SUBMISSION TO THE HOUSE OF REPRESENTATIVES INQUIRY:
'RESEARCH TRAINING IN AUSTRALIA'

by

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This response focuses on issues of quantity and quality in research training. Members follow national and international developments in research training closely and have undertaken research in the area since 2000.

We focus here on three of your Terms of Reference, Nos. 1, 4 and 9. Although there is considerable overlap, we will take issues of **quantity** and **quality** of research training separately.

QUANTITY ISSUES

Terms of reference 1 & 9. *(Contribution of HDR to Australia's competitiveness, and impact of aging on research capacity)*

The high proportion of Australia's research output arising from research students is significant across all discipline areas. For this reason alone the quantum of PhD training is important for Australia's international competitiveness. However, Australia produces only a fraction of the doctorates per 100 university graduates in comparable countries (on average about half). And there has been a decline over the last 10 years in domestic student enrolments in Higher Degree Research (HDR) – particularly PhDs.

Industry needs plus the needs of academe, the latter due to the age profile of the academic workforce being of particular concern (Hugo, 2008), clearly show that Australia needs more PhD graduates per year simply to replace PhDs in the workforce without allowing for anticipated growth of the economy. The number of Research Training Scheme (RTS) places has not kept pace with our economic demands or with enrolments and completions. Also the RTS funding per student increasingly fails to meet the cost of delivery of HDR programs in both the high band and low band levels.

Term of reference 4. *(Adequacy of support for HDR students)*

Although the number of commonwealth-funded HDR places has been increased, the number of Australian Postgraduate Awards (APAs) available per year needs to be increased to meet funding shortfalls across the sector, where there are now far more university-funded scholarships than APAs available to HDR students.

It is also the case that income support for individual students with APAs (the major scheme) is inadequate. The APA level should be set now at approximately $27,000 per annum as argued by DDoGS and CAPA, and should be more adequately indexed thereafter than it has been in the past.

The duration of APAs at 3 years for PhDs with a possible 6 month extension is also inadequate. The RTS duration is more reasonable at 4 years, and the APA should match this – a 3.5 year award with a possible 6 month extension is recommended.

QUALITY ISSUES

Term of reference 4. *(Adequacy of support for HDR students)*

The concerns here are to ensure that for HDR candidatures: (1) completion rates are maximised, (2) the highest quality outcomes are achieved, and (3) completion times are minimised, but only to the extent of not compromising quality of outcomes.

(1) High quality of supervision is the main institutional contribution to **high completion rates**. Others are provision of facilities and integration into the academic culture of the department, faculty or school. These contributions to improving completion rates are the focus of universities nationally. However, the measurement of completion rates is not the simple matter it may seem of counting *cohort-in-cohort-out*, and this has led to confusion over what completion rates are both at university level and at the national level. It is necessary to track individual students throughout their candidature to obtain accurate completion rates – but this can be accomplished retrospectively. Unless accurate tracking is done, the relative and absolute success of measures taken to improve completion rates are no more than poor estimates. A team from SORTI undertook a small study which examined the records of 700 individual candidates over a ten-year period at one Australian university. All discipline areas were included. We found that 51% of the candidates completed in 4 years or less of full-time equivalent candidature, 66% completed within five years, and 70% completed within 6 years. At the 6-year point all the remaining candidates (30%) had attrited, none remaining as candidates (Bourke *et al*, 2004).

(2) The major immediate outcome of a HDR candidature is the thesis. **The quality of the thesis outcome** is judged by two or three examiners, almost all of whom are external to the university, who give independent assessments of the thesis. Approximately half the examiners across Australian universities are international, providing a sound international benchmarking of Australian thesis quality. We have much to be proud of here, especially in comparison with most overseas practices. The ultimate result of a HDR candidature is *pass* or *fail*, but almost never the latter, presumably because a thesis is not normally submitted for examination until the candidate's supervisor(s) approves its submission. In reference to the 30% candidate attrition mentioned in the previous paragraph, student non-completion is also a safety valve for what may have become an inadequate thesis. Consequently a HDR non-completion is not always a negative indicator of program quality. But given the vast majority of theses submitted for examination pass, sometimes after significant re-writing, some have felt a need for a reliable and valid method of discriminating theses of clearly different quality among the 'passing'

theses. Staff at SORTI are currently undertaking an ARC DG project in cooperation with five Australian universities to determine the extent to which we can develop valid and reliable measure of thesis quality based on examiner reports.

Another effort aimed at achieving higher quality of outcomes is the recent emphasis on the possibility of requiring coursework within PhD candidature. Research is needed into the efficacy of compulsory coursework being part of PhD candidature. Two aspects are potentially important here: the extent to which the coursework assists in successful completion of the thesis, and the extent to which the coursework provides other skills and/or knowledges that are considered useful subsequent to completion and are perhaps desired by potential employers. Research is needed on both aspects.

(3) The Australian PhD candidature is relatively short by international standards, although such comparisons are, in the main, invalid given the different nature of the programs, particularly the USA model. With some effort, it is possible to determine an accurate measure of **time to completion** for an individual candidate, taking into account full-time and part-time semesters of enrolment and periods of leave or other non-enrolment. This is the only reasonable measure to use when calculating average times to completion by discipline, by university or over time. Our recent project covering 804 PhD candidates at 8 Australian universities across all discipline areas indicated that the mean candidacy time was a fraction less than 4 years (7.9 semesters) with a range from 3.5 years for Education candidates to a little over 4 years for Engineering candidates (Bourke *et al*, 2006). Reasons for these discipline differences relate to age and enrolment patterns of candidates.

SUMMARY/RECOMMENDATIONS

Our major suggestions related to the numbers of HDR graduates required are that:

(1) The duration of APA scholarships should be increased to align with the normal RTS time of 4 years, which is also the average time of candidature, and
(2) The APA stipend amount should be increased dramatically for 2009 to approximately $27,000, and should be more adequately indexed thereafter.

With respect to research training quality, one of the major problems facing enquiries such as this one is the lack of valid and reliable measures of the outcomes desired. The major outcomes are a research project (embodied in the thesis) and a researcher or user of research (with a range of skills and/or knowledges learned, whether in the course of the project or by coursework embedded in the PhD program). Both are important when assessing the quality of research training. Even when assessing what one would think to be a simple, third set of training quality measures, that is completion rates and times of HDR candidatures, care is needed. We recommend that:

(3)   Decisions concerned HDR be based on valid and reliable research into thesis quality and the skills/knowledges desired.

REFERENCES

Bourke, S., Holbrook, A. & Lovat, T. (2006). Relationships of PhD candidate, candidature and examination characteristics with thesis outcomes. Paper presented at the AARE Annual Conference, Adelaide, 27-30 November. Available at http://www.aare.edu.au/06pap/bou06655.pdf

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Hugo, G. (2008). Workshop on PhDs in the Humanities, Arts and Social Sciences. UNSW, Sydney, March.