

The changing nature of doctoral programmes

Janet Metcalfe¹

Director UK GRAD Programme, CRAC (Careers Research and Advisory Centre)
Ltd, Sheraton House, Castle Park, Cambridge CB3 0AX, UK

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For a long time doctoral programmes have been moving away from the traditional view of the ‘master–apprentice’ model. This approach to doctoral education will soon become an anachronism as we see the growth and development of graduate schools, collaborative research groups and research networks.

The way in which research is undertaken has also changed dramatically over the last 20 years. Globalization of the research community, assisted by the growth of the Internet, electronic communication and on-line journals, helps to facilitate collaborative research.

The way doctorates are perceived within the wider community is also changing. The doctoral qualification is no longer seen solely as a vocational qualification — as preparation for an academic career or to be a researcher. Increasingly, it is also seen as a generic qualification — as an indicator of intellectual abilities, such as advanced problem-solving skills and reasoning. These competencies are increasingly attractive to a wider employer base, such as the financial, public and consultancy services. These sectors are not only employing PhD graduates for their knowledge base, but also for the skills and competencies they bring.

There is increasing recognition of the PhD degree (as a process as well as a product) as the development of a trained researcher, rather than solely for the production of a thesis. This is not to undermine the role of the thesis in the process of examining the doctoral candidate, but to recognise that the thesis is increasingly seen as the evidence of a trained researcher, rather than an end in itself.

Within the last two decades there has been the emergence of a new form of doctorate as a response to changing needs and opportunities. This is most marked in the emergence of the Professional Doctorate [1], which has led to a proliferation of titles and programmes, particularly in the UK. A common aspect of these programmes is that they are often undertaken by practitioners researching within their own ‘practice’. One of the most common Professional Doctorates is the EdD (doctorate in education). They are also becoming more frequent in the clinical sciences as practising clinicians look to further their careers through research.

Similarly the cohort of researchers studying for a doctoral qualification has changed. Tertiary education is no longer elitist and available only to the ‘few’. By widening access to bachelor and masters degrees the access to doctoral degrees has been opened up. There is still a long way to go before we see our ethnic diversity reflected in our doctoral cohort, and a very long way to go before we see this in our academic community, but change is happening. There are far greater proportions of

¹Email: janet.metcalfe@grad.ac.uk

women, minority ethnic groupings and mature researchers studying for doctorates. In the UK approximately half of our doctoral researchers are registered in part time programmes and a similar proportion are self-funding (generally balancing families, income generation and other employment with their doctoral studies).

However, perhaps one of the greatest changes in doctoral programmes is the increasingly explicit recognition of the skill base required to be an effective researcher. This has always been implicit in good supervision of doctoral candidates but now it is being made much more explicit.

We will explore the reasons for these changes in more detail in considering the current drivers for change.

Drivers for change

It is hard to identify the causes and effects on the changing nature of doctoral programmes. In the UK, the first catalyst for change came from the research councils (who provide government funding for doctoral researchers), who were becoming concerned about the low completion rates for the students they funded. In the late 1980s, the Economic and Social Research Council specified, as a requirement for academic departments, an average 70% submission rate within four years otherwise future funding could be jeopardised, and this ideology was picked up by the other research councils. Many departments had submission rates significantly below this and it had a powerful impact on both institutions and academics. Submission rates improved dramatically over the next decade. Targeting submission rates is very much a blunt instrument, but it had the desired effect of directing institutions' attention towards doctoral degrees, that is, it put the issue of the quality of research degree programmes on the agenda.

Traditionally, doctoral study was an individual experience between researcher and supervisor. There were as many different doctoral programmes as there were doctoral candidates. Although the university is responsible for awarding the doctoral degree, there were significantly less quality assurance mechanisms for the PhD compared with the bachelors and masters degrees. In many cases the only scrutiny of, or input into, the doctoral degree, external to the supervisor, was at the viva, which is a situation that is still possible today.

You may argue that the doctoral examination through the viva has, and continues, to work well — the thesis, and hence the work of the candidate, is subject to peer review as with any other research. I think this very much depends on whether your view of the output of the doctoral programme is the trained researcher or the thesis, which is a subject that will be addressed later.

I'd like to consider another important driver for change, which is the expectations of doctoral candidates. The feedback from researchers on the quality of their doctoral programmes is mixed. There is much evidence of researchers experiencing poor supervision, feeling isolated and excluded by the academic community, not being given sufficient support and access to careers advice. This is not isolated evidence, similar messages come from sources across disciplines, institutions and continents. There is an excellent survey of American doctoral researchers [2] that clearly expresses the differences between researchers' expectations and reality. Being supervised by a leading expert in your field may give

your work some academic credibility, but it does not guarantee that you receive an appropriate doctoral training. In common with the rest of society, today's and, particularly, tomorrow's doctoral researchers are demanding consumers who have high expectations of the quality of provision.

The changing nature of employment both within and outside academia is also a significant driver for change. There is a general trend towards globalization that is covered in other chapters which eloquently express the challenges this creates for doctoral education. There is an increasing need for portfolio management skills — a familiar concept in industry but now equally applicable to the academic environment. Academics are juggling the demands of research, teaching, administration, knowledge transfer, personnel management, fund raising, writing, promoting science, developing policy — to name a few! The long-term view is that employment will be increasingly portfolio based. There will no longer be 'jobs for life'; people will have a variety of jobs and roles. This all points towards PhD graduates needing a wider range of skills to succeed in these multi-tasking environments, which include academia.

In the UK, 50% of PhD graduates go directly into employment outside the academic field [3]. Employers are looking for more than just technical skills and knowledge. They are also looking for a range of skills and competencies — the ability to build relationships and interact with colleagues, communication skills, and cultural and strategic thinking.

These drivers present academia, in particular supervisors, with a range of challenges. Perhaps the most challenging is the need for a significant cultural shift within the academic environment, which is a message that is echoed by other contributors. The most significant requirement for cultural change is the need for academia to see the PhD degree as primarily a researcher training programme through the production of an original piece of research. The focus of supervisors and institutions needs to shift more towards the needs of the researcher to conduct the research, rather than needs of the research.

This slight, but fundamental shift raises all manner of issues for institutions, such as;

1. How to support supervisors in nurturing their doctoral candidates?
2. How to provide positive drivers for change?
3. How to share examples of good practice and to share experiences within a traditionally competitive environment?

The response in the UK

The UK higher education sector is currently going through this process of cultural change. Nationally there has been a 'blizzard of initiatives' relating to research degree programmes. I will introduce two of the most influential.

The UK has had a Code of Practice (CoP) relating to research degree programmes and issued by the Quality Assurance Agency since 1999. This was revised in 2004 [4] and incorporated many of the recommendations of a joint UK Funding Councils report 'Improving Standards in Postgraduate Research Degrees' [5]. The new CoP is designed to be student-centred so that researchers

can be confident about what they can expect from institutions and know what their own responsibilities are. The aim of the CoP is to achieve a consistently good experience for research students:

“This revised section of the Code is structured into a series of precepts and accompanying explanations. The precepts express key matters of principle that the higher education community has identified as important for the assurance of quality and academic standards. Individual institutions should be able to demonstrate they are addressing the matters tackled by the precepts effectively, through their own management and organisational processes, taking account of institutional needs, traditions, culture and decision-making. The accompanying explanations show why the precepts are important.”

The CoP also takes into account the recommendations of Sir Gareth Roberts’ review ‘SET for Success’ [6] and UK research councils joint statement on skills training requirements for research students [7], which identifies the breadth of skills and competencies that doctoral researchers should develop by the end of their research degree programme.

Some of the key principles within the CoP are that supervision of doctoral candidates should be by supervisory teams not sole supervisors, and that there are regular progress reviews, which are independent of the supervisory team. It also incorporates the principles of using training needs analyses to explore the development needs of the researcher, and encourages the use of personal development planning (PDP) [8] processes to enable researchers to reflect on their personal and professional development over the course of their PhD degree.

Another influential initiative is the ‘SET for Success’ review [6], which looked into the supply of people with science, technology, engineering and mathematics skills. This 2001 review highlighted that, currently, PhD programmes “do not prepare people adequately for careers in business or academia. In particular there is insufficient access to training in interpersonal and communication skills, management and commercial awareness”.

Sir Gareth Roberts [6] recommended that “...major funders of PhD students should make all funding related to PhD students conditional on students’ training meeting stringent minimum standards...” and institutions “...should include the provision of at least two weeks’ dedicated training a year, principally in transferable skills...”. This recommendation, alongside others relating to research degrees (including improving stipends and degree length), was subsequently funded by the UK government.

The UK GRAD Programme (<http://www.grad.ac.uk>), funded by the UK research councils, has been operating within this environment since 2002. Our aims are very much in line with the CoP [4] and ‘SET for Success’ [6] objectives, which are to support the personal and professional development of researchers. We do this by supporting institutions in the incorporation of these aims into their research degree programmes.

We work with the sector and all stakeholders to:

1. raise the profile of the importance of personal and professional development in researcher training for all stakeholders;
2. encourage the integration of, and opportunities for, personal and professional skills development in research degree programmes, and;
3. encourage and share good practice within higher education institutions.

As a national resource, we continue to innovate, develop and provide exemplar ways of embedding personal and professional development and career management skills

UK GRAD is structured around a Centre for Excellence in Cambridge and a network of regional hubs (based in universities), and operates with steering groups formed from the institutions within a particular region. The hubs help universities, staff and supervisors in their region to deliver high-quality, needs-based, personal and professional development for researchers. Principally this will be through building networks, disseminating good practice, and providing access to advice, information on courses, materials and other resources.

Through the Centre for Excellence we undertake a range of activities to support universities:

1. Through GRAD courses — we run national, regional and local courses for postgraduate researchers, ‘train the trainer’ courses for training providers and supervisor training.
2. Through events — at national and regional level, such as conferences, good practice workshops and policy fora, to inform on national and international developments in research degree programmes, share good practice and develop networks.
3. Through publications — researching and publishing reviews of the topical issues in postgraduate research training, e.g. the use of PDP for postgraduates, PhD graduate destinations.
4. Through on-line resources — providing downloadable resources and advice for developing postgraduate research skills, such as databases of practice in institutions, training resources, use of personal development plans for researchers, discussion fora and a gateway to advice and resources ‘Just for Postgrads’.

What UK GRAD has also been able to provide is an environment where the sector, national stakeholders and employers can meet and exchange views on the issues from different perspectives. We have created an environment that encourages collaboration, sharing of practice where we can look for pragmatic and achievable ways to enhance research degree programmes.

Future challenges

However, we still have a long way to go. We have not won the hearts and minds of all academics within the UK. Many are not convinced of the appropriateness of the shift in emphasis between the research and the researcher. We recognise that there is a dearth of evidence that developing researchers’ skills makes a difference and, therefore, we have set up a sector-led group, the ‘Rugby Team’, to identify ways in which we can evaluate the effectiveness of the skills agenda.

In common with the rest of Europe, there is much to do to get recognition for the profession of researcher. It is likely that the UK will use the European Charter and Code of Conduct for the recruitment of researchers as a template to develop a CoP for researchers.

And finally, the changing nature of research degree programmes in the UK has raised the question ‘What is a PhD?’ If it moves more towards the

development of a trained researcher, then this raises more questions, such as, is the current viva the most appropriate way to examine it? Should professional development be considered as part of the process? Is the time coming when we need alternative ways to assess the doctoral candidate?

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