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Dear HESP Executive

Comment on Draft Standards for Research, Research Training and Learning Outcomes

Thank you for the opportunity to comment on the draft standards. In doing so I am drawing upon research undertaken through a number of research grants funded by the Office for Learning and Teaching (OLT). However, the views expressed here do not necessarily reflect the views of the Australian Government Office for Learning and Teaching.

The particular OLT projects upon which I base much of my comment are:

2012 *Coursework in Australian PhD programs: What's happening, why, and future directions?* http://chelt.anu.edu.au/doctoral-coursework

2010 *I've done a coursework Masters, now I want to do a PhD: Can I?* http://courseworkmasters.anu.edu.au/

2007 *The roles and practices of Australian Honours programs* http://aushons.anu.edu.au

2007 *Research skill development: Questions of curriculum and pedagogy* http://www.gradskills.anu.edu.au/

Additionally, I was the external evaluator for the OLT project: *A Best Practice Framework to inform and guide Higher Degree by research training excellence in Australia* by Joe Luca and Trish Wolski (ECU) http://www.olt.gov.au/project-best-practice-framework-inform-and-guide-higher-degree-research-training-excellence-australi from which I had drawn some of my suggestions.

Yours sincerely

Margaret Kiley

Research Training

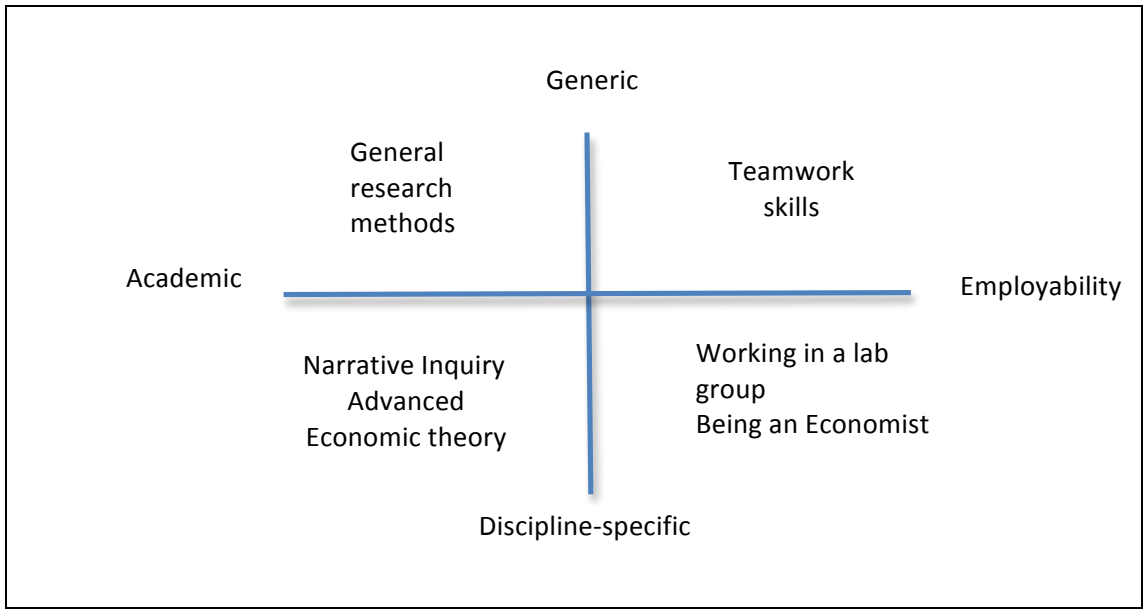
While I appreciate the integrated nature of research and research training, in this response I feel more comfortable focusing more particularly on research training and research training outcomes, rather than research more specifically.

Q3 and Q4: While supporting the broad direction of the proposed research training standards, I think there are number of issues related to #2 which the Panel might like to consider.[1]

Coursework formally included in a course of study that involves research training, whether as a component of or an adjunct to research training, meets the academic governance and quality assurance requirements required of other coursework offered by the provider.

The current OLT-funded project on coursework in the PhD has identified a number of issues which the panel might like to consider in relation to statement number (2) including the question: what is coursework in the PhD? The schema in Figure 1 is provided to indicate some of the variation in what universities are considering to be coursework.

Figure 1. Model of generic and discipline specific academic and employability skills at the doctoral level with examples in each quadrant



Generic/Academic skills are the skills which are often seen as Barrie's (2006) complementary skills, that is a broad knowledge of research methods but not necessarily applied to any particular project or discipline. These skills might be taught in introductory courses to enable potential candidates to appreciate different ways of undertaking research and 'get them off to a good start' and/or to accommodate candidates who are underprepared in research. Previously much of the development of these skills might have relied on the supervisor, but since the 1990s universities have been providing a range of courses, workshops, awards courses, and seminars to address generic research skills**.** *Discipline-specific/Academic skills* would be what Barrie (2006) would classify as translational in that they are embedded

[1] Much of the following has been taken from a recent application to the Office for Learning and Teaching and/or from the recent interim report to the Office on the "Coursework in the PhD" project.

within the discipline. These courses might include advanced disciplinary knowledge or relating research specifically to the discipline. The early framework developed by Willison and O'Regan (2007) and its revision in 2012 aims to chart and monitor students' research skill development and includes six facets of the student research process including inquiring, generating information, critically evaluating, organizing, synthesising and communicating.

Generic/Employability skills would be the generic skills employers generally have identified as being important for the workplace. These skills might not relate to any one form of employment or discipline but the more general "teamwork" criterion noted on Role Statements and as listed in the Australian Chamber of Commerce and Industry *Framework* (2002). *Discipline-specific/Employability skills* are those that are more specific to a discipline or particular form of employment. A simple example might be the writing of a memo appropriate for a Public Service position and writing a research report appropriate for a scientific laboratory. With this example one would be expecting a graduate to be able to more than demonstrate not only the skills of writing but of recognising the need for something that is appropriate to the context. This is a hazy area in that on the one hand it is argued that the university should develop various skills and on the other, it is argued that it is employers' responsibility to develop particular skills.

Duration of courses, completion and funding: Some universities have or are considering placing their formal research processes coursework in the first year (FTE) of candidature with the expectation that the courses will be completed successfully to allow progression. However, the candidate will not be taking out an award for the coursework unless they withdraw from their doctoral program. If this occurs, the student will be asked to enrol in a Graduate Certificate for which they will be offered Advanced Standing. Funding of course is an issue as the coursework would have been done under RTS funding but the Graduate Certificate taken out under a fee-paying structure.

Other universities are seeing their first year coursework as being specifically related to advanced disciplinary knowledge. For example, most Economics PhD programs in the Go8 universities require successful completion in first year of courses such as micro-economics, macro-economics, and econometrics before the candidate can progress to the research component of their doctorate

Throughout-candidature coursework: Some universities are looking at developing a program for their candidates that includes the development of some academic, and some employability skills throughout candidature. It is difficult to know how these courses can be classified unless the candidate takes out both a PhD and a Graduate Certificate in Research Development (or some such) at the end of candidature.

Structuring courses without being coursework: Some universities are providing candidates with a structured approach to a range of courses, for example, using a Learning Plan, which in total will cover aspects of all four quadrants in Figure 1, and throughout the duration of candidature but this will not necessarily equate with the completion of a program/award separate from the doctorate.

In summary, the emergence of coursework in the PhD has brought with it many curriculum, pedagogical and organizational complexities which are only now being worked through by universities. I suggest that the Panel might like to consider some of these issues in their deliberations on the standards related to coursework in the PhD.

Research Training Learning Outcomes

Q5 and Q6 While I generally support the proposed outcomes, I would particularly like to comment on the omission of any mention of employability skills.

Keeping in mind Figure 1 above, it is of interest to note that in the Panel's draft outcomes there is no specific mention of employability skills. This omission, in my view, disregards much of the current debate on the purpose and outcomes of research education.

In Australia, learning to be an independent researcher is part of the national innovation agenda funded by the Research Training Scheme. Currently we have nine doctoral holders per thousand of the employed population (Ewing, Pers Com) an increase from the 2007 figure of 7.8 reported by Auriol (2007). However, the challenge has been given to universities to educate these future researchers not only to be well-rounded researchers, but also to develop the knowledge, skills and attitudes suggested by employers that they need/want of graduates, all in four years or less.

As outlined in *The changing PhD: Discussion paper* (Group of Eight, 2013) and *Research skills for an innovative future: A research workforce strategy to cover the decade to 2020 and beyond* and the accompanying *Research workforce strategy: Discipline case studies* (Department of Innovation, 2011) universities have looked at alternative models and programs at the doctoral level often in response to the:

- Diverse range of doctoral entrants regarding age, type of enrolment (part-time/full-time) previous academic and employment experiences and home location
- Adequate preparation and education of doctoral candidates to become skilled, independent researchers
- Preparation of graduates to be "employment-ready"
- Increase in the number of international candidates
- Continuing pressure for completions within four years
- Actual employment possibilities for doctoral graduates.

Much of the recent discussion on coursework in the PhD focuses around employability, an issue which has gained momentum as fewer graduates enter an academic position (Neumann & Tan, 2011). As Williamson (2013) reported at the recent *Research Workforce* forum, in Australia there are 4000 graduates per annum in STEM[2] but only 500 jobs in academia. And while traditionally there might have been an implicit understanding of what university employers wanted in their PhD-trained employees, increasingly universities are being asked to prepare candidates for a multitude of roles and employment possibilities outside academia.

The work of Cryer (1998) very clearly demonstrated the importance of reflection in skill development. When working with groups of PhD and MPhil candidates who were nearing the end of their candidature she asked them what skills they had developed that would make them attractive to employers. Most of the participants could think of little more than the content knowledge of their research project—that was until she prompted them with questions such as: "Have you learned anything about communicating your work, or solving problems?"

[2] Science, Technology, Engineering and Mathematics

However, before even getting to the end of candidature and reflecting on what has been learned, the idea of self-assessment at the commencement of candidature is also critical. In terms of employability skills this is particularly important given the data on our doctoral candidates. For example in a survey of Australia doctoral candidates in 2010, respondents reported that in the year prior to enrolling in their doctoral program 56 per cent had been employed (45 per cent FT, 9.5 per cent Part-time/casual) (Edwards, Bexley, & Richardson, 2011). Furthermore, given the ages of our doctoral candidates, from the early twenties in some of the sciences to the mid-forties in some social sciences and humanities, and with a national average of 33, many of our doctoral candidates commence their research degree with considerable employment experience.

In light of this one might ask the question, “Why is it that we then have what is perceived to be a lack of employability skills in our graduates when so many of them were employed prior to commencing their research degree?” One possible lead to answering this question might relate to the linking noted in the model earlier, that is, of research skill development with employability skill development.

The 2008-9 Graduate Skills study (Cumming & Kiley, 2009) identified three complementary ways in which candidates might develop various skills:

- Structured/formal approaches such as courses and subjects;
- Semi-structured approaches such as journal clubs and writing groups, and;
- Unstructured approaches, for example, involvement in professional associations and workplace learning

In summary, I would like to suggest that the Panel, keeping mind that while many of our PhD candidates enter their award with advanced professional skills and knowledge, one of the learning outcomes from the doctoral program might well relate to employability within, and outside academia.

I would be happy to discuss any of these matters with members of the Panel if this were thought to be helpful.

Margaret Kiley
July 2013

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