BAR08980

Professionalising the Research Higher Degree Curriculum?

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Paper presented in a symposium entitled 'Re-imagining higher education pedagogies'
AARE conference 2008, Brisbane

Some university programs have a relatively long history of being perceived as professional degrees by virtue of their discipline, such as medicine, architecture and law. Increasingly, however, graduates of all university degrees are seen as possessing a professional skill set when compared with others, such as those in trades. This trend is also evident in higher degrees by research (HDR). The increasing favour of a professional skills set in large part reflects growing interest around the world in the role of research degrees in labour markets and economic prosperity (Chambaz, 2008; DEST, 2003; Roberts, 2002). So-called generic skills, such as communication, teamwork, problem solving, lifelong learning, intercultural understanding, entrepreneurship and leadership, are often deemed necessary to professionals and are considered favourable to the needs of a globalised knowledge-based economy. Scholars such as Margot Pearson have seen this shift as an opportunity to re-situate HDR as a form of professional education in the practices of research and scholarship, with the aim of assisting candidates to become "…autonomous professional practitioners for the future" (1996: 304). This raises a number of important issues for research education, which we aim to identify in this paper. While a range of scholars has previously noted several of these issues, as we acknowledge below, we aim to draw together key issues for interrogating the notion of research degrees as a form of professional education.

Research as a profession?

Calls to re-situate research degrees as professional education tend to take for granted what constitutes a profession. For instance, to what extent or in what ways can HDR graduates be perceived as belonging to a profession? More specifically, to which profession would they belong, for example, is 'researcher' a profession? Traditionally, a profession has been conceived in terms of provision of a service based upon a systematic, scientific body of knowledge (for example, Parsons, 1968). Societies have rewarded those who possess and use such knowledge with heightened status and authority, as well as increased remuneration for providing a valued service. For their part, professionals have been expected to exercise informed judgement, act ethically, and maintain confidentiality in ways appropriate to provision of the particular service.

Against this idealised conceptualisation, several scholars have argued that gaining status as a profession may rely less on specialised knowledge than on reinforcing existing advantage or providing perceived benefits for the practitioners involved. For example, in his analysis of professionalisation in teaching, Thomas Popkewitz makes the following observation:

> The Anglo-Saxon word 'profession' is brought into the language of many countries to describe the social formations of work within the middle class, the increased importance of expertise in the process of production/reproduction, and specifically, in teaching, the effort toward upward mobility. (1994: 2)

Popkewitz also points out that the term, profession, varies considerably in meaning across cultural and historical contexts.

Jeff Hearn (1982) provides an historical analysis of the formation of a number of professions, pointing out that the 'established' professions, such as medicine and law, have traditionally been dominated by men. Moreover, he argues that professionalisation displaced women from key roles in occupations such as healing, mediation of disputes, managing birthing and care of the dead. Although women had initially engaged in occupations such as these in considerably larger numbers then men, these occupations came to be dominated by men as professional status was sought and gained. While shifts to redress a balance in the numbers of men and women in a range of professions occurred subsequently, men continue to occupy most senior management positions in the majority of professions.

Not only can we call into question traditional conceptions of professionalisation, but Mats Alvesson argues the claims to knowledge that are seen to characterise professions have several potential roles and need to be problematised:

> Knowledge, i.e. claims of knowledge in social contexts, play various roles, such as being: (a) a means for creating community and social identity through offering organizational members a shared language and a common way of relating to themselves and their world; (b) a resource for persuasion in marketing and interactions with customers; (c) a means of creating legitimacy and good faith with regard to actions and outcomes; and (d) obscuring uncertainty and counteracting doubt and reflection. This last point indicates that 'knowledge' and 'knowledge work' may lead to the opposite of what they claim—to ignorance and uncritical attitudes. (2001: 882).

Moreover, the notion of a systematic, scientific 'body of knowledge' has been challenged on the grounds that knowledge cannot be regarded as fixed and foundational, but is situated within particular settings, as well as constantly changing across contexts and over time (for example, Lave, 1993). In a similar vein, interest in the embodiment of knowledge in particular action within specific settings has challenged the notion that knowledge transcends the body in ways that allow decontextualisation (for example, see Bresler, 2004; Dall'Alba & Barnacle, 2007; Williams & Bendelow, 1998). Not only have conventional notions of knowledge been challenged, but a blurring of boundaries has occurred as many occupations previously not attributed professional status have strived for, and been granted, this status, such as teaching and nursing. Moreover, the increasingly complex knowledge base and remuneration levels in many trades call into question previous demarcations between trades and professions.

Despite these potential challenges to the notion of research as a profession, the research degree curriculum is increasingly being oriented toward identifying and promoting the development of a professional skills set. In this process, slippage is occurring in such a way that professional skills are equated with generic skills. In the case of research degrees, the desirable skills set is conceived in terms of practices of research and scholarship deemed to be 'generic', such as critical thinking, communication, and teamwork. Somewhat ironically, while professionals historically have been tied to a set of shared, codified practices relating to the particular service they are seen to provide, generic skills are conceived independently of the specificity of such a set of practices.

The status of professional knowledge

Alongside questions concerning what constitutes a profession and professional knowledge is a related set of issues concerning the status attributed to professional knowledge. It is ironic that increasing interest in professional skills and the professionalisation of research degrees is occurring in a context in which the professions are said to be suffering a crisis of confidence (Schön, 1983, 1992). Donald Schön refers to growing scepticism about the

beneficence and practical utility of professional knowledge, which he claims has led to reluctance to grant professionals the autonomy, licence, and control they traditionally enjoyed. For Schön, this crisis of confidence is largely due to a view of the professions that emerged through the technical rationality that is the legacy of nineteenth-century positivism. This view treats practical knowledge as lacking the status of professional knowledge until it becomes formalised through scientific research (see Usher et al (1997) for elaboration). The result, according to Schön, has been a widening gap between thought and action, theory and practice, and the university and everyday world. This epistemology of techno-rationality aligns with the increasing pressure that has been exerted on higher education institutions from government, industry and the broader society to contribute more directly to knowledge work and innovation through educational programs and research. Research degree programs have also been targeted within this culture of accountability. Attempts to identify industry relevant generic capabilities, including for research degrees, are one response to such efforts.

Schön claims that valuing knowledge which has been verified through research over knowledge gained through practical experience without such verification has led to two dilemmas for the contemporary research professional: that of rigor or relevance and of abandonment and alienation. Of the former, Schön says the following, evoking a topographical image:

> Researchers may choose to stay on the high, hard ground where they can conduct research of a kind the academy considers rigorous, though on problems whose importance they have come increasingly to doubt. Or they may go down to the swamp where they can devote themselves to the social problems they consider truly important, but in ways that are not rigorous in any way they know how to describe. They must choose whether to be rigorous on the high ground or relevant in the swamp. (1992: 120)

It is not difficult to imagine how this first dilemma of relevance would lead to the second dilemma, that of alienation. Schön argues that practitioners in the field, for want of a better phrase (given that academics and academic researchers are also practitioners), increasingly feel uncertain about the promise of academic research to effect positive change within the world, given its apparent dislocation from everyday issues and concerns. Added to this, Schön argues that alienation greets those practitioners who attempt to adopt academic practices as they soon "…discover that its appropriation alienates them from their own understanding, engendering a loss of their sense of competence and control" (1992: 120). To extend Schön's topographical image, this leaves practitioners stuck between a rock and a hard place: in the search for rigour they are left with alienation. But they are not merely victims. Schön argues that practitioners are often in collusion with the forces of their own undermining. Teachers, for example, tend to be disconnected from what they know and, moreover, valorise knowledge that lies outside themselves, or that appears more general, abstract and theoretical. For Schön:

> Teachers are cut off, then, both from the possibility of reflecting and building on their own know-how and from the confusions that could serve them as springboards to new ways of seeing things. (1992: 121)

Is the situation similar for research degree graduates? To what extent are research curricula promoting the conditions for a schism between theory and practice? More specifically, are researchers being equipped to engage with the professional knowledge that arises through practice? Given the current interest in generic skills development within research degrees an opportunity is arguably available to address such issues. Is this being taken up – are research degree graduates able to reflect and build on their own know-how?

The value and contribution of the research degree

Given the increasing interest in professional knowledge and skills, could the crisis that Schön wrote of over 15 years ago be over? Does the current interest in transferable, professional skills within higher education provide an opportunity to re-engage with knowledge that arises through practice, despite the techno-rationality that is evident within the way such skills are often conceived?

At the heart of these issues is the question of the value of the research degree and how those with a research education might contribute to the workplace and society, more broadly. Research degrees require the candidate to undertake a sustained, in-depth investigation of a problem in order to make a significant contribution to knowledge. The changing expectations of government, industry and the broader society with respect to the research degree are widely recognised, particularly in regards to the now firmly established demands for improved accountability within what has been called the 'performance culture' that pervades higher education provision across the globe. As Erica McWilliam and Parlo Singh (2002) note, this has meant the research higher degree curriculum, once almost entirely tacit and determined by the supervisor in consultation with the candidate, is being informed by multiple 'external' factors, particularly disciplinary and professional / industrial communities. A global, knowledge-based economy and the demand for knowledge workers has become a key factor in determining what HDR candidates need to learn and why:

> The 'what' and 'why' of a new research training curriculum has moved beyond knowledge production for academic apprenticeship not simply because of policy imperatives but for more profound reasons to do with the larger context in which HDR policy initiatives are being framed. (McWilliam & Singh, 2002: 6)

The skills arising from traditional research higher degree curricula, what McWilliam and Singh describe as "strongly insulated forms of singular disciplinary knowledge" (2002: 4), are not the same as those required by the knowledge worker. Such knowledge includes disciplinary knowledge but also exceeds the specialisation this affords to include a range of apparently transferable generic dispositions, skills and capabilities considered necessary for doing knowledge work and contributing to innovation. Universities in Australia, the UK, Europe and North America are now seeking to graduate researchers employable both within and beyond the conduct of research, with high-level industry relevant research and generic capabilities. As such, these graduates are to have the ability to translate their research skills and knowledge into economic, social and cultural returns (Chambaz, 2008; Maki & Borkowski, 2006; The Rugby Team, 2007; Tennant, 2004; Usher, 2002; UKRC & HRB, 2001).

Diversity in researcher careers

The question of the purpose of research education, whether it is aimed at the production of disciplinary / theoretical knowledge or other ends, is particularly pertinent today considering the diversity of graduate careers. Both in Australia and internationally more than half of all doctoral graduates will leave the higher education sector upon completion of their degrees. Moreover, only about a third of graduates will undertake careers dedicated to research-based work or to producing new scientific knowledge, whether within industry or academia (Neumann et al, 2008; UK GRAD Programme, 2007; UQSRC, 2007). This diversity of doctoral graduate career pathways has led to recognition of the need to distinguish research from research*er* careers by recognising that researchers can potentially aspire to a large range of occupations, from those that are primarily research based to others in which research – as traditionally conceived – may play no part at all in daily activity (CRAC, 2006). This perhaps challenges the notion of research as a profession, although graduates from most professional education programs also enter a range of careers following graduation.

Interestingly, despite this diversity of career pathways, studies suggest that doctoral graduates, within all industries, regularly draw on their research knowledge and skills in their day to day work (UQSRC, 2007). In other words, even though the majority of doctoral graduates do not have research-based careers, many nonetheless regularly utilise research knowledge and skills.

This suggests that conceiving of researchers in terms of the production of scientific knowledge is particularly limited for understanding how research knowledge and skills actually get used. It also raises interesting challenges in the context of concerns regarding a widening gap between theory and practice and a general undermining of professional knowledge. The ubiquity of calls for 'evidence based' solutions to problems could be seen as an example of a tendency to value theoretical or scientific over practical knowledge. Whilst such calls could be considered to signal positive recognition of the value of research and its products to the economy and society, more broadly, they also challenge the authority of practitioners: professionals such as teachers, doctors, social workers etc who work 'at the coalface' so to speak. Without the formalisation of scientific knowledge, the knowledge of professionals, or that which arises through professional experience, lacks the status of what is considered to comprise evidence.

Increasingly it is being recognised, however, that innovation in business and industry is not limited to production of new scientific knowledge through research and development activities and commercialisation (BCA, 2006a&b; Cutler, 2008; NESTA, 2007). Innovation involves the creation of additional value through the application of knowledge, whether old or new, or, as Terry Cutler puts it more elegantly: "…covers the space where creativity and practice meet" (2008: 47). 'Hidden' innovation is organisational or enterprise based and can occur in all parts of an organisation to function in a multiplicity of ways, such as through the creation of new products and services. A broader conception of innovation that includes often hidden organisational forms opens up the potential for innovative practices to be identified within a wide range of employment contexts and careers.

Re-engaging with the practice of research

Beyond these issues and concerns, we are interested in the opportunities nascent within the changing research higher degree curriculum. Does the increasing orientation of the research higher degree curriculum toward the development of transferable knowledge and skills provide an opportunity for re-engagement with the practice of research? To put it another way, despite the often instrumental, reductive view of generic capabilities, does their emergence into the field of research education open an opportunity to re-engage with research practice? In some respects this could be seen as an odd question to ask in the context of research education as the doctorate, in particular, traditionally has been considered a pathway to a research career, whether academic or industry based and, more specifically, a working life dedicated to the production of scientific knowledge. Historically, research and knowledge production have been considered synonymous. But has this focus on scientific or theoretical knowledge produced through research meant that the practice or craft of research has been downplayed? Perhaps more to the point, has it meant that what has gone unrecognised, or at least under-recognised, is the extent to which research is itself a practice whose products are practice-based?

While research knowledge and skills have always been considered important components of a research education, a shift is occurring in the nature of the knowledge and skills that are considered of value and how they are learnt. Historically, research has been learnt through the process of doing research and any coursework has typically been limited to research methods and techniques. Now we see a growing emphasis on generic and transferable skills within the research higher degree curriculum and an increasing array of stand-alone courses and workshops being offered. This has led to much debate within the literature, particularly

regarding the potential for the decontexualisation of skill development from the practice of doing research. There are many unanswered questions concerning just how generic and transferable so-called generic capabilities really are, and whether and how they can be learnt through direct instruction (Borthwick & Wissler, 2003; Gilbert et al, 2004; Lee, 2005; McWilliam & Singh, 2002). While there is a sense in which skills such as critical thinking are valued across disciplines, it could be argued that these skills are inextricable from subject specific knowledge and, as such, are not necessarily transportable across varying fields of knowledge. For instance, critical thinking in chemistry differs in important ways from critical thinking in philosophy. By denying the constraint of subject knowledge, however, the rhetoric around generic skills untethers the relation between knowledge and practice; as if knowledge can emerge from nowhere.

A key issue for generic capabilities initiatives broadly, both within and beyond research degrees, is the process of so-called knowledge and skills 'acquisition' and subsequent 'deployment'. A number of scholars argue that some approaches to generic capabilities development do not assist with the difficult task of identifying an appropriate practice context. When the focus is on knowledge transfer, rather than its use in practice, there is a danger that embodied knowledge is rendered unproblematic and seamless (Dall'Alba & Barnacle, 2007; Dall'Alba & Sandberg, 2006).

The challenges to the recent trend towards professionalising the research degree curriculum of the kind we discuss above can be seen as extending related limitations in earlier forms of research education. Like many others, Pearson had doubts about the training model being applied to research degrees in the mid-90s and still in wide use today (Barnacle, 2005). Some time ago, in the turn toward professional skills development within research degrees, she perceived the potential for researchers to develop a greater capacity for self-evaluation and reflection, borrowing from Schön's strategy of reflection-in-action. In contrast, the notion of 'research training' suggests a focus on technical skills rather than the craft or artistry of research required for genuine skilful performance. It also reveals deep conflicts within the very concept of the research degree in terms of whether it is confined to mere training in research or involves the conduct of research in order to make an original contribution to knowledge. Elaborating Schön's account of the artistry of professional practice Pearson argues:

> …professional knowledge and skill involves matters of 'feel' and judgement, of knowing when to act, of being able to frame problematic situations and fashion in new approaches, rather than just applying established routines. (1996: 307)

As Pearson also recognised, however, there are dangers, too, involved in foregrounding the know-how or craft skills of research. An over-reliance on what can be called the 'tacit knowledge' of researching and scholarship can act as a potential barrier to change by reinforcing highly individualistic conceptions of research practice and the supervisory relationship in which scrutiny is deemed inappropriate.

Schön develops two key concepts to describe knowledge that emerges through practice: 'knowing-in-action' and 'reflective practice'. These are instructive for understanding skilful research and thereby exploring what it might mean to be a skilful researcher. Schön's work in this regard emerges as part of an ongoing effort to counteract the privileging of abstract knowledge and has some affinities with other approaches advocating a 'return to practice', such as activity theory, communities of practice and actor-network-theory.

Knowing-in-action refers to the seamless integration of thought and action. In the research context it would comprise the kind of thinking that goes on through and during researching in contrast to the 'looking back' that occurs before, during or after research. It recognises that there are some important respects in which the 'know-how' of researching cannot be taught

in the sense of direct instruction and depends, instead, on informed trial and error in practice and the development of sensibility. As a researcher develops proficiency, for example, decisions get made and steps are taken in a seamless exchange between thought and action in that thinking gets embedded in, rather than separate from, the research process. For Schön, when knowing is *in* the action in this way it is revealed through " …our spontaneous, skilful execution of the performance" (Schön, 1987: 25). Judgement becomes more intuitive than cognitive, or more tacit than explicit.

Reflective practice refers to the relation between practitioner and context or, in this case, researcher and research context. Schön's account of reflective practice renders the thinking, organising, and making involved in day to day research activity a "…reflective conversation with the materials of a situation" (1987: 42). Researchers work with artefacts, whether symbolic or material, in order, ultimately, to bring new things into being: new ideas, ways of understanding, products, three dimensional objects, etc. Schön's account of reflective practice suggests that this can be understood as a conversation, or dialogue, between researcher and the problem the researcher is investigating. It is this dialogue that informs and orients the directions and outcomes of a research project. This situates researchers both within this dialogue and outside of it, as they struggle to oversee something of which they are also a part.

When combined, these two constructs suggest a model of skilful research practice involving the integration of thought and action, as well as dialogue between researcher and context. However, Schön briefly acknowledges, but largely overlooks, the broader social, cultural, material context beyond the immediate situation within which knowing-in-action and reflection are embedded and given meaning. Other accounts of knowledge generation that focus on practice extend greater significance to the actual context for, and contributors to, the process of researching, such as actor-network-theory (ANT), sociocultural theory, activity theory and communities of practice. ANT foregrounds the idea that knowledge and skills are always material and materialised (Latour, 2005; Law, 2007). The implication is that thinking and acting are always oriented, either by encouragement, attenuation or truncation, by relationships with a broader set of elements, or what ANT would call a network of other actors. For the research practitioner this means that moves will be oriented by, for example, what participants were prepared to disclose in focus groups; the magnification possibilities of an electron microscope; the conceptual schema provided by a particular philosopher or philosophy; or the default configurations of digital animation software. This also challenges individualistic conceptions of research practice – which Schön arguably doesn't do so successfully. While research degree candidate learning is largely self-directed in that constant instruction is not received from supervisors, direction is received, both explicitly and implicitly, from all the 'materials' – symbolic and otherwise – that populate the research landscape. Accounts of knowledge generation, such as those provided by Schön, John Law, Bruno Latour and others, offer various theoretical frameworks for examining how HDR candidates learn to engage in the practice of research.

Conclusion

The issues for research education we have identified above give rise to a central question as to whether calls for changes to the research curriculum are leading to closer scrutiny of the processes by which HDR candidates learn to engage in research, including efforts to enhance these processes. Or are moves to identify and promote the development of generic dispositions, skills and capabilities having the reverse effect? Not only is the notion of a profession taken for granted in much of the literature that argues in favour of professionalising the research degree curriculum, but the way in which this curriculum is framed in this literature is in need of critical interrogation, as we discussed above.

Paper Presented at the AARE Annual
Conference, Brisbane 2008
Australian Association
for Research in Education

If we are seeking graduates with the ability to work creatively and contribute to innovation, are generic skills really what are required? Skilful practice and know-how arise within the specificity of particular disciplinary, social and technological practices. If, as a society, we want to benefit from the research knowledge and skills of HDR graduates, then we need approaches to research education that are neither reductive nor instrumental. An instrumental, reductive view of generic capabilities development is necessarily detrimental to efforts to address skilful research practice (Barnacle, 2004; Bowden et al, 2000; Manathunga et al, 2007; Pearson & Brew, 2002). Given the diversity of researcher career pathways, it is particularly important that a contribution to knowledge and practice be recognised both within and beyond the production of scientific knowledge. This may be particularly revealing in the case of the workplace activities of HDR graduates as the majority do not actually do research, or create new scientific knowledge, in their day to day working lives.

While it is reasonable to expect from research education that it provide preparation for contributing to economic, social and cultural spheres, a question remains as to how appropriate it is to conceive its purpose by assuming a match with specific employment. Even if this were desirable, such a match is impractical given the diversity of research graduate employment. A focus on generic skills undermines the nurturing and engendering of a broad range of skilful practice. This raises one of the key issues that this paper has sought to highlight, namely, that rather than promote skills development, generic skills initiatives may render graduates less capable of engaging with knowledge that arises through their own practice and know-how. If, on the other hand, we assist research graduates to engage in inquiry in ways that inform their practice and develop their know-how, we enhance their potential contributions to society. Achieving this depends upon a curriculum that reinforces skilful practice in ways that include self-awareness about the limitations and possibilities inherent in our ways of inquiring.

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