The Influence of Professional Doctorates on Practice and the Workplace

Authors:

David Boud

Work and Learning Research Centre, Faculty of Professional and Social Sciences, Middlesex University, London; Centre for Research in Assessment and Digital Learning, Deakin University, Geelong, Australia; Faculty of Arts and Social Sciences, University of Technology Sydney
david.boud@uts.edu.au

Annette Fillery-Travis

Wales Institute for Work-Based Learning, University of Wales Trinity St David, Lampeter; Work and Learning Research Centre, Middlesex University, London
A.Fillery-Travis@uwtsd.ac.uk

Nico Pizzolato

Business School, Middlesex University, London
N.Pizzolato@mdx.ac.uk

Brian Sutton

Business School, Middlesex University, London
B.X.Sutton@mdx.ac.uk

Abstract

This paper investigates the influence that undertaking a professional doctorate has on the practice of the graduate and their workplace or organisation. There is a growing literature on how undertaking such advanced development influences the individual graduate at the personal and professional level but there is little evidence of a wider impact on practice in general or at the organisational level. This study seeks to address this issue through a qualitative study of practitioners from a range of professional arenas and sectors who have graduated from a professional doctorate within the past 10 years. Through thematic analysis of semi-structured interviews and the candidates' project reports we explore their experience of applying their learning within their workplaces providing insight into the level and degree of influence such development can have on organisational contexts. The paper does not focus on the academic or personal impact of their experience as the intention of these particular doctoral researchers is the creation of new knowledge embedded in practice.

Introduction

Doctoral education is identified as the highest-level programme offered by academia. In general, it has focused on the development of advanced specialist knowledge in a specific field including (as required) competence in the appropriate forms of technical practice, critical analysis, and research methodologies (Scott, Brown, Lunt, 2004). In recent years, it has widened its remit from being the primary route for training novice researchers and academics to being part of the development portfolio of higher-level professionals and advanced practitioners in the workplace (Costley and Lester, 2012). Whilst there has been some evaluation of the impact of these emergent forms of doctoral education for individual practitioners and their own professional life there has only been a limited investigation of the impact on the workplace itself and on practice in its field of application (Wellington and Sikes, 2006a). In this paper, we seek to address this issue by exploring the products and influences of graduates of a particularly work-oriented professional doctoral programme with specific focus on their perception of the impact their development has made within their workplace and professional area.

The expansion in the number and type of professionally-oriented doctoral programmes available to individuals has been driven, in part, by the belief that this type of development

can fulfil a variety of purposes e.g. knowledge exchange between industry and academia, the improvement of professional practice and/or as an individualised development programmes for practitioners of advanced standing (Boud and Tennant, 2006). It has also been suggested as an effective route for the preparation of individuals who are 'creative, critical and autonomous intellectual risk-takers capable of contributing to all sectors where deep rigorous analysis is required.' (ERA, 2010) and as such a doctoral degree is now required for advanced levels of practice within some professions. More recently, there has been an emphasis on the importance of transdisciplinary in ensuring that professional doctorates meet the increasingly complex needs of problems in practice (Pizzolato and Costley, 2017). Clearly there is a growing perception that doctoral education is no longer relevant only for academic careers but can also contribute to the development of a broader range of candidates. As the European Commission policy for the Modernisation of Higher Education in Europe (2011, p. 12) identifies there is a need for "researcher training in higher education... (to) be better aligned with the needs of the knowledge-intensive labour market and in particular with the requirements of SMEs. High quality, industry-relevant doctoral training is instrumental in meeting this demand for expert human capital."

As a result, doctoral education is now firmly embedded across the globe in national governments' public policy for strategic innovation. Governments see research training in academia as central to entrepreneurship and to promote change in an international landscape of competiveness (Dill and Van Vught 2010). In knowledge-intensive industries, private organisations too rely on collaborative relationships with universities through the establishment of research centres, contract research and academic consulting (Perkmann and Walsh 2007)., often within the framework of 'open innovation' (Enkel, Gassman, Chesbrough 2009). On the other hand, applied projects, or what has been called 'entrepreneurial science', is already regarded as a driver of public research (Perkmann and Walsh 2010). These models of innovation based on the linkages between industry and higher education are increasingly common and have important implication for the future of doctoral education.

The mode of delivery of doctorates has also changed to meet these new expectations. The full-time PhD undertaken within the academy is still the main type of doctorate chosen by those yet to start their working life but there are now alternative options available (EdD, DBA, industrial PhDs and Professional Doctorates) where some or all of the research is

undertaken within a work context and where the candidate is an advanced practitioner (Costley & Lester, 2012). The provision of these doctoral modes is growing across Europe and in UK alone there are over 308 professional or practice based doctorates from a range of disciplines and professional areas (HEFCE, 2016) with the main growth in education, business, psychology and health, and social care.

Students' motivations for undertaking what is a relatively long term and expensive academic programme is predominantly their own development and, either directly or indirectly, that of their practice (Fox and Slade, 2014). In contrast, those operating at higher policy levels hold an assumption that this individualised development will in turn impact upon the candidate's work environment driving value gain for the organisation as well as the employee (HRCE, 2015). There is, however, little research evidence of such an impact on the students' organisation or workplace, nor the professional fields within which they operate.

This difficulty in evidencing impact is not restricted to doctoral education. It is also seen when trying to evaluate the impact of employee's learning in general on an organisation. It is generally accepted though that there is a strong relationship between individual and organisational learning (OL) and the subsequent ability of the organisation to innovate and change. As Antonacopoulou (2006) states, 'the relationship between individual and organisational learning remains one of the unresolved issues in current organisational debates. '(p. 445). This situation persists and there are no well-accepted frameworks to evaluate such impact.

In this paper, we explore the experience of graduates of a professional doctorate. We first review the general context of learning impact in organisations before moving to consider specifically the professional doctorate. We then report on our findings from semi structured interviews used to explore graduates' perception of how their doctoral programme had changed their practice and what was the subsequent impact upon the work of their peers and workplace. Finally, we discuss what impact is possible from such an individualised programme and how candidates can be supported to achieve the impact appropriate to their work and role.

Learning Impact within Organisations

Before considering how professional doctorate graduates influence their workplaces it is necessary to place this enquiry within the wider debate on the impact of employee learning on the workplace in general. While there may be no definitive framework for investigating such impact, there are a number of conceptual models that point to the multi-variant nature of the issue. One important factor that appears to influence the absorption rate of new knowledge and insight in order to bring about changes in outcomes are the 'learning practices' used across the organisation (Sung and Choi, 2014). These are defined as a set of complementary processes that promote the creation, exchange and utilisation of information and knowledge within the organisational context. All must be performed to enable learning or knowledge creation to drive and inform organisational innovation and change (Hatch and Dyer, 2004). These practices occur at an individual level (e.g. self-learning, individual projects, education), interpersonal level (knowledge exchange, cross learning, coaching) and organisational level (knowledge sharing systems, quality circles). In parallel work on organisational innovation, Gratton noticed that in some organisations, 'hots spots' of innovation spontaneously emerge to meet a need and then die down again. In extensive studies across multiple industries, Gratton identified repeating patterns associated with such hot spots and four key characteristics, namely; an igniting purpose, a cooperative mindset, boundary spanning (free flow of ideas between discipline and organisations) and a productive capacity (Gratton, 2007). Synthesising the above findings from complementary research in different fields we may conclude that the link between individual learning and the ability to influence or enact change or innovation within the organisation is multistage and multilevel and as a minimum must fit with or magnify an existing and urgent organisational purpose; it must fit with or build upon signature learning practices that are in existence and finally, the graduate in question must be organisationally placed to influence and communicate across existing boundaries.

Another significant moderator of the positive association between learning and impact on the organisation is its innovation climate or culture. This is defined as the employee's perception of the enduring features of the organisation that accept and support new ideas and change as well as supply resources for such initiatives (West and Richter, 2008). From a strategic perspective, the organization needs to balance the long-term potential benefits of exploration against the short-term gains of exploitation of current capabilities (March, 1991). At both individual and organizational levels learning processes are largely driven through experience. Learners engaged in exploration will tend to experience greater levels of failure with

consequential negative impacts on their levels of self-confidence, whereas learning directed towards the perfection of performance within an already recognized capability are near term and confidence boosting. As individuals learn within the exploitation models their learnings are encapsulated in the norms, rules and practices of the organization which creates a reinforcement of capability and can lead to an overemphasis on a strategy of exploitation as opposed to exploration (Levinthal and March, 1993).

From an individual perspective innovation and change can be risky for the initiator as it 'challenges the status quo and disrupts the interpersonal relations and work processes endorsed by others' (Choi and Ruona, 2010, p. 472). A high innovation climate offers 'a safety net against such risks and tensions with others' (Patterson, West et al., 2005). In a low innovation culture, learning practices will tend to be used not to support change but to strengthen existing ways of working and validate the status quo (Wang and Noe, 2010). In our research sample, nearly half of those studied were self-employed and working across a range of organisational settings. In their case, the ability to quickly assess learning culture and innovation climate and moderate their approach to emphasise compatible learning and knowledge exchange strategies may be a significant factor in their ability to influence and bring about change.

This organisational climate also shapes employees' perception of what learning should be undertaken as well as how readily it will be taken up and developed by others. Antonacopoulou (2006) explored the shaping of what an individual considers 'acceptable' learning generally and identified three factors of influence. The first is the context of learning and specifically how learners and their learning is shaped by how they enact their identity as professionals, the idiosyncrasies of their employing organisations, and the wider educational modes common in their industry. She identifies the second factor to be the politics of learning and how it can be seen as a form of control of the individual as the organisation implicitly limits the scope and application of learning it acknowledges and supports. Finally, the learning is limited by the identity the learner wishes to maintain and how they seek learning in ways that maintain rather than challenge the status quo (Antonacopoulou, 1999, 2004).

In summary, the impact of individualised learning within an organisation is dependent upon a number of interrelated factors specific to the ethos and structure of the organisation.

Impact of Doctoral Development

In the context of the professional doctorate, the majority of impact studies explore the influence on the person of undertaking such as degree. Reported impacts include increased confidence, new responsibilities at work and improved employment (Costley and Stephenson, 2008; Lester, 2004; Nixon al 2008). Wellington and Sikes (2006a) looked at the effect of an EdD in the personal and professional lives of 29 students and found the skills developed were not identified as being relevant to direct improvement in practice but as enhancing the student's ability to reflect upon their practice:

> 'the doctorate is seen as being largely of benefit to the individual rather than the professional as a whole or to educational practice in the case of the EdD' (p. 733)

A later study looking at the contribution of professional doctorates on nursing practice (Smith, 2013) identified a similar issue: 'there was little impact within the [work] role' although recommendations were made for development of practice in most cases there was little evidence that any such changes had been enacted.
The overall perception is of

> 'the development of the graduates' selves [that] altered relations and interactions within their organisations which led to many different configurations of what could be called impact' (Fox and Slade, 2014, p. 552)

Undertaking a professional doctorate provides significant personal development of the graduates but, as identified earlier within the organisational learning literature, the impact of this learning upon the organisation is not explicit nor easily definable. In many professional doctorates the planned impact is designed by the candidates within the project itself. This echoes current good practice within organisational learning and development initiatives that aim to replace the return on investment measure for impact with a more nuanced return on expectation figure (Jarvis, Lane et al. 2006; Haggis, 2011). Such considerations seek to actively link the measure of the efficacy of the outcomes with the initial purpose of undertaking the doctorate. To date, however, there has been no exploration of the effectiveness of this approach in professional doctorates.

In addressing this topic, we are aware of the complexity of interaction between the graduate and their work environment and the inadequacy of simple cause-and-effect or input-output models for learning impact to describe the complex interactions at play. It is clearly more

appropriate to explore the relationship between the contextual conditions influencing learning and the emergent properties of the influence of such learning (Haggis, 2011). This type of analysis necessitates the need to look across 'multiple levels and systems simultaneously' (Haggis, 2011) where the individual graduate is operating within a number of systems at a variety of levels. Similarly to Haggis, Pratt et al (2013) have used activity theory in a 'multi-level; manner to explore the pedagogical relations between the activities of the candidate/graduate within the three systems of personal, professional and workplace. They explore the environment of each system and the communication between them.

Burgess and Weller (2011) talk of the resistance their graduates experienced in their work place when they sought to apply their new-found critique and challenge. They identify the need for appropriate 'ecological conditions' to nurture continuing reflection and development in the workplace. The notion that the impact of an individual is dependent on the integrated, ecological nature of their workplace resonates with the literature on learning organisations. For Watkins and Marsick, 'the creation of a learning environment goes far beyond the design of learning itself. It involves the design of work, work environments, technology, reward systems, structures and policies' (1993, p. 44). Clarke has remarked that 'developing a supportive learning climate has come to the fore of the human resource development literature' (2005, p. 187). While is to be expected that the type of workplace environment and the level of impact of doctoral graduates are inextricably linked, the focus of our study invites the examination of the influence of the formal learning of individuals on an organization, to complement the more frequent focus in the literature on the influence of the organization on the informal learning of its employees (Clarke 2005).

The concept of ecological conditions is resonant with the innovative culture considered earlier and there are parallels with the multilevel learning practices of the Sung and Choi (2014) study. Clearly professional doctorates are operating effectively at the individual learning level but the interpersonal and organisational levels are less clear. Research to date has considered the impact of the professional doctorate on the graduate (personally and professionally). With consideration of related literatures such as organisational learning it is now possible to explore the less researched but critical issue of the influence the learning of professional doctorate graduates can have on their organisation. We use the term 'influence' here instead of the blunter term of 'impact' to highlight the multi-level and at times indirect

nature of the possible interaction and its effect. We now turn to describe our investigation of this issue.

Methodology

We have drawn our data from graduates of a long-established and popular professional doctorate programme run by the former Institute for Work Based Learning at Middlesex University, London. The learning outcomes of this doctorate are mapped against level 8 of the UK Framework for Higher Education Qualifications and the institution hosting the programme follows the UK Quality Code for sound practice for research degrees (UK Quality Code, 2017). Candidates undertaking the programme are employed or self-employed in a variety of fields and come from different professional backgrounds. The programme offer is modelled upon a generic work-based learning framework and is based on the three pillars of reflection on experiential learning, practitioner inquiry project design, and a project rooted in practice, that allows for an approach which is sometimes transdisciplinary and inter-professional. The outcomes of the candidates' doctoral projects are vastly different, but they have in common a reflection on and intervention on practice, the candidates' own or within the organisation (if applicable), with the ambition to impinge on their wider professional field and communities of practice.

As this is a study that focuses on the particularities of different experiences of impact, we randomly selected nine graduates from those who had been awarded their doctorate between 2006 and 2016 out of a total population of 35 graduates whose work was available in the public domain, through the University repository. As staff in the same institution, we as researchers selected candidates with whom we have had no direct connection. We analysed their project reports, interrogating the text through a common protocol, which consisted of a number of common questions as a guide. The more important were: What was the relationship between the researcher and others? What was the nature of their involvement? Was there a tangible product of any kind? What influences on practices, on relationships, on the organisation involved can be discerned?

The doctoral reports represented a snap-shot in time. At the time of submission many of the complex organisational interventions envisaged in the research had not had time to become embedded and produce tangible evidence that demonstrated that the candidate had influenced or brought about a change or improvement in the situation under investigation. Graduates

used their project to lay the groundwork for such influence but often left the difficult stage of negotiating change with stakeholders out of the research design. In many cases the projects contained seeds that could act as catalyst for change, but the documents did not capture if and how that change occurs and are often vague on the subject of desired outcomes as this can often only be truly assessed in retrospect. In many respects, when professional doctorate projects are limited to create insights, they lay out a model for applied knowledge, but leave the application of the model to the future.

It was becoming clear that we needed to delve deeper to gain an appreciation of longer-term impacts. We established contact with the authors of the nine reports six of whom agreed to engage in an in-depth interview about their doctoral work. This research has been conducted following approval from the University's Research Ethics Committee; the researchers have guaranteed to participants the anonymity of their identity and the confidentiality of their data. These interviews occurred three to seven years after their graduation. Through these interviews graduates have been able to put in focus, in retrospect, the breadth of their influence. The interviews followed a semi-structured format with open questions to stimulate reflection around 4 broad themes;

1. Direct application of the outputs / recommendations of the work
2. Adoption of the ideas by others in the immediate workplace
3. Influencing thought and action in the wider professional domain
4. Personal impact of the doctoral research

This paper specifically addresses the data generated by the first three of these four questions. The interviews were conducted remotely and each lasted around one hour. The analysis is based on their transcript. The sample consisted of professionals with the following profiles:

- Three employed - working in organizations at various levels of seniority and authority
- Two self-employed running own consulting businesses focused on coaching
- One independent – investment broker

The transcripts were subjected to thematic content analysis, each transcript was examined independently and subjected to a parallel process of reflexive journaling and coding. In using content analysis to compress the voluminous data of project reports and interview transcripts into few analytical categories, we have drawn upon an established tradition in social sciences.

(Krippendorff, 1980; Weber, 1990). In particular, we were aware of the suitability of this methodology for examining trends and patterns (Stemler and Bebell, 1998). This was an iterative and interpretive process that allowed for both the identification of subjective meaning and the surfacing of connections between espoused ideas. Initial codes were developed using a constant comparison method (Strauss and Corbin, 1998), extracts of text were marked and uniquely identified before sorting within and across transcripts to identify semantic and latent themes (Lincoln and Guba, 1985). For the purposes of this paper, the findings reported set aside the considerable data across all questions which suggested substantial personal influence as a result of doctoral study and focus on influence beyond the candidate themselves.

It should be noted that any claims for influence or impact are based upon the self-reporting of the interviewees. Further studies would be needed to triangulate data to ensure that respondents are not being too optimistic about their contributions.

Findings

In different ways, all nine doctoral projects analysed achieved considerable insights into existing practices within an organisational setting, addressing issues that are of pressing concern for peers in their professional field. As we consolidated these insights from the projects reports and from the transcripts, common themes emerged. These themes coalesced into three broad categories, namely:

1. Evidence of creation and adoption of usable practices and products
2. Indicators of the establishment of new processes, networks and relationships
3. Indicators of ideas crossing organisational or international boundaries

Creation and adoption of usable practices and products

The graduates studied undertook a doctoral programme primarily concerned with knowledge generated and used in practice. There is a concern in the development of this kind of research to integrate scholarly and professional perspectives to contribute either by producing a discrete product or process or by enhancing an aspect of the professional practice that can be recognised by a range of stakeholders as usable in the organisation or in the field. In all cases the graduates had identified a situation within their domain of practice and were seeking to bring about some improvement to this situation. In most cases their ability to bring about this improvement was inextricably bound to their ability to define, influence or align with

strategic priorities within their working environment and their ability to tap into signature learning practices. This view of change fits well with Mitchell et al's notion of an outcome space framework in research efforts that have a significant transdisciplinary component (Mitchell et al, 2015)

One example is the graduate who sought to explore the way the idea of social capital can be harnessed to improve the lives of young homeless people. He applied findings that emerged in the literature on social capital (Bourdieu, 1986; Coleman, 1988) to a specific homeless housing agency, bridging between a field of academic research and one of professional application. Through a series of interviews with staff and service users the project confirmed the relevance of those findings to his work setting. Eventually the project proposed a set of recommendations that would put social capital at the centre of interventions on a vulnerable group.

In the follow up interview, four years after the award of the degree, the graduate indicated that the recommendations had found application along the lines that he had suggested with tangible changes both in his professional practice and in tangible outcomes meeting some of the targets of the homeless housing agency.

> "In terms of the community the project actually resolved the postcode discrimination of young people in that area and where they had not been able to assess employment that was no longer an issue. They have been able to access employment." (Interview 5)

As in the case above, five of the six interviewees could point to specific evidence that the recommendations they had made or the products they had developed had been deployed and were delivering the benefits that they expected. In the case of the graduate working with the homeless housing agency a project post implementation review pointed to:

> "prior to the project only one or two, would gain work places. After the project, in the first year, they had about fifteen that entered into paid jobs, and they had a few that entered into unpaid jobs. Then the following year when I did the post projects we see many numbers of people, tenants, were engaging all over twenty-five." (Interview 5)

This graduate also worked with agency staff to change their focus from activity to the outcomes that the activity produced. He instituted a simple measurement and recognition structure evidenced by:

"Homeless yes, the behaviour of young people on unemployment, on social interactions in the community as well as move on into independent accommodation-, I mean, used to be very slow. My project suddenly looked into those areas and that entails training staff, putting training in place. I introduced what they called an outcome star and it was in my project. How staff can use that to work with the young people. It actually improved the outcome on employment, on re-housing as well as on education. And it worked very well." (Interview 5).

Establishment of new processes, networks and relationships

A major focus of the doctoral projects under examination, and their influence after graduation, is the evaluation, streamlining, and improvement of existing networks, processes and relationships within their organisations. For instance, a graduate employed as a senior manager in a government agency with international reach researched the effectiveness of its Global Diversity Network, a network whose introduction she had advocated and had been instrumental in setting up but one that she perceived was not having the organisational impact that she had hoped. Through a close examination of the internal working of this department and of the perception its staff, and positioning it in the context of the literature on diversity policy in international organisations, the graduate identified findings that could address perceived shortcomings and improve overall impact.

"How you strengthen this group, how you develop the capability of this group was a very helpful thing that came out of the research. You know, I was able to step back, reflect, have my own perceptions of their effectiveness challenged and then I think, you know, I was able to take a much more glass half full rather than glass half empty approach and kind of build from a more constructive base. I was still, as the data was emerging, not trusting it. I wasn't trusting the data that this group is effective because I wasn't feeling that they were particularly effective. (Interview 4)

Out of a 'deep diving' into the data collected in the research this particular graduate created processes that were then used within the organisation to tackle the challenges of diversity within diverse teams. One of these processes was to develop and internally accredit a 'facilitators group', which could lead change within different internal departments and teams in relation to the agencies agenda on diversity. (Interview 4) The graduate also established an 'internal diversity award' to reward best practice.

"This diversity award has two categories: leadership and creativity. And it is interesting to me that the creativity category was won by one of our global diversity network's leads who is highly, highly effective, and that a number of the nominations for the leadership category were for people who have worked as global diversity network leads or in part of that sort of milieu." (Interview 4)

In another project, the graduate (not available for an interview) focused on the company that he had founded, a conglomerate of vertical websites, to understand how to integrate better the different vertical units and hence promote the attractiveness and longevity of the company commercial offerings in a very competitive arena. In this latter case, the project resulted in a change of the organizational strategy and a change to the compensation and reward mechanisms of the staff. As the founder and CEO of the company the candidate was in an ideal position to implement these changes.

In all of these in-depth interviews we heard stories of the direct transfer of the tools and techniques developed in the DProf into the working environment and four of the six interviewees could point to evidence that their approach had been adopted beyond their parent organisation or context. In some cases, this was evidenced by the roll out of tools or related training materials and courses within the workplace, in response to an organisational problem. In other cases, the graduate adapted and adopted their tools as they moved into other assignments with other organisations.

However, the interviews also reflected the literature that points to the difficult for innovators in introducing change in their organisation setting (eg. Damanpour and Schneider, 2006). Four of the six interviewees alluded to the need to adjust one's approach to fit the prevailing culture and learning practices. One graduate talked about how the doctoral experience enabled her to re-evaluate her approach to influencing and building consensus for her ideas in the more politically charged operational environment:

"One of the things that were said to me is that I employ too many push strategies; I should employ more pull strategies. I think that the doctorate programme has supported a bit of a shift in my patience/tolerance levels, if you like, a bit of a shift in kind of deepening my understanding of the organisational culture and factoring in the organisational culture to my decisions around not only interventions but the how of it." (Interview 4).

Another interviewee found that approaches that worked well in a trust-based research setting often needed to be nuanced when applied in an operational setting where issues of self-consciousness and organisational stress may colour a coaching engagement.

> "Well, I think I probably use it in probably quite a different way. Because the difference between doing it with willing participants in a research study and doing it with people out in the business world. So, I do use narrative as a starting point. Particularly when clients have had something which has knocked their confidence. So, I do use narrative as an initial diagnostic. And I also use reflection and written reflection as a core part of all of my coaching relationships. I think the piece that would be different out in that world, … but a different world, is often their willingness to write regularly about the incident that has impacted on, is less. So, I might, well with a coaching client, do an initial diagnostic in order for them to tell their story in as much details as they need to tell it." (Interview 3)

All in all, the capacity to influence change in the workplace is strongly linked to organisational authority and on capacity to build stakeholder support through ones' sphere of influence. One interviewee summed this up by saying that,

> "I was at the right level of seniority with the right span of responsibilities to steer and control, all of that, to almost ensure the—well, significantly ensure the adoption of the recommendations." (Interview 4).

Ideas crossing organisational boundaries

The more ambitious projects aimed to produce a lasting and tangible influence in their professional contexts. The scope of this tangible impact varied across the projects examined but in all cases, we see evidence of ideas, techniques and approaches being widely accepted within the parent organisation and then being adopted in widely differing situations and contexts.

In one project, the graduate has identified a challenge that often presented itself in the operations of a city's emergency services, how to maintain "constant and seamless" indoor communication in the high-rise buildings, car parks and shopping malls typical of the city. These areas—typical crime spots—are often underground or scarcely penetrable by radio signals. However, the challenge was not only technical.

> "So, what are the characteristic ways to solve problems like this? By innovation, either by technology or by design or even by business model. So, I look at it from these

perspectives and then I think perhaps I can look at it not just from purely technology, not purely from just technical design but also business model." (Interview 6)

The graduate here investigated different technical solutions in the light of the practical technological and cost implications but also the political challenges of having the emergency services adopt a new system.

"First it is about time, if I said money is no object, you can imagine how much time I have to put to each and every building to implement some sort of communications that allow for these officers to have sufficient radio coverage inside the buildings. So it takes quite a long time. But by using these public private partnership model it actually almost is like the magic that is overnight. I can borrow the infrastructure, inject the emergency services radio signal into each and every building right away. So, it is a huge cost saving and fast-tracked implementation, that is number one." (Interview 6)

By adopting a public / private partnership business model this candidate's work facilitated the deployment and rapid roll-out of emergency services communications into high density urban environments that were previously radio black spots. His innovative solution greatly reduced cost to the public purse, produced greater connectivity for emergency services communication with a direct and consequential impact on life saving and the protection of property. It also had a spin off effect of building more collaborative relationships between the public sector and private organisations. Indeed, the concept was so innovative and successful that the approach rapidly gained the attention of senior professionals around the world who were experiencing the same challenges. The candidate's success in disseminating his ideas across professional and international boundaries is evidenced by the following quote:

"Now the concept is being expanded in the UK. They have a project called ESN, emergency service network, which is well, I've been humble to say that it is through our discussions with the London Met, first started 3 to 5 years ago and they borrowed the concept and it has now become the national model of police communication service." (Interview 6)

Fitting to this category of influence are also those where a critical inquiry of one's own professional self leads to change of practice that resonated with professional peers. In a project on individuals who rebuilt resilience after a career setback, another graduate

identified the value of constructing a new narrative as a tool to rebuild such resilience. Her project was based on extensive coaching sessions plus analysis of the graduate's own narrative. As a result of a critical investigation of her own professional self the researcher developed a new and unique approach to career coaching and along the way greatly enriched her own practice. She developed a range of teaching and training materials that have been widely adopted and accredited by respected bodies and these have further served to bring her ideas to a wider public. Her writing has been published in an eclectic mix of journals and this has further broadened the applicability of her work.

> "At the level of the book I get emails from people saying I did what you said in the book, and I had this amazing session and I've been able to have a coaching conversation I wouldn't have had otherwise. So you see it in that way I have seen it have an impact. I've certainly seen it have an impact in terms of when I'm developing internal coaches which I do for a couple of organisations, that they are using the work in their own coaching practice and they tell me the impact that it's had. (Interview 3)

There is evidence that ideas about building personal resilience that came directly from the research case studies have now been generalised to inform hers and others practice.

Research has pointed out that employers value doctoral graduates for their deep disciplinary knowledge and eclectic skills (Research Councils UK, 2014). In addition, professional doctoral candidates in this last stream were also able to provide to their organisations tangible benefits, sometimes amplified by critical engagement, that had lasting impact as well as gaining a deeper insight into practice.

Discussion

We should not be surprised that there are many examples of positive influence and tangible impact on organisations and professional peers: the programme was one oriented explicitly to professional practice, had a pedagogy that supported work-based study (Costley and Stephenson, 2008) and recruited candidates who were in a position to make a difference in their own contexts. However, what is interesting is that discussion of influence and impact was not always an explicit part of the reports generated. On checking the formal requirements for such reports, we discovered that it was not an expectation that discussion of impact should be included. If, in a programme of this kind such an omission could occur, it makes one wonder how much emphasis might be given on impact in other programmes beyond conventional measures of academic publications which may not work outside the academy.

A notable absence from the forefront of discussions about effects is a focus on organisational conditions. The literature mentioned earlier would suggest that these would have a considerable influence. This is not apparent in the reports or the interviews. The reasons for this absence are not clear. It may be that the candidates were only able to contemplate undertaking a doctorate in organisational conditions which they had already judged as favourable, or they may have taken the organisational arrangements and conditions they faced as just a part of the environment within which they needed to operate and accommodated them accordingly. If the former is the case, then it raises questions about the extent to which a professional doctorate in itself can provide a pathway to organisational impact. In the latter case, the resistance Burgess and Weller (2011) identified was not present in the same way as they described. In our sample, candidates were not trying to transfer what they had learned in their doctorate to the workplace, their study incorporated resistance and how they might deal with it as part of the project itself. This provides an example of what Bowden and Marton might term learning within the context of transfer (Bowden and Marton, 1998), that is, transfer is not left as a separate step beyond the completion of study but incorporated within it.

Nevertheless, the experience of the interviewees would suggest that the ability to influence an organisational situation and contribute to desired outcomes relies heavily upon the fit of the graduates' work to the current strategic imperatives, what Gratton would call an 'igniting purpose' (Gratton, 2007), whilst at the same time recognising and being sympathetic to the signature learning practices that exist within the organisation (Sung and Choi, 2014). All of the graduates sought in some way to innovate both at the product and the process level and this level of innovative ambition, none of them could be said to be working within an organisation with a high innovation climate (Patterson, West et al. 2005) and yet all were successful in exercising influence and bringing their recommendations to fruition, in the most successful cases this appears to be largely a function of their own reputation and their extensive circle of influence. In three cases, at least we see reportage of ideas spanning boundaries and in all cases there was a strong reliance on the individual fostering and driving these boundary-spanning conversations, this appears to be consistent with Grattons finding on the importance of 'boundary spanners' in creating and sustaining innovation 'hot spots' (Gratton, 2007).

Conclusion

Our study clearly indicates that there can be considerable influence on organisations and professional contexts through undertaking a work-based professional doctorate. This influence is demonstrated through evidence of the creation and adoption of usable practices and products, indications of new processes, networks and relationships and suggestions of ideas crossing organisational or international boundaries. Larger studies of this kind are needed, but what also needs further exploration are the processes whereby this comes about, whether through recruitment of candidates whose conditions are propitious for such influence or through negotiated learning plans that foster such impact.

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