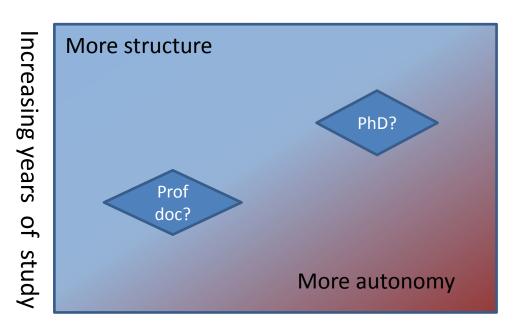
Global similarities in the doctorate?

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- Normally no credit weighting for PhD
- Full time doctoral candidates normally expected to complete in 4-5 yrs
- Assessment criteria rooted in research and concept of 'originality'
- Similar practices within fields/groups of subjects

3 Different UK models of structured doctoral training

Models of doctoral training 1 - universities

Single university graduate school or 'doctoral college' with independently funded centres for doctoral training

Multiple graduate schools and centres for doctoral training in one university

Large CDT with several university partners; includes multiple graduate schools; universities often part of more than one CDT

Models of doctoral training: 2 - candidates

- 'Taught' modules in years 1-2

- Identification of 'training' needs

- Cohorts rather than individuals

- Identify with lab / CDT / department / school ?

- 'Streams' of candidates?

Increasing years of study

More structure

More autonomy

PhD?

Prof doc?

Lunt, I., Mills, D., McAlpine, L. (2013). The ESRC's Doctoral Training Centres and UK universities. *Oxford Review of Education*, 1-19

4 Quality and the impact of national and university guidance

Qualifications frameworks

Australia

- [Australian Qualifications Framework 2nd edition](#)
- [Group of Eight: potential attributes of PhD graduates](#)

UK and other European countries

- [Dublin descriptors](#)
- [Framework for higher education qualifications in the European Higher Education Area](#)
- [Framework for Higher Education Qualifications (England, Wales and Northern Ireland)](#)
- [German qualifications framework](#)
- [Scottish credit and qualifications framework](#)
- [Framework for qualifications of HEIs in Scotland](#)
- [Facets of Mastersness: a Framework for Master's level study](#)

QA and other reference points for postgraduate degrees

- [UK Quality Code - Research degrees - B11](#)
- [UK Quality Code - Managing higher education with others – B10](#)
- [Doctoral degree characteristics](#)
- [Master's degree characteristics](#)

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- [LERU advice paper 15, January 2014: Good practice elements in doctoral training](#)
- [One Step Beyond: making the most of PG education](#)
- [Postgraduate education in England and Northern Ireland: Overview report 2013](#)
- [A data-based assessment of research degree programmes in the US](#)

Comparing different doctorates ?

[Penn University Graduate School of Higher Education: executive doctorate in HE](#)

- What matters?
  - Fitness for purpose
  - Clarity of graduate outcomes
  - Broadly consistent achievement levels

Elements of quality in doctoral education

Element	Evaluation
• Doctoral output and outcome	• Final examination; • Evaluation of individual; employability of graduate
• Integration in research environment	• Candidates' contributions to research output (publications); questions to candidates about level of integration
• Student experience, including supervision and development opportunities	• Effect of structured training; candidate surveys (e.g. PREQ/PRES)

Emerging findings on 'quality' from HEFCE comparative project…

…of postgraduate outcomes

…of postgraduate achievement

Issues are:

- Entry requirements
- Length of programme
- Training structures
- Comparability and perceptions of graduate outcomes

5a Assessment: different forms of doctoral examination

Global PhD assessment models[1]

Similarities

- Thesis (or equivalent) common to all?

- Viva or defence – commonly required in many countries[2]

- Formal requirement for 'originality' or 'contribution to knowledge'

- Licence to become an academic practitioner?

Differences

- Timing and nature of disclosure of final outcome to candidate

- Nature of the oral defence: public, private, or none

- Number of examiners

- Whether or not supervisor can be present

- Requirement for professional practice in some subjects

- Pass/fail or graded

[1]Kyvik, S. (2014) Assessment procedures of Norwegian PhD theses as viewed by examiners from the USA, the UK and Sweden. *Assessment & Evaluation in HE*, 39:2, 140-153
[2]Group of Eight (2013) *The Changing PhD: discussion paper* [Online] :
http://www.go8.edu.au/university-staff/go8-policy-_and_-analysis/2013/the-changing-phd

Assessment of the PhD in the UK

- Judgement of thesis plus *viva voce* in all cases
- A private process – no public defence
- At least two examiners, sometimes three
- Independent chair/convenor may be present
- Supervisor may attend with candidate's permission
- Length of viva: 1.25 – 3.5 hours, depending on subject

Professional doctorate – assessment characteristics

- Completion of assessed 'taught' modules or other coursework
- Credit attached to all or some of the degree (minimum 180)
- Thesis typically shorter than PhD
- Assessment criteria normally require 'potential to enhance an area of professional practice'
- Viva a common requirement
- Employers may be involved in the assessment

5b Assessment –

a UK research study

Assessment of the PhD: 'Originality' and its interpretation

- *The concept of 'originality' in the PhD: how is it interpreted by examiners*?

- Joint authors: Gillian Clarke and Ingrid Lunt

- Taylor and Francis online, recent articles: published 02.01.14

- Explores ways examiners and others interpret the concept of originality when judging candidates' achievements in the final PhD exam

- Compares two data sets (2007 and current)

Clarke, G. and Lunt, I. (2014) The concept of 'originality ' in the PhD: how is it interpreted by examiners? *Assessment and Evaluation in Higher Education*. Published online 02.01.14

Literature (1)
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Australian Qualifications Framework Council (2013) *Australian Qualifications Framework*. 2nd edition.

Bourke, S. and Holbrook, A. (2013) Examining PhD and Research Masters Theses*. Assessment and Evaluation in Higher Education*

Delamont, S., Atkinson, P. and Parry, O. (2000) *The Doctoral Experience: Success and Failure in Graduate School*

Denicolo, P.M. (2003) Assessing the PhD: a constructive view of criteria. *Quality Assurance in Education*

Johnston, S. (1997) Examining the examiners: An analysis of examiners' reports on doctoral theses. *Studies in Higher Education*

Lovitts, B. (2007) *Making the Implicit Explicit: creating performance expectations for the dissertation.*

Literature (2)

Mullins, G. and Kiley, M. (2002) 'It's a PhD, not a Nobel Prize': How experienced examiners assess research theses, *Studies in Higher Education*

Ostriker, Jeremiah P., Holland, Paul W., Kuh,Charlotte V. and Voytuk, James A.(eds) (2010) *A Data-Based Assessment of Research-Doctorate programmes in the United States*

Quality Assurance Agency for Higher Education (2001) *The framework for higher education qualifications in Scotland*. Glasgow: QAA.

Quality Assurance Agency for Higher Education (2008) *The framework for higher education qualifications in England, Wales and Northern Ireland*. Gloucester: QAA.

Literature (3)

Tinkler, P. and Jackson, C. (2000) Examining the Doctorate: institutional policy and the PhD examination process in Britain, *Studies in Higher Education*

Tinkler, P. and Jackson, C. (2004) *The Doctoral Examination Process*

Trafford, V (2002) *Questions in a Doctoral Viva: Views from the Inside*. Paper presented at the UK Council for Graduate Education Research Degree Examining Symposium

George E. Walker, Chris M. Golde, Laura Jones, Andrea Conklin Bueschel and Pat Hutchings (2008), *The Formation of Scholars: Rethinking Doctoral Education for the Twenty-First Century*

First data set - 2007

Total of 72 respondents, 65 of whom (90%) answered Question 8: *How do you/does your institution define 'originality' in the context of doctoral study*?

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Group (a): 31 (43%) of respondents provided their own definitions of originality

Group (b): 16 (22%) linked originality to publishability

Group (c): 13 (18%) said definitions of originality should be discipline-specific

Group (d): 10 (14%) did not wish to define the concept of originality

Group (e): 3 (4%) emphasised the importance of a common understanding of originality

Group (f): 2 (3%) wanted a reference to originality to remain within the doctoral qualification descriptor

Definitions of originality: first data set

'a contribution to knowledge, specifically, the extent to which the candidate's work provides insights into and increases understanding of their field'

'new knowledge/discovery of new facts arising from an individual's research or creativity'

'the application of existing knowledge in a way that provides new insights into the subject, e.g. through using different approaches or methodology'

'forms a distinct contribution to knowledge of the subject and affords evidence of originality by the discovery of new facts and/or by the exercise of critical power'

'the ability to think independently, find solutions to difficulties and offer fresh insights into existing situations'

Second data set (current)
PhD case studies and interviews

	Candidate	Examiner Int	Examiner Ext	Supervisor	Independent Chair/ Convenor	Non-case study examiners
University 1	1: SS	1: SS	1: SS	2: SS	-	
University 2	2: B, A	1: B	2: A, B	1: A	2: A, B	
University 3	tbi	1: SS	tbi	tbi	-	1: MB
University 4						1: E
University 5						1: MB
Key	A = arts B = biological sciences E = engineering			MB = molecular biosciences SS= social sciences tbi = to be interviewed		

PhD study: questions for examiners

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- *As an examiner, what attributes/ characteristics/abilities/skills are you seeking in PhD candidates? For example, what questions did you have in mind when considering the recent candidate's work (thesis or equivalent) and during the viva? Did you benchmark the person with other candidates you've examined? To what extent, if at all, did you have in mind any external criteria (including guidance at subject level)?*

PhD study: questions for candidates

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- *Before the final assessment of your thesis, and before the viva, what did you think you would have to do to be awarded a PhD? For example, on what basis did you think examiners would be making their judgements, about your thesis and about you as an individual researcher? What formal guidance, if any, are you aware of that suggests what examiners should take into account? And what attributes /characteristics/abilities/skills do you think examiners are looking for in PhD candidates?*

PhD – examiners' responses about what they are seeking in PhD candidates

Eight groups:

- Originality and/or a contribution to knowledge
- Academic level and intellectual rigour
- Quality of data and its analysis
- Methodological approach
- Knowledge and understanding (of the student's own work and the field of study)
- Publication and publishability
- Candidate's ability to analyse their own work critically and to defend it
- Quality of thesis and ownership of the work

Originality/contribution to knowledge

- To fulfil criteria set by the university, e.g. an original contribution

- What is the candidate's contribution to the field and does s/he have a grasp of the body of literature?

- Has the candidate generated new knowledge (produced something not done before or added to the understanding in/made a contribution to the field)

- Is it an original contribution and does it tell a coherent story?

Candidates' responses

- One candidate did not mention originality in the PhD, instead focusing on the quality of research being assessed

- Another said 'I think the only criterion I was really aware of was originality, that you had to make some substantive contribution to knowledge

- The third candidate confirmed s/he was aware the research had to be original because of guidance by the university, which defined originality in terms of a contribution to knowledge

Questions about 'originality'

- Is 'originality' the same as 'a significant contribution to knowledge' or are they different?
- What is a 'significant' contribution to knowledge?
- Are there 'degrees' of originality and if so do they relate to the candidate's overall achievement level?
- Do we agree that 'originality' can only be defined at subject level; should we try to define the way it is interpreted by different subjects?
- How do all PhD graduates meet the 'originality' criterion as understood in their subject?
- How does originality / a contribution to knowledge relate to publishability?

Emerging themes from PhD

1. The viva and its role as a formative assessment process
2. The perceived importance of both elements of the final examination and the purpose of the viva
3. The role and responsibilities of examiners
4. The way in which the concept of originality and a [significant] contribution to knowledge is interpreted
5. Potential changes to the final PhD assessment process
6. Variation in thesis structures

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7 Conclusions

Concluding questions…purpose of the doctorate

- To what extent is the 'PhD' still a global qualification?
- Are the outcomes of all forms of doctorate similar enough?
- Are those outcomes of doctoral programmes in alignment with the purposes on the previous slide?
- If not, what if anything should we do about it?
- Is it feasible/desirable to introduce more consistency in the doctoral assessment process given the individual nature of the doctoral degree?
- Does it matter if a common understanding about the output and outcomes of doctoral graduates is mainly at subject level?

What might the future look like?

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1. Can we continue to recruit similar levels of international postgraduate researchers?

2. Is it feasible to think we can increase postgraduate numbers?

3. A UK pre-occupation: do our postgraduate degrees stand up to international comparison?

4. What impact is structured doctoral training having on the quality of outcomes?

5. Will students be put off postgraduate entry because of debt?

6. Have the PhD and the professional doctorate converged?

7. Has the doctorate evolved into a qualification that mainly prepares graduates for non-academic jobs?

To end on a positive if cautionary note -

- The doctorate is not only alive and well but flourishing in universities around the world, with more doctoral graduates contributing to society and the economy than ever before, but we are faced with a tension. The different purposes of a doctoral degree are many and varied: how do we ensure doctoral graduates are equally well prepared for a research career (academic or other) and for a myriad of employment roles with small and large organisations?