Careering Past the Doctorate: supporting the career progression of doctoral students

As the focus of researcher development shifts from the production of new knowledge to that of training to become a researcher, with more emphasis on the development of professional skills, the need to see the doctorate in a broader perspective has become apparent. Research students must now address these skills more explicitly, with more emphasis on career development, possibly outside the academy. Doctoral training has become more complex, requiring input from a range of professionals. Roles have inevitably become more differentiated, resulting in tensions between academics and professional researcher developers that at times impacts on students' experience. This paper will discuss the professional development needs of doctoral students from the perspectives of an academic with responsibility for developing researchers and a careers consultant specialising in researcher development. We will discuss our joint experience of running a professional development scheme, the challenges we encountered, and the issues we identified. The strengths and weaknesses of each perspective will be explored, and some possible solutions considered.

Doctoral education in the UK is changing, with more emphasis on professional development and more attention on career opportunities outside the academy. The reasons for this are well understood: numbers of doctoral students have doubled over the past ten years (Lee and Danby, 2012), the number of academic posts is shrinking (Gabrys and Beltechi, 2012), and the doctorate is becoming increasingly valued in the non-academic professional world (Barnacle and Dall'Alba, 2010). While doctoral education must still focus on the traditional aspects of research training, it must now widen its perspective to address the range of skills and abilities associated with effective professionalism. However, while the academy recognises the need for support for professional development, it has not been particularly good at implementing it, with a tendency to adopt a somewhat informal approach (Raddon, 2011). Students[1] themselves seem to be aware of the need to address issues of employability, but are less good at identifying the skills they need, as well as their own level of ability (Golovushkina and Milligan, 2012). The academy too is unclear on this. Anecdotally, PhDs perform at a high level in non-academic careers. However, while employers can identify the qualities they value (National Centre for Universities and Business, 2010), there is little published data on the specific skills developed in a PhD, or how effectively they are translated to other contexts (Yachnin and Yetter, 2014). Nevertheless, the need for explicit professional development is apparent. In order to address the issue, it has become increasingly clear that a more precise, formal approach is necessary.

Institutions have responded by the introduction of researcher development programmes designed to address this broader spectrum. These have taken various forms, from university-wide graduate schools, largely run by professionals with a taught curriculum, to more informal faculty or department based provision, or in some cases, a mixture of the two. A recent development that has been adopted by all Research Councils is the Doctoral Training Partnership (DTP) in which a consortium of research institutions collaborate to provide best practice. The intention is to provide a breadth of professional development training, including opportunities for internships that might not be feasible on an institutional level. As these programmes have become established, however, there has tended to develop a division between research development, supported by academic supervisors, and

[1] PhD candidates should not be viewed as students in the traditional sense, and we would normally refer to them by the more professional term of researchers. However, in this paper, it is necessary to make a distinction between students in particular and researchers in general, and we will therefore use the term students throughout to mean doctoral students.

professional development delivered by dedicated researcher developers, including careers advisors. That each group should take the lead in their own area of expertise is, of course, appropriate, but the separation has led to distinct paths of delivery. This paper will consider the nature of this separation, examine the reasons for it, and explore possible alternative approaches. We will discuss a specific example of collaboration between an academic and a researcher developer, and will attempt to distil some general principles from our particular experience.

Approaches to professional development

Changes in researcher development have come about as a result of the evolution from the original Humboldtian model, focused on the production of new knowledge and designed to make provision for the development of new researchers, to the modern doctorate considered as *preparation for employment in the new knowledge economy* (Taylor, 2012, p130). This requires the development of a wider range of skills. The imperative towards an original contribution remains the standard of a PhD, and students must still develop expertise in research, together with the related professional skills that constitute an excellent researcher. However, these are now supplemented by more generic, transferable skills. Whereas it used to be accepted that these were implicit in the process of becoming a researcher, they are now articulated explicitly. The most notable version of this is the Researcher Development Framework (RDF) developed by Vitae (https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework). The RDF identifies a set of generic descriptors, organised into four domains, each with a number of sub-domains in which specific skills are ranked in five phases of development. Researcher development programmes use this or similar frameworks as a means of matching individual needs to institutional provision.

For PhD students, supervisors still provide the primary support. Academic supervisors generally have well-established research careers themselves, and are therefore highly qualified to guide their students' academic progress, both in terms of developing their own research and progressing in the world of academia. Traditionally, they have adopted the master-apprentice model of delivery, in which the supervisor-student relationship is central. Here, the supervisor's role is to direct the student's research towards the production of a thesis and the emergence of new knowledge. The student, by emulating the supervisor, gradually acquires the professional skills of an effective researcher. As the nature of the doctorate has changed, however, so has the role of the supervisor. To some extent, this is caused by the increased numbers of doctoral students, while supervisory capacity has remained almost static. Supervisors have to supervise more students, often at the periphery of their subject expertise, and group supervision is increasingly prevalent. More significantly, the new doctorate, with its increased emphasis on professional development, demands an expanded set of skills. Many supervisors do not see this as part of their role, and are not prepared to extend their own development to include these new aspects. Of those who do, many are, nevertheless, reluctant to become actively involved (Walsh et al., 2010). While there may be good reasons for this, for example, time constraints, or demands of other commitments, the challenge for researcher development is to change the culture of the academy to adopt the notion of the PhD as preparation for a multiplicity of possible careers (Yachnin and Yetter, 2014).

Researcher developers have expertise in delivering professional skills and career development programmes. Careers specialists supporting PhD students have knowledge of career opportunities outside the academy. They often have a broad network of professional contacts to draw on, through employer and alumni relationships. Researcher developers generally work in a separate environment to the academic situation, and tend to perceive their role as parallel to that of the supervisor. They also have a different view and experience as to how professional development occurs, with an emphasis on participation in short

courses that generally focus on the acquisition of specific skills that accumulate towards an overall competency.

The difference between the two is partly due to the nature of their different specialisms, but also to their different methods and approaches, and a focus on different outcomes. The focus for supervisors is the production of a thesis that incorporates the knowledge contribution. Researcher development occurs through the one to one relationship with their students. They act as guide rather than teacher, making suggestions, offering feedback, raising questions and when appropriate, providing answers. In addition, they support the student's professional development by suggesting conferences and publications, assisting with networking, and arranging opportunities for their students to engage with their audience, for example through seminars (Walker and Thomson, 2010). This approach is one in which learning occurs as a result of specific activities. The balance of learning shifts, during the course of the PhD, such that the student relies heavily on the supervisor in the early stages, but gradually takes the lead, becoming autonomous towards the end. A significant aspect of this relationship is the influence of the supervisor, who acts, not so much as a role model, but as an exemplar of research expertise. As a result, the student views the various activities as within an appropriate context, and leading towards a coherent goal (Collins et al., 1991).

In the past, this practice has been successful. Unfortunately, it has become less so since the advent of the changes outlined above (Taylor and Beasley, 2005). With more students to supervise, there is less time to provide such intensive support. In addition, whereas previously a PhD could, and often did, take several years, there is now an expectation that it (if full time) will be completed in three to four years, giving far less time for the gradual gestation of abilities. Perhaps of more significance, however, is the relatively narrow focus of the PhD itself. To maximize students' employability, the skills acquired as part of gaining competence in research, for example, skills of analysis, interpretation and communication must be transferable to wider professional possibilities. The supervisory relationship is possibly not the best vehicle for achieving this transfer, and most PhD programmes today recognise the need to supplement it with other, more relevant support.

Researcher developers and careers professionals, on the other hand, have expertise in delivering professional development, and where institutions have dedicated resources to provide specialist individual careers guidance for researchers, the focus is on the provision of tailored careers guidance support, enabling the researcher to plan for careers outside the academy. More broadly, researcher developers focus on transferable skills, for example, presentation skills, team work and leadership development. The aim is to support the researchers to adopt a positive and effective approach to their personal and professional development, building the confidence, adaptability and resilience to carve a fulfilling career path. Development opportunities are designed and delivered to broaden the experience of the researcher, enabling them through a combination of classroom teaching and experience in environments outside the academy to develop a rounded set of skills.

One drawback to this approach is that the skills acquired on individual courses are often not perceived by students as part of a coherent whole (see Collins et al., 1991). Speaking at a conference has relevance for a PhD student, in a way that attending a course on presentations does not. This is particularly the case if the researchers themselves do not see the value in developing a broader skill set in preparation for a potential career route outside the academy. Possibly a more significant difficulty is the generic nature of these courses. Courses that are discipline specific are more attractive to students (Crossouard, 2013), and apparently more effective (Saunders, 2009), particularly if situated within the social and cultural context of the research community (Crossouard, 2013). While researcher developers are rightly concerned that research students gain some perspective on the world outside academia, this needs to be integrated into the students' own world view.

Both modes have strengths in terms of perspective and delivery. On the one hand, the supervisory approach is rooted in the research discipline, provides models of excellence, and student involvement is through active engagement. On the other, the researcher developer has a clearer understanding of the needs of professional development, is better qualified to deliver transferable skills, and can deal with larger numbers. Currently, they operate in parallel. However, there are convincing arguments for a more integrated approach in which the strengths of both contribute to the whole.

Integrated approach

The *Knowledge Exchange in Design* (KED) scheme, run by Birmingham City University, is an example of a successful integration of academic and researcher developer expertise. The pilot programme, initially funded by the AHRC, was run jointly by the authors, each bringing different qualities and experience. The scheme was designed to enhance the career development of doctoral students[2] through engagement with external organisations. While it operated around aspects of design research, the primary focus was on the application and development of professional skills in a wider context. Over a two year period some 26 researchers were paired with an individual from a partner organisation to work on a discrete project. Our primary aim was to provide an opportunity for them to gain practical experience of utilising their knowledge and experience at an early stage in their career. Specifically, the scheme was designed to promote skills in collaborative working, project management, communicating to non-academic audiences, and applying research skills, such as problem-solving, analysis and synthesis, to novel situations.

Collaboration took the form of residencies: partnerships between students and individuals from host organisations to address a specific issue. These residencies should be seen as fundamentally different from placements, in which a student works for an organisation, sometimes on a specific project, but more typically integrated into the organisation's ongoing work. While this allows students to experience many aspects of professional work, it does not address the spectrum of skills involved in running an autonomous project. KED residencies involved short, focused projects, with an identified outcome and tangible outputs. The duration was 3-5 days, whether as a continuous period or individual days spread over a lengthier period, depending on the nature of the project. The project itself was developed through a process of negotiation between the student and the organisation. Students then worked directly with their partners, from initial design to implementation, managing the project to completion. At the conclusion of the project, students produced some form of tangible output, for example, a report, presentation or set of recommendations, for the organisation. The opportunity to develop and manage a small project such as this, allowed them to develop a broader perspective on their own area of work in a situation involving novel skills.

Evaluation of the pilot included analysis of data gathered from the students. In addition to the report or other output provided to partners, they provided a report to the KED scheme on the residency itself – how the project brief was addressed, the approach adopted and how it was implemented, together with specific outcomes. They were also asked to identify the skills involved in the project. Clearly, there is a difference between the application of an acquired skill and the development of a new one. In this instance, we were not concerned with teasing apart these differences, nor with specifying the level of development. Our concern was more to provide an opportunity where these would be brought into play, explicitly and identifiably. The most significant outcome for researchers was the opportunity to engage as equals, in a meaningful way, with external organisations, while bringing their own project to a successful conclusion. The specific skills that were most identified were: communication in various

[2] The scheme also involved early career researchers, but for the purposes of this discussion, we focus only on the experience of doctoral students.

forms and to a range of audiences, project management, problem-solving, and collaborating with others.

From the outset, our concern was to encourage students to see the wider potential of their research expertise, and to reflect on the relevance of their own developing skills. The integration of our different strengths supported this process: the academic perspective ensured that research skills were brought to bear in a different context, while the professional perspective provided insight into the needs of the organisation and enabled the researchers to see the benefit of the experience for their professional development. This combination of professional careers expertise and academic knowledge allowed us to address the professional development aims of the programme within the academic context. Specific training was tailored to the needs of the project, and was achieved through individual interaction as well as taught sessions. Finally, it provided a framework in which students could progress from guidance to autonomy.

There were inevitably a number of challenges to be addressed. These included the development of appropriate training, providing individual support to researchers, and evaluating their progress. Perhaps the most significant, particularly in the present context, was that of student engagement. Students gave a number of reasons for this. For some, taking part in the scheme seemed a time-consuming exercise that would potentially slow down their completion. They did not see the benefits to their own development, nor the possibility of enhancing their research. For others, the absence of a direct link to their research topic was a barrier. Even though the external partners came from mainly cultural organisations, such as museums and galleries, and their initial briefs were based broadly within the discipline of art and design, these students did not see the value of their research expertise as separate from their research knowledge, and were unable to translate it to this novel situation. This may have stemmed from a lack of confidence, a finding that resonates with other research. PhD students see confidence as the most important quality they need to develop as researchers and believe it should be developed before other qualities (Åkerlind, 2008), and clearly this is an issue that researcher development should address. In the main, however, their reluctance seemed to be rooted in the notion that activities outside the specific focus of their research would be a distraction.

Closer examination revealed that this lack of engagement could in some instances be traced back to a certain amount of disinterest by research staff, and specifically by some supervisors. While many academics were enthusiastic about the scheme and saw the benefits of networking with external organisations, students' own supervisors were sometimes less keen to get involved. There was a tendency to see the scheme as something additional to students' primary goal of completing their doctoral research. In some cases, students were actively discouraged from taking part. Embedding schemes such as KED into the recognised structure of the PhD experience is a possible way of overcoming this issue.

One of the authors is involved in the delivery of the *Talent Pool* programme at the University of Birmingham and has investigated how this well-established professional development scheme has succeeded, and where it has faced similar issues to KED. The Talent Pool scheme has been running for five years through EPSRC funding and is now an embedded part of the Doctoral Training Partnership (DTP) strategy at the institution. It benefits from being part of a structured provision in line with strategic priorities, and has grown a reputation as a valued, established part of the University Graduate School suite of transferable skills provision. It is also well-regarded in the sector as an innovative and forward-thinking programme. Over a five year period 480 researchers have attended.

The Talent Pool includes five days of transferable skills training designed to develop doctoral researchers as consultants and more broadly, to provide them with a foundation in

knowledge and expertise in enterprise skills. On successful completion of the training, researchers are encouraged to source opportunities to put their skills into practice through work on short term consultancy projects. Sustainability of the programme beyond the EPSRC funding period is being addressed in part by involving academics, employers and alumni in the design and delivery of the programme. Collaboration and community are seen as key to its success. The positive career outcomes of the Talent Pool skills training is evidenced in a bank of case studies demonstrating benefits to the career progression of researchers in and outside academia. The following excerpts illustrate this:

> *The course has given me vital business experience and consultancy skills that fall outside the scope of normal PhD studentships. It helped me secure my new job with Johnson and Johnson*
> *(Shankar, PhD Liver Research)*

> *Talent Pool is a fantastic opportunity to learn about other options than just staying in research. I learnt how to put forward a consultancy proposal, fundamental to my business start-up, Bluevine Consultants*
> *(Amrit, PhD Hydrogen Fuel Cells)*

> *The production of grant applications is a similar process to the production of consultancy proposals, and I think that that experience of consultancy tendering has helped my recent award of an international research grant, allowing me to spend 6 months working in Japan*
> *(Alex, Research Fellow, Nanotechnology)*

While the success of this approach is apparent, it can also be faced with similar hurdles. A small number of semi-structured interviews, undertaken to gain insight into students' beliefs and experience, revealed some of the underlying issues. Many supervisors perceive the benefit, and are supportive, for example, the supervisor who suggested *that I get involved with the departmental journal ... As a result I have [joined] the editorial board of the departmental journal as articles editor …* (Researcher 2). Others, however, are apparently less so, and in some cases, have actively discouraged participation. For some, the difficulty is one of accessing information.

> *There are opportunities out there for postgraduate researchers – I found that once I got involved with one scheme, this led to other things. The first thing I got involved with was Talent Pool, but this wasn't an obvious opportunity, I found out about it from a friend.*
> *(Researcher 4)*

For others, the difficulty is in taking part.

> *The main issue is at the supervisor level; often the approach can be 'if you're not in the lab, you're not committed to your PhD. While researchers may see the value in taking part in a scheme like (for example) Talent Pool, their supervisors are less keen for them to take time away from their research. It would be useful to have more communication between academic supervisors and careers professionals – because of the power relationship, it is difficult for researchers to convince their supervisors to let them take part in career development activities, but some communication from higher up (i.e. from people in Careers) to highlight the benefits of schemes such as Talent Pool might work. I wouldn't write off a career in academia, but am more interested in developing entrepreneurial skills and becoming a leader in industry – it would be nice to see more focus on non-academic career paths.*
> *(Researcher* 3)

This comment is particularly telling, since it emphasises the nature of the power relationship that exists between supervisor and student. The influence of one on the other is subtle, but none the less real for that. As a result, students miss the opportunity to gain a new perspective on their academic progress, and those who aspire to a career outside the academy are not supported in exploring this potential route.

Both KED and Talent Pool illustrate that there are excellent initiatives now available to postgraduate researchers to support their career development and to gain experience outside the academy. Where students take advantage of the opportunities, positive outcomes result, and they are prepared for multiple career options. There is, however, an inconsistency in the experience of the student. They need to perceive the value of taking part in professional development opportunities, but for this to take place, their supervisors must also see the benefit. Researcher developers also have a role to play by working with, rather than alongside, the academic support network.

There remains a distance between the academic viewpoint and the focus of professional development, leading to a tension between the demands of successful, timely completion of the PhD and the perspective that a researcher will benefit from an investment in their professional development. This is further exacerbated by the preconception of many academics that careers other than academic are somehow *second best*, and only to be contemplated by those who are unlikely to be successful in an academic role. The traditional doctorate was designed for a very small, elite group, and its main purpose was to make provision for the development of future researchers. The modern doctorate has a broader purpose, and for many it will lay the foundation for the future in a range of careers. Giving attention to the broader needs of professional development enhances all career progression, including that of the academic.

Emerging Themes

The difficulty then seems to be twofold: how do we enable wider conversations between student, supervisor and researcher developer, but more significantly, how do we jointly support the professional development of students in an environment that is relevant to their experience and conducive to both academic and professional approaches. From our experience, we can identify three key themes that should be addressed: collaboration, culture and community.

Collaboration. The strength of the KED project lay in its collaborative spirit. The scheme was underpinned by our very different perspectives, truly integrated into a form of *Gestalt*, in which our combined whole transcended our joint contributions. Collaboration between the two strands of support appears to be the most effective approach. A number of researcher development programmes have addressed this in different ways. Costello and Shaw (2013) adopted what they described as a *blended approach*, in which students were involved in a variety of learning communities, drawing what was most appropriate from each. These included membership of research communities, in which they had an active role, as well as attendance at research skills training, and wider professional development courses. They also engaged with communities beyond their institution, such as discipline-based networks and local student research networks. A similar approach is that of both Austin (2009) and Gabrys and Beltechi (2012); in different ways, they applied Collins Cognitive Apprenticeship theory (Collins et al., 1991) to their doctoral education programmes. While Austin focused on adapting specific aspects to the needs of the PhD, Gabrys and Beltechi devised a collaborative programme based on its principles. As well as working with their supervisors, students developed research-related skills through interaction with other researchers, in the form of seminars and workshops. The more general, transferable skills were addressed by a range of courses, at both departmental level and University level, through a dedicated doctoral centre.

While this represents a coherent programme that embraces the different perspectives and approaches, it is not truly integrated. The different strands may work in harmony, but they still operate separately.

Culture. Today's research students need to begin planning their future career path at an early stage, and in order to do that they should have the opportunity to explore options outside the academy. More importantly, they must address the development of their abilities in a wider context than just the academic. The research culture is founded on a different set of principles, in which knowledge is paramount and the purpose of doctoral education is to incubate the researchers of tomorrow. While these are primary concerns, the research culture must adapt to accommodate not only the new role of the PhD, but the more public aspect of research generally. One way of achieving this is through public engagement projects, such as KED, that raise awareness of the needs and opportunities of the world outside the academy. Similarly, programmes such as *Talent Pool* can inform the nature of this changing culture.

Community. Research communities are all the same, yet all are different. They operate within the same research culture, but each discipline area has its distinctive understanding and practice. While the growth of interdisciplinary research will inevitably have some impact on this, and may eventually lead to broader research communities, the need for students to embed their learning within that community will always be significant. To be successful, researcher development should attend to these distinctive aspects, tailoring its delivery to specific interests. Researcher developers can still work within the scope of skills development, but with the help of academics, the skills can be integrated into a contextualised project. By acknowledging the strengths of each, researcher developers and academics can together establish their own community of best practice.

Conclusion

In this discussion, we have considered the nature of the separation of academic support and that of researcher development, and its impact on the professional development of research students. We have explored ways in which this separation can be overcome, and as a result of our own experience, have identified three key themes to be addressed. These themes will benefit from further exploration. They provide a starting point for moving the conversation forward, so that we may together address the opportunities and challenges faced by the academics, researcher developers and most importantly, the PhD students themselves.

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