The CRC Contribution to Research Training:

Snapshot of findings and opportunities for future development

Nigel Palmer
University of Melbourne and
The Australian National University

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Background – The 2012 Scoping study

In 2012 a scoping study was commissioned by the CRC Association to investigate **the definition and measurement of the CRC contribution to research training**.

Aims:

- Identify **metrics** for demonstrating value and distinctiveness;
- Identify **dimensions and criteria** by which CRCs may be able to benchmark their RHD activities; and
- Identify a set of guiding questions for **future development**.

Findings

- Metrics
- Dimensions to quality and distinctiveness
- Opportunities for future development

Enrolment Metrics

- Enrolment metrics support the **basic measures for efficiency and effectiveness** in research training.

- Measures used include:
  - total **enrolments**;
  - degree **completions**; and
  - and full-time equivalent **student load**.

- These basic measures combine to provide other indicators, such as **student attrition and rates and times for student completion**.

Student load

Table 2 Research student load (2010): CRC program with 15 largest university providers

Rank	Provider	Research Doctorate	Research Masters	Total RHD load
1	The University of Sydney	2,831	642	3,473
2	The University of Melbourne	2,727	493	3,220
3	The University of Queensland	2,683	293	2,976
4	Monash University	2,368	500	2,868
5	The University of New South Wales	2,420	404	2,824
6	The Australian National University	1,804	93	1,897
7	The University of Western Australia	1,434	187	1,621
8	The University of Adelaide	1,255	145	1,400
9	Queensland University of Technology	1,071	277	1,348
10	Curtin University of Technology	1,114	185	1,299
11	Macquarie University	1,229	61	1,290
	CRC Program	**1,219**	**51**	**1,270**
12	RMIT University	1,004	173	1,177
13	University of Wollongong	928	169	1,097
14	Griffith University	988	82	1,070
15	La Trobe University	927	130	1,057

Sources: Unpublished data from the CRC Program Management Data Questionnaire (MDQ), DIISR and *Students 2010 (full year), Selected Higher Education Statistics* (DEEWR, 2011).

Research doctoral completions

Table 3 Research doctoral completions (2010): CRC program with 15 largest university providers

Rank	Provider	Research Doctorate	% of all PhD completions
1	The University of Sydney	573	9%
2	The University of Melbourne	566	9%
3	The University of Queensland	474	8%
4	The University of New South Wales	471	8%
5	Monash University	424	7%
6	The Australian National University	301	5%
7	The University of Adelaide	272	4%
8	The University of Western Australia	235	4%
	CRC Program	**218**	**4%**
9	Queensland University of Technology	206	3%
10	University of Tasmania	178	3%
11	Curtin University of Technology	169	3%
12	Macquarie University	166	3%
13	University of South Australia	159	3%
14	Griffith University	157	3%
15	RMIT University	143	2%

Sources: Unpublished data from the CRC Program Management Data Questionnaire (MDQ), DIISR and *Students 2010 (full year), Selected Higher Education Statistics* (DEEWR, 2011).

Research doctoral completions

Table 5 Comparison of completion ratio measures for top 10 university providers

	Three year moving average ratio of research doctoral completions to commencements 2002-2010	Ratio of total overall research doctoral completions to commencements 2001-2011	Average simple ratio of annual research doctoral completions to commencements
University of New South Wales	77%	74%	75%
University of Western Sydney	75%	66%	72%
University of Queensland	75%	73%	74%
University of Melbourne	73%	74%	74%
Flinders University	66%	64%	65%
University of Sydney	65%	66%	66%
University of Tasmania	65%	65%	66%
CRC Program	**64%**	**64%**	**66%**
University of Western Australia	64%	63%	64%
Monash University	63%	62%	63%
Australian National University	62%	62%	63%

Source: Unpublished data from the CRC Program Management Data Questionnaire (MDQ) and *Selected Higher Education Statistics (Students)* for the relevant year, Department of Industry, Innovation, Science, Research and Tertiary Education. Ratios are expressed as percentages. Only university providers reporting data since 2001 were included for comparison.

Research doctoral completions

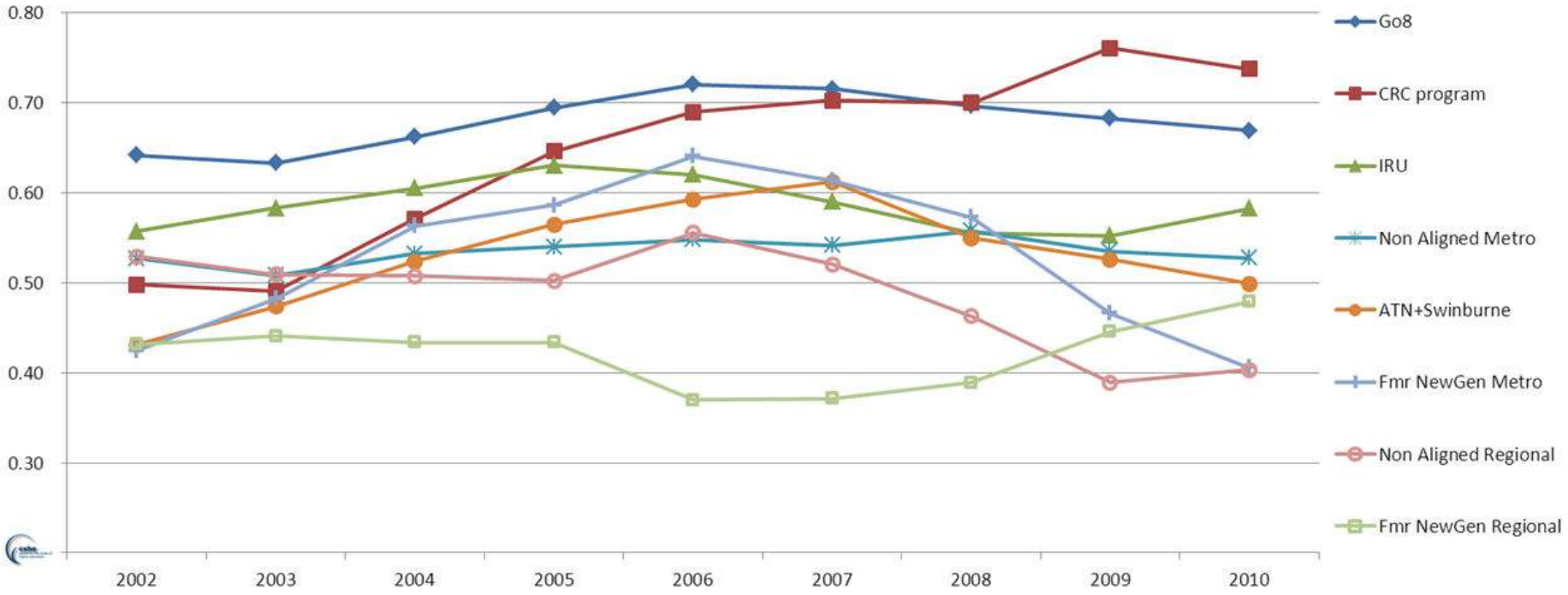
Table 4 Completion ratio measures for research doctoral candidates

	Three year moving average ratio of research doctoral completions to commencements 2002-2010	Ratio of total overall research doctoral completions to commencements 2001-2011	Average simple ratio of annual research doctoral completions to commencements 2001-2011	% of all PhD completions 2001-2011
Go8	68%	68%	68%	55.6%
CRC program	**64%**	**64%**	**66%**	*3.8%**
IRU	59%	58%	58%	12.0%
Non Aligned Metro	54%	53%	53%	9.5%
ATN+Swinburne	53%	52%	52%	13.6%
Fmr NewGen Metro	53%	49%	50%	4.7%
Non Uni Providers	50%	48%	54%	0.3%
Non Aligned Regional	49%	48%	48%	2.1%
Fmr NewGen Regional	42%	42%	43%	2.2%
National	61%	60%	60%	

Source: Unpublished data from the CRC Program Management Data Questionnaire (MDQ) and *Selected Higher Education Statistics (Students)* for the relevant year, Department of Industry, Innovation, Science, Research and Tertiary Education. Ratios are expressed as percentages. Provider groups defined as per *Applications, Offers and Acceptances* (DEEWR, 2011). * CRCs support research training in partnership with universities, therefore this percentage is independent to the provider share represented here.

Research doctoral completions

Figure 9 Ratio of Research Doctoral Completions to Commencements by Provider Group (3 Year Moving Average)



Source: Unpublished data from the CRC Program Management Data Questionnaire (MDQ) and *Selected Higher Education Statistics (Students)* for the relevant year, Department of Industry, Innovation, Science, Research and Tertiary Education. Provider groups defined as per *Applications, Offers and Acceptances* (DEEWR, 2011).

Findings

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- Dimensions to quality and distinctiveness
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Quality and distinctiveness

The scoping study identified a range of strengths to the CRC research training environment, including:

- Tackling ‘real world’ problems in a ‘state of the art’ industry context;
- Access to ‘industry standard’ infrastructure and resources;
- Exposure to a broad range of discipline areas;
- Networking opportunities directly with industry partners;
- Opportunities to get a ‘head start’ on a graduate role with industry;
- The sense of community and collegiality typical of CRCs;
- Access to expert non-academic advisors, including from industry, government and non-profit sectors;
- Access to industry mentors in addition to the supervisory panel;
- Professional development opportunities in areas outside traditional ‘generic skills’ training; and
- The opportunity to be ‘part of something bigger’.

Markers for quality and distinctiveness

How do these elements look when compared with dimensions and components associated with “quality research training” in the university context?

Dimension	Aspect
Infrastructure and resources for research	Infrastructure, equipment, facilities and resources provided to support research, appropriate to enabling successful and timely completion.
Supervision and examination	Quality in supervision, and of the examination process.
Collegiality and intellectual climate	An open, collegial and productive learning environment, with support for doing and learning about research.
Skills and professional development	Opportunities for personal and professional development, including the development of skills and professional capabilities.
Administrative, student support and QA policies, programs and strategies	Administrative and student support services and programs. Policies, programs and strategies to promote and assure quality and to manage risk.

From *Dimensionality in Research Training* (Palmer, 2012).

Markers for quality and distinctiveness

The (draft) Good Practice Framework for Research Training

Dimensions	Components
1. Governance	1.1 HDR Committee 1.2 Policies 1.3 Candidate Representation 1.4 Grievance Procedures and Appeals 1.5 Collaborative Research Support
2. Program and Outcomes	2.1 HDR Program Evaluation 2.2 Candidate Outcomes 2.3 Coursework and Research Training Skills 2.4 Professional Skill Development 2.5 Candidate Feedback Mechanisms
3. Selection and Admission	3.1 Initial Enquiry 3.2 Entry Pathways 3.3 Transfer and Advanced Standing 3.4 Matching Needs, Resources and Supervision 3.5 Selection, Approval and Offer
4. Supervision	4.1 Supervision Capacity 4.2 Supervisor Eligibility 4.3 Supervisory Team Compliance 4.4 Supervisor Development and Support

Luca, J., & Wolski, T. (2012). *Draft Good Practice Framework for Research Training in Australia*. Perth, Australia: Edith Cowan University.

Markers for quality and distinctiveness

The (draft) Good Practice Framework for Research Training

5. Candidature Management	5.1 Supervisor and Candidate Responsibilities 5.2 Orientation and Induction 5.3 Confirmation of Candidature 5.4 Candidate Progression 5.5 Variations to Candidature
6. Responsible Conduct of Research	6.1 Responsible Research and Academic Integrity 6.2 Ethics 6.3 Intellectual Property
7. Candidate Support	7.1 Scholarships 7.2 Research Culture and Engagement 7.3 Resources and Infrastructure 7.4 Travel Support 7.5 Pastoral Care 7.6 Support Services for Diversity 7.7 Post Thesis Submission Support
8. Employability Skills Development	8.1 Curriculum Vitae and Portfolio 8.2 Career Development 8.3 Networking 8.4 Interdisciplinary Awareness 8.5 Mobility and International Awareness
9. Examination	9.1 Pre Submission Review 9.2 Appointment of Examiners 9.3 Examination of Thesis 9.4 Conferral of Award

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Scoping study recommendations

The scoping study recommended that **rather than be a one-off research project, data collection and reporting form part of the ongoing activities** of CRCs.

Follow-up activity:

- Structured engagement and consultation supported by an **internal evaluation and appraisal tool**
- A revised **program-wide data strategy**
- Investigate the development of program-wide **good practice resources**.
- Standards?

Outcome documents

- **The CRC Contribution to Research Training**

Scoping study final report.

- **Briefing for the CRCA**

Provides a strategic overview of the issues identified in the scoping study and opportunities for future development.

- **Good Practice Appraisal Tool**

Prepared for the CRCA to facilitate internal stakeholder input on the CRC contribution to research training, and to form the basis for future development.

Documents are available from the CRCA website at:
http://crca.asn.au/the-crc-contribution-to-research-training

Opportunities for future development

Recommendations and opportunities for future development identified in the scoping study are captured in the **Good Practice Appraisal Tool**.

Possible uses for the Appraisal Tool:

- **Internal use by individual CRCs**
- **Collaborative use by a small group of CRCs**
- **Application of the appraisal tool program-wide**

Next steps?

The CRC Contribution to Research Training:

Snapshot of findings and opportunities for future development

The full report:

Palmer, N. (2012). The CRC Contribution to Research Training: Report of a Scoping Study for the Cooperative Research Centres Association. Canberra, Australia: Cooperative Research Centres Association.

Is available at:

http://crca.asn.au/the-crc-contribution-to-research-training

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Is there a perfect measure?

- Addressing poor completion rates and times (and demonstrating good performance) means addressing **inefficient use of full time equivalent candidature time**, not simply variation in elapsed calendar years to completion.
- As with completion rates, these data are also **confounded** by the higher rates of part time enrolment and variations in candidature typical of research students.
- **This kind of variability is not the problem** – research shows a tendency for part-time research candidates to make more efficient use of candidature time (Bourke et al. 2005).
- The key to reporting accurate completion times for CRC engaged research students therefore lies in accurately recording and reporting **elapsed candidature time**.
- The benefits of recording this need to be weighed against the **costs**.