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Doctoral employability as read in job adverts (0121)

Programme number: C4

Research Domain: Academic Practice, Work and Cultures

Warnings about the state (and sustainability) of the academic workforce have been repeated over the last decade (see for example Edwards et al. 2011; Hugo, 2005). Typically, these outline the aging nature of the workforce and the 'leaking pipeline' whereby newer researchers leave at key career junctions due to job security and work-life balance issues.

It can be difficult to obtain definite data on graduates' employment destinations. For example, figures from the Australian 2006 census showed the occupation of 26% of doctoral holders as 'university and vocational education teacher' (Edwards et al., 2011) but overall 45% reported working in the education and training industry (although for some fields of education this was as low as 26% - Edwards, et al., 2009). Moreover, a Graduate Careers Australia (2012) report found that 38% of full-time employed, recently completed research masters and PhD graduates were employed in the higher education sector. This is in contrast to the 54% of current PhD candidates who expressed an intention to follow an academic career upon graduation (Edwards et al., 2011).

The large proportion of graduates working outside academia highlights that the research degree needs to be more than a method of academic reproduction. It must be responsive to the needs of more than one sector or voice (see for example Deloitte, 2012; League of European Research Universities, 2010; The Allen Consulting Group, 2010). For example, governments around the world forecast a need for large increases in the number of researchers required to achieve innovation and growth targets and remain competitive. Encouragingly this is infused with a goal to improve the mobility of researchers. Mobility not just geographically, but between sectors, with researchers moving seamlessly from university to industry and back again (see for example Deloitte, 2012).

The calls to broaden doctoral education, however, contribute to what Kendall (2010) calls a 'crisis narrative'. Doctoral candidates, as highly literate members of society, will tend to find work of some kind, masking the fact that it may not be the work that they have trained for or would prefer to be doing. This crisis narrative reflects a broader anxiety about whether research education is fulfilling its aims - or even what these aims should (or could) be.

Without triangulated data it is difficult to know if we are trying to solve the wrong problems, or solve the right problems the wrong way. The approaches thus far have centred on what universities report to be best practice, employer and government perspectives in relation to the skill sets they value/require, and what graduates say they have learnt.

The League of European Research Universities, for example, posits that research intensive universities should be developing doctoral candidates in the broad areas of intellectual skills, academic and technical skills, and personal and professional management skills (LERU, 2010). While a study by The Allen Consulting Group (2010) found that almost 72% of sampled Australian employers hired researchers (not just PhD-qualified) to 'advance the body of knowledge' and 'access specialist knowledge and/or skills'. Researcher skills gaps noted by employers centred on soft skills and issues of skill/knowledge translation outside the academic setting.

Doctoral candidates and graduates themselves identify gaps in their training or report that their doctorate was not closely aligned to their subsequent work (Edwards et al., 2009; Edwards et al., 2011). For example, a study of current research students found that fewer than 40% reported that their degree was ('very much') preparation for conducting applied research and that it hadn't ('not at all') prepared them to work outside academia in either a non-related field (24%) or a related field (11% - Edwards et al., 2011).

Approaching the issue as one of professional development, rather than employability per se, the Vitae (2010) Researcher Development Framework provides another means of considering researcher skills. The four domains (knowledge and intellectual abilities, personal effectiveness, research governance and organisation, and engagement, influence and impact), twelve sub-domains, and descriptors encourage a consideration of varied skill sets and their relevance for an individual and their career.

The work undertaken to date suggests sets of attributes and skills that key stakeholders regard as important for doctoral graduates. But these lists are often defined through working groups or employer self-reports in relation to the broader consideration of employability. Does this leave us with a gap that we aren't considering? Are these, in fact, the skills upon which employment decisions are made? When it comes to specific jobs, and the work required of a graduate by an employer, how are these skills expressed as selection criteria? And does this match with the graduate attribute taxonomies outlined by industry, government, and the literature?

To address this gap job advertisements were analysed. Higher education sector jobs were found through university employment pages and included both academic and professional roles in which a doctorate was listed as a qualification. Jobs in other sectors were found through a search of the job site [www.seek.com.au](http://www.seek.com.au) and the jobs board at the [www.theconversation.au](http://www.theconversation.au), using 'PhD', 'research', and 'researcher' as keywords. A content analysis was then undertaken to determine the broad types of work required and the skills sets sought after.

The results of this analysis suggest the types of work that doctoral graduates are targeted for. This leads to a consideration of what do employers really want when it comes to advertising jobs and settling on a set of explicit criteria? And to what extent does this methodology shed light on between- (university versus non-university) and within-sector (academic versus professional roles within universities, field versus field within industry) differences?

The messages implicit in these job adverts suggest a refocusing and debate about curriculum development and pedagogy in the doctorate. Should we be providing doctoral candidates with the opportunities to upskill in the areas that will assist their search for post-graduation employment? What is it we are trying to accomplish with doctoral education and for whom?

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