



Doctoral Degree Characteristics

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**UK Quality Code for Higher Education,
Part A: Setting and Maintaining Academic Standards**

Contents

About this Statement	1
How can I use this document?	1
Equality and diversity	1
Relationship to legislation.....	1
Introduction.....	2
1 Context for and purposes of the doctorate	3
1.1 Context for the doctorate.....	3
1.2 The doctorate in Europe and internationally	3
1.3 Purposes of the doctorate	4
2 Forms of doctorate and summary of award titles	5
2.1 UK doctoral awards and their main characteristics	5
Doctor of Philosophy (PhD or DPhil, used interchangeably)	5
PhD by publication.....	6
Integrated PhD (PhD)	6
Professional and practice-based (or practitioner) doctorates	7
2.2 Summary of doctoral award titles with brief details of each qualification	8
2.3 Higher doctorates	11
2.4 Degree certificates	12
3 Key features of the content, structure and delivery of doctoral degrees.....	13
3.1 Overview.....	13
3.2 Entry to, and progression through, doctoral degrees	14
3.3 The research environment	14
3.4 The role of supervision	14
3.5 Training and professional development for doctoral candidates	15
4 Doctoral outcomes and assessment	17
4.1 Progress and review.....	17
4.2 Submission	17
4.3 Final assessment	17
4.4 Credit for doctoral degrees	19
5 Characteristics of doctoral graduates.....	20
Appendix: Members of the advisory groups for the Doctoral Degree Characteristics	22

About this Statement

This Doctoral Degree Characteristics statement was originally developed and published by QAA in 2011. This version forms the second edition.

How can I use this document?

This document is a statement about the characteristics of doctoral degrees. It describes the distinctive features of the doctorate in the UK.

You may want to read this document if you are:

- involved in the design, delivery (especially supervision) and review of doctoral programmes
- a prospective student thinking about undertaking a doctorate
- an employer, to find out about the knowledge and skills generally expected of doctoral graduates.

Those interested in and/or responsible for the design, delivery and review of doctoral programmes should read this document alongside the Quality Code, *Chapter B11: Research Degrees*. Current doctoral candidates and those interested in undertaking doctoral study may find it helpful to refer to *The UK Doctorate: A Guide for Current and Prospective Candidates*.

Explanations of unfamiliar terms used in this statement can be found in QAA's glossary.¹ QAA has also published a general guide to quality assurance in higher education.²

Equality and diversity

This statement about the characteristics of doctoral degrees forms part of the Quality Code. The Quality Code embeds consideration of equality and diversity matters throughout. Promoting equality involves treating everyone with equal dignity and worth, while also raising aspirations and supporting achievement for people with diverse requirements, entitlements and backgrounds. An inclusive environment for learning anticipates the varied requirements of learners, and aims to ensure that all students have equal access to educational opportunities. Higher education providers, staff and students all have a role in, and responsibility for, promoting equality.

Relationship to legislation

Higher education providers are responsible for meeting the requirements of legislation and any other regulatory requirements placed upon them, for example by funding bodies. This statement does not interpret legislation nor does it incorporate statutory or regulatory requirements. Sources of information about other requirements and examples of guidance and good practice are signposted within this statement where appropriate. Higher education providers are responsible for how they use these resources. QAA takes no responsibility for the content of external websites.

¹ The QAA glossary is available at: www.qaa.ac.uk/about-us/glossary

² A general guide to quality assurance can be found at: www.qaa.ac.uk/assuring-standards-and-quality

Introduction

Postgraduate degrees in the UK are diverse and wide ranging. Their purposes reflect both the interests and ambitions of students, and the traditions and needs of particular disciplines and professions. Postgraduate degrees variously enable students to: specialise in a particular subject or subjects; pursue research; develop professional specialisms; and undertake professional development. All postgraduate programmes have in common an emphasis on independent learning and autonomy, and an orientation toward knowledge at the forefront of the discipline. Postgraduate degrees at the highest level (doctoral) are distinguished by the requirement to create new knowledge, or apply existing knowledge in a new way.

The doctoral degree is one the most well-known and well-established postgraduate qualifications in the UK. This statement provides a summary of UK doctoral degree characteristics, highlighting similarities and differences between doctoral degrees. It is intended as a practical reference text that provides information about UK doctoral programmes.

Unlike the Quality Code, *Chapter B11: Research Degrees*, this document does not cover research master's degrees such as the MPhil, except where they form part of a doctoral programme.

Section 2 of this statement provides a description of the broad types of doctoral awards, and their defining characteristics as individual qualifications. The descriptions are indicative rather than comprehensive and intended to give a flavour of what makes each award distinctive. All UK doctorates require the main focus of the candidate's work to be their contribution to knowledge in their discipline or field, through original research, or the original application of existing knowledge or understanding.

Throughout this statement we refer to doctoral candidates rather than doctoral students. The consensus is that this is the most suitable term to use for this statement, even though in some higher education providers a distinction is made between 'student' and 'candidate' depending on whether the individual has successfully completed some kind of transfer of status stage. Some providers may use words other than 'student' or 'candidate', for example, 'researcher' to describe an individual undertaking a research degree.

1 Context for and purposes of the doctorate

1.1 Context for the doctorate

For many years the PhD (or DPhil in some universities) was the main doctoral qualification in the UK. Since the early 1990s, the form of the UK doctorate has diversified, leading to differently structured degrees to accommodate the needs of a diverse student population. Doctorates other than the PhD have evolved, often in response to the needs of different professions, leading to the emergence of the titles 'professional' doctorate, and 'practice-based' or 'practice-led' doctorate.

Initially, and beginning with the Doctor of Education (EdD), professional doctorates in different subjects had a significantly different structure from the PhD, which was acquired through the 'apprenticeship' model³ and based on independent enquiry by the candidate. Most professional and practice-based doctorates (see definitions below) have always included structured elements such as lectures and seminars, and have had an emphasis on acquiring professional skills in addition to conducting original research.

With increased attention to research and generic skills training for all doctoral candidates (see section 2), the PhD/DPhil has also become more structured, especially in the earlier years of study. Research councils have explicit but flexible requirements for the development opportunities available to the candidates they support financially through studentships. All UK doctorates, however, continue to require the main focus of the candidate's work to be their contribution to knowledge in their discipline or field, through original research, or the original application of existing knowledge or understanding. In professional and practice-based doctorates the research may be undertaken in the workplace and may have a direct effect on improving the professional practice of individuals and their host organisation.

Professional, statutory and regulatory bodies (PSRBs) are often involved in the design and delivery of doctoral degree programmes, especially professional doctorates. They may contribute to the design of any structured elements of the doctorate, including skills training components, and to assessment criteria. Members of PSRBs may also act as external examiners of doctoral candidates. These contributions help to ensure the consistency of outcomes for doctoral graduates in particular disciplines, and in some cases to maintain standards in a relevant profession.

1.2 The doctorate in Europe and internationally

The UK actively contributes to the development of the doctorate worldwide while assuring that global changes are taken into account in UK policy-making and practice.

It is important to benchmark the UK doctorate in a global environment in order to promote mobility and to strengthen career opportunities for UK doctoral graduates.⁴ Key factors affecting the reputation of UK doctorates include having in place adequate and rigorous quality assurance mechanisms for doctoral programmes, and the ability to demonstrate consistency of standards across varied programmes. This document provides for a comparison between doctorates and demonstrates the equivalence among doctorates of all kinds.

³ The 'apprenticeship' model dates back to the early nineteenth century, where the PhD candidate followed a form of apprenticeship and was normally awarded the degree in middle age. It is closely associated with F. W. H. Alexander von Humboldt, the German/Prussian physical geographer and anthropologist.

⁴ A HEFCE-commissioned report, 'International comparisons in postgraduate education: quality, access and employment outcomes', published in September 2014, provides insights between UK, Scotland and six other countries. See: www.hefce.ac.uk/pubs/rereports/year/2014/pginternational/

The UK doctorate in all its forms has been confirmed as being in alignment with European-wide guidance, in particular, with the Framework for Qualifications of the European Higher Education Area (FQ-EHEA).⁵ This independent verification involving colleagues from non-UK European countries as well as from the UK shows recognition of UK qualifications as having Europe-wide equivalence and standing, which supports the mobility of graduates within Europe.

This continues to increase through programmes such as the EU Erasmus Mundus initiative, and a growing number of UK universities offer joint or jointly-supervised doctoral programmes with non-UK European partner institutions.

1.3 Purposes of the doctorate

Doctoral degrees fulfil many purposes. They are the most individually distinct of the academic qualifications available because of their roots in research and the pursuit of knowledge, and their requirement for the candidate to produce work requiring original thought, based on independent study. Whereas until the late twentieth and early twenty-first centuries the purpose of acquiring a doctorate was for entry to the academic profession, now this is just one of many options for doctoral graduates, who enter diverse jobs across all sectors, bringing their research skills to bear in their own professional context. It is now the case that most academic staff in UK universities have a doctoral degree, and this contributes to the high quality research output from higher education providers. Some individuals, on the other hand, study at doctoral level purely as a personal challenge, or for interest, with no intended 'career' relevance.

UK doctorates have developed to reflect the different purposes for which candidates register for doctoral degrees.⁶ Development has also been influenced by sponsors and employers of doctoral graduates, continuing professional development being a key reason for the emergence of professional doctorates.

⁵ See: www.qaa.ac.uk/assuring-standards-and-quality/the-quality-code/qualifications

⁶ A HEFCE commissioned report, published in Sept 2014 provides insights into recruitment and selection strategies across 60 English HEIs. See: www.hefce.ac.uk/pubs/rereports/year/2014/pgrrcruitment/

2 Forms of doctorate and summary of award titles

2.1 UK doctoral awards and their main characteristics

The descriptions provided below are intended to show both the similarities that exist among doctoral awards and their defining characteristics as individual qualifications, so that it is possible to distinguish between them and the different purposes they fulfil. The descriptions are not comprehensive but are intended to give a flavour of what makes each award distinctive.

Doctor of Philosophy (PhD or DPhil, used interchangeably)

The first Doctor of Philosophy (DPhil) in the UK was awarded by the University of Oxford in 1917. The title has been retained since for degrees awarded on the basis of registration on a formal programme of study offered by an academic institution, and an output that constitutes original research as defined by the academic community into which the candidate wishes to be admitted.

The main characteristics of Doctor of Philosophy awards are as follows:

- Still the most common form of doctorate in the UK, PhD or DPhil programmes are based largely on a supervised research project over three to four years (full-time; part-time candidates normally take up to twice as long), during which the candidate is registered at a higher education institution. All doctoral candidates are required to make an original contribution to knowledge by conducting an independent research project; the form this takes depends on the candidate's academic discipline and degree.
- More recently, there has been a greater emphasis on personal and professional development in PhD programmes in the UK, especially during the period of ring-fenced 'Roberts' funding at the beginning of the twenty-first century, managed by Research Councils UK, and continued by initiatives such as the Vitae Researcher Development Framework⁷. This has led to increasingly structured programmes that include both research and generic skills training. Acquisition of these skills, together with evaluation of the candidate's discipline-specific research skills, is generally monitored or assessed through annual progress reviews. Whether or not the structured elements are formally assessed, examination of the research degree itself focuses on the quality of the candidate's thesis or equivalent and his/her defence of it at the viva voce ('viva').
- Practical work, such as in the creative and performing arts, may well form part of a candidate's PhD output, or the output from professional and practice-based doctorates. Artefacts and outputs of a practical nature, sometimes involving multimedia, are related to the candidate's discipline rather than to a form of degree programme.

In the final assessment, candidates are assessed on their thesis, portfolio, artefact or composition (the latter two normally, and the portfolio sometimes, are accompanied by a critical commentary on the work), and by an oral examination, the viva. A minimum of two examiners are usually present at the viva, one internal and a minimum of one external. Some universities allow the supervisor to attend the viva, with the candidate's agreement, and some universities involve an independent chair or convenor to assure fairness and consistency of practice, as well as adherence to assessment regulations.

⁷ See: www.vitae.ac.uk/rdf

PhD by publication

Many research degree-awarding bodies award the PhD/DPhil 'by publication' or 'by published work'. This may be reflected in the title (PhD by Publication, or by Published Work).

Different research degree-awarding bodies have different eligibility requirements and may award the qualification infrequently.

The main characteristics of PhD by publication awards are as follows:

- The PhD by publication shares most of the characteristics of the PhD/DPhil and is normally awarded on the basis of a series of peer-reviewed academic papers, books, citations or other materials that have been published, accepted for publication, exhibited or performed, usually accompanied by a substantial commentary linking the published work and outlining its coherence and significance, together with an oral examination at which the candidate defends his/her research.
- A PhD by concurrent publication is now permitted by some institutions, particularly in science and engineering subjects, whereby a candidate can present a portfolio of interconnected, published research papers contextualised by a coherent narrative, demonstrating overall an original contribution to knowledge. Such publications may include papers, chapters, monographs, books, scholarly editions of a text, technical reports, creative work in relevant areas, or other artefacts.
- In the case of a PhD by publication or published work, the candidate may not be required to register formally for the qualification or to have followed a formal programme of study towards the degree; in other cases a shorter than normal period of registration is permitted for such candidates, who may already be graduates or academic staff members of the institution, or of a partner institution.
- In the assessment of a PhD by publication the candidate is normally examined on these materials and the commentary, sometimes supported by a CV. The final assessment takes the same form as outlined above for other PhDs, namely assessment of the thesis and/or portfolio and an oral examination. If the candidate is a staff member of the university, then it is usual to appoint two external examiners for the final assessment in addition to an internal examiner.

Integrated PhD (PhD)

Some universities have introduced the 'integrated' PhD in a range of subjects.

The main characteristics of Integrated PhD awards are as follows:

- These programmes are structured in nature, normally with a choice of taught modules and a range of research topic options within the field of study, and include formal lectures, research seminars and workshops at master's level during the first year or two years.
- The supervised research project may begin at the point of registration and be undertaken in parallel with structured elements, or may depend on successful completion of taught elements and be undertaken in years three and four.
- Integrated PhDs normally offer exit awards at master's level based on successful completion of taught modules. If in a scientific discipline, integrated PhDs may offer candidates the opportunity to convert to a specialist research area from other scientific disciplines.
- Research training provided through research council funded centres for doctoral training is similar to the integrated PhD model.

- Although some integrated PhD candidates may have to pass taught elements, the overall assessment for the award is submission of a satisfactory thesis, portfolio or similar output and successfully passing an oral examination with independent examiners, as for the PhD and PhD by publication.

Professional and practice-based (or practitioner) doctorates

Often, professional and practice-based doctorates are the choice of doctoral degree for mid-career professionals; in a few cases they are required for entry to a profession, namely as a licence to practise. Even if not studied for career reasons, such degrees can provide an opportunity for individuals to situate professional knowledge developed over time in a theoretical academic framework. As a result, professional and practice-based doctorates have different structures and attract candidates at distinct stages of their lives and careers.

Doctorates in which the candidate is involved in professional learning may fall in either the professional or practice-based category, depending on degree content and context, and on the candidate's circumstances. In this guide, we have chosen to combine information about professional and practice-based doctorates in one section to avoid repetition, and because, at the macro level of doctoral characteristics that this guide is concerned with, it is difficult to address detailed differences. This approach may not be in line with some of the thinking about these degrees, but we have taken care to make clear the differences between the two, where they are significant. Individual institutions make the final decision about whether a qualification should be described as a professional or practice-based doctorate, using defining criteria that may differ somewhat.

Titles of professional and practice-based doctorates normally reflect the subject or field of study of the candidate and thus there is considerable variation in nomenclature. However, institutions normally use the convention of 'Doctor of...', for example, Doctor of Education (EdD) or Doctor of Social Science (DSocSci). This helps to achieve a degree of consistency, with institutions making the final decisions about the titles of their academic awards in consultation with any relevant PSRBs.

Professional and practice-based doctorates normally include structured elements such as lectures, seminars, and workshops, with an emphasis on the candidate acquiring skills relevant to their professional practice, in addition to producing original research. Some programmes may also provide other forms of learning support such as e-learning, tutorials, peer learning and assessment and so on.

The main characteristics of professional and practice-based doctorates are as follows:

- Professional and practice-based doctorates are based on a supervised research project and usually contain significant lecture and seminar elements. In some programmes, these elements are assessed and either a pass/fail or a mark or grade is given; such assessments may act as incremental hurdles for the candidate as part of his/her progress towards the independent research project. UK professional doctorates are designed to meet the needs of the various professions in which they are rooted, including: business, creative arts, education, engineering, law, nursing and psychology.
- Research projects in these degrees are normally located within the candidate's profession. In practice-based or practitioner doctorates the candidate's output involves practice-related materials. For example, in the performing arts, the output involves a written commentary (which may be shorter than the traditional PhD thesis, and includes both reflection and context), and one or more other artefacts, such as a novel (for creative writing), a portfolio of work (for art and design), or one or more performance pieces (for theatre studies, dance or music). In clinical practice-based doctorates such as the DClinPsy or the MD, the research is likely to draw on clinical

work involving clinical trials or other work with patients in the practical/clinical setting; the clinically based and academic research are then combined in the candidate's thesis or portfolio.

- Professional doctorates are normally rooted in an academic discipline as well as in a profession (education, engineering, law and so on). Candidates whose research arises out of practice alone, who are not working in an academically related professional field and who spend most of their time learning in their work environment rather than in a provider, would be more likely to complete a practice-based doctorate. In both practice-based and professional doctorate settings, the candidate's research may result directly in organisational or policy-related change. Some practice-based doctorates have a general title to reflect their distinctiveness.
- As for the PhD/DPhil, professional and practice-based doctorates are assessed through submission of a thesis or portfolio and, in the vast majority of cases, an individual oral examination (viva voce or viva). The provider's definition of whether the award is a professional or practice-based doctorate will have a bearing on the assessment criteria for the degree. In the assessment of professional and/or practice-based doctorates, examiners' criteria may include the extent to which the candidate understands current techniques in the discipline, for example through demonstrating engagement with and use of research methods and how they inform professional practice.

2.2 Summary of doctoral award titles with brief details of each qualification

Table 1 is not completely comprehensive and does not necessarily cover all doctoral degree titles, but shows some of the most common award titles and their abbreviations. It provides a quick reference guide to UK doctoral qualification titles.

The UKCGE publication: *Professional Doctorates in the UK 2011* provides a summary of the principal professional doctorate qualifications in different disciplines at the time of publication, and has been used as a reference document for some of the brief details below.⁸

⁸ See: [www.ukcge.ac.uk/pdf/Professional%20Doctorates%20in%20the%20UK%20\(2011\).pdf](http://www.ukcge.ac.uk/pdf/Professional%20Doctorates%20in%20the%20UK%20(2011).pdf)

Table 1 - Summary of the most common doctoral award titles and their abbreviations

Full title	Abbreviation	Description
Doctor of Philosophy		
Doctor of Philosophy	PhD or DPhil	The PhD is the most common qualification and is offered in most academic subjects in the UK. The normal maximum period of study is four years full-time, eight years part-time. Most PhD programmes include research methods and other skills training. Candidates funded by UK research councils or other sponsors are required to meet their funder's criteria as well as the institutional regulations for their programme. The title may have additional information attached, for example, 'in Musical Composition'.
Integrated PhDs		
Integrated PhD	PhD	The Integrated PhD is normally highly structured in the first two years and often attracts international candidates. As for the PhD above, this may have additional information attached, for example, 'in Molecular Biology'.
Professional or practice-based doctorates		
Professional Doctorate	DProf	The DProf is a practice-based (or practitioner work-based) doctorate and is often taken on a part-time basis. Professional practice is at the heart of the DProf, which is usually open to experienced professionals who are employed in any area of work, including those in emerging professions and disciplines. Key features include: the degree has a practice-based rather than an exclusively institutional focus; candidates are normally working while completing the doctorate and already possess significant professional experience. Successful completion of the degree normally leads to professional and/or organisational change that is often direct, rather than achieved through the implementation of subsequent research findings.
Doctor of Public Health	DrPH	Entrants to the DrPH are required to have at least two years' experience in public health management and a master's degree in a cognate subject. The programme is intended for professional managers and leaders in global health and public health practice, who are faced with understanding and applying scientific knowledge in practical contexts. The programme therefore links theory and practice and is appropriate for a range of applicants, including international candidates. The minimum period of study is three years for full-time candidates and four years for part-time candidates.

Doctor of Social Science	DScSci	This is a generic title for a group of social sciences professional doctorates, some of which may also have individual titles, in subjects including psychology, criminal justice, professional practice, health, social care and social work. Most doctorates in this group are regulated by PSRBs. The minimum period of study for DSocSci and other social sciences professional doctorates is three years full-time. Part-time routes are normally available to those working full-time.
Doctor of Business Administration	DBA	The DBA is more often studied on a part-time basis by working professionals rather than full-time. Guidelines for the DBA are available from the Association of Business Schools (ABS), a professional body for the field.
Doctor of Clinical Psychology	DClinPsy	This is a practice-based professional doctorate. The DClinPsy is different from most other professional doctorates because it provides a licence to practise for UK clinical psychologists. The Health and Care Professions Council (HCPC) is the body to which individuals apply for registration as a licensed clinical psychologist. All clinical psychology training is accredited by the British Psychological Society (BPS) and also has to be approved by the HCPC, which is responsible for the Standards of Proficiency clinical psychologists have to demonstrate. These cover: conduct, performance and ethics, continuing professional development, and proficiency.
Doctor of Dental Surgery	DDS	The DDS is normally offered specifically for practising clinicians who wish to further develop their research skills and apply their research to clinical problems. It involves a clinical component as well as research methods training. The duration of the degree is three years full-time.
Doctor of Education	EdD	The EdD is usually a work-based doctorate completed by experienced education professionals. It is often taken part-time.
Doctor of Educational Psychology	DEdPsy	The DEdPsy is normally a four-year programme for full-time candidates and around six years part-time. The degree is designed to meet the needs of practising educational psychologists. Entrants are likely to have a bachelor's degree in psychology and often a master's in educational psychology, as well as at least one year's experience in the profession. Courses are usually accredited by the British Psychological Society and approved by the Health and Care Professions Council.

Engineering Doctorate	EngD	EngD programmes are offered within research themes, including a range of industrial and engineering topics, including large-scale IT systems and environmental technologies. In recognition of the specialised nature of their training, EngD candidates are commonly called Research Engineers (REs).
Doctor of Health Research	DHRes	The DHRes is one of a group of professional doctorates in health and social care. Doctoral candidates in these disciplines are likely to be mid or senior career professionals who already have a strong professional background in their field. Such doctorates normally include clinical research and are likely to include clinical-related improvements and/or innovations.
Doctor of Medicine	MD, or in some cases, MD (Res)	Although the MD does not lead to a license to practise in a clinical setting, the research will usually have a clinical focus, but other aspects of medical and health care provision may form the basis of the research topic. Applicants are usually required to hold an MBBS or BDS (Bachelor of Medicine, Bachelor of Surgery or Bachelor of Dental Surgery) degree or equivalent; be registered with the General Medical Council or the General Dental Council; and have at least three years of clinical or scientific postgraduate experience. The period of study for the MD is usually two years full-time or four years part-time. In some universities, the MD is classed as a higher doctorate (similar to the DSc (Doctor of Science)).
Doctorate in Music	DMus	The DMus is a doctorate in Music. However, in some providers this abbreviation refers not to a Doctorate in Music but to a higher doctorate. Others use titles for doctorates in music which reflect the candidate's topic, for example, 'PhD in Musical Composition'.

2.3 Higher doctorates

Higher doctorates (typically the Doctor of Science, DSc or ScD and the Doctor of Letters, DLitt) are a higher level of award than the DPhil/PhD or professional or practice-based doctorates. They are normally awarded by providers to staff who have earned a high reputation for research in their field through their professional practice, which may or may not have been gained in an academic institution. This Doctoral Degree Characteristics statement does not therefore apply to higher doctorates.

Individual higher education providers' regulations specify a limited range of titles for higher doctorates, which can be awarded either for a substantial body of published original research of distinction over a significant period or as an 'honorary' degree, to recognise an individual's contribution to a particular field of knowledge.

2.4 Degree certificates

As autonomous bodies, higher education providers decide how to represent individual qualifications on degree certificates or equivalent.

Guidance on naming qualifications is provided in the frameworks for higher education qualifications.

Guidance on awards that are made by more than one provider is provided in the Quality Code, *Chapter B10: Management of Higher Education Provision with Others*. This guidance is particularly relevant to doctoral degrees, as candidates increasingly may wish to spend part of their time studying at another provider either in the UK or further afield, and may receive sponsorship from international organisations for research outside their home provider.

3 Key features of the content, structure and delivery of doctoral degrees

3.1 Overview

Studying for a doctorate means doing, as well as learning about, research. Doctoral education is, by nature, an individual experience; even if a doctoral candidate is part of a cohort, which is becoming increasingly likely, each person's route to the degree is different when a range of factors is considered, including:

- the field in which the candidate is studying and the broad subject area, whether single subject or multi-disciplinary
- the individual's experience (academic and life) before enrolling on the doctorate
- the qualification chosen
- the university/ies at which the candidate is studying, depending on whether he/she is enrolled on a degree which is jointly offered by more than one provider
- the school or department in which the candidate is based and the form in which skills training is provided
- the candidate's mode of study, for example full-time, part-time, campus-based or distance learning
- the candidate's relationship with the supervisory team, the members of which may be based in different providers, especially if a joint degree, or in collaboration with industry
- the candidate's relationship with peers
- whether funding is available for the degree, and any potential requirements that the sponsor may stipulate.

This is not a comprehensive list but it begins to demonstrate the inadvisability of generalising about the educational experience of a doctoral candidate. The content, structure and engagement with a doctoral programme vary significantly according to the candidate's subject area and personal circumstances.

The important points are as follows:

- Doing and learning about original research provides a different experience for each individual, but every discipline has clear expectations of what this means for the candidate who is working towards a doctoral qualification. In interdisciplinary research contexts, for example in centres for doctoral training, discipline-based expectations are combined to deliver a broad-based research training without dilution of subject-specific requirements.
- Irrespective of the type of programme, provider or subject, certain elements are key to the success of doctoral programmes: a high-quality and vibrant research environment; supervision that is appropriate to the candidate and the stage he/she has reached in the programme; access to resources and development opportunities; opportunities for peer interaction and support; demanding but fair academic standards; and the need for the candidate to take responsibility for his/her own learning and research output.

3.2 Entry to, and progression through, doctoral degrees

Individual institutions specify entry requirements for doctoral degrees. Increasingly, doctoral candidates possess a master's degree, but in some subjects it is usual to begin a doctoral programme with a bachelor's degree or, in some circumstances, its professional equivalent.⁹

Related to the funding structures used by some research councils, some doctoral degrees are structured around a '1+3' model, with candidates completing a taught master's programme before embarking on doctoral studies, but this model has now been phased out by the majority of research councils.

In other cases, candidates are initially registered for a master's degree and transfer to doctoral status at or around the end of the first year on successfully completing a formal progression event.

Increasingly, to meet the needs of some international funding bodies, some institutions register candidates immediately for a doctoral programme and confirm (or otherwise) the doctoral candidate status at the first formal, usually annual, progression event.

Some candidates are able to enter doctoral programmes on the basis of their prior professional knowledge and experience: the Quality Code, *Chapter B11: Research Degrees* summarises the most common acceptable routes for entry to research degree programmes.

3.3 The research environment

As is widely acknowledged and highlighted in the Quality Code, *Chapter B11: Research Degrees*, the quality of the research environment is critical to the provision of doctoral degree programmes. Access to an active and vibrant research environment, including contact with other researchers, is fundamental to doctoral candidates' success, irrespective of subject, mode of study, location, and so on. *Chapter B11* summarises some of the conditions that are present in high-quality research environments.

3.4 The role of supervision

The supervisor is fundamental to the support and development of the doctoral candidate. The candidate's relationship with his/her supervisor is key to a successful research degree programme. Some universities give awards for excellent supervision, based on evidence provided by staff and doctoral candidates. Also, some supervisors can count their supervisory achievements in making a case for promotion.

Effective supervision is often linked to a candidate's ability to complete within an agreed time frame, and to maintaining a high quality learning experience in, doctoral programmes. The Quality Code, *Chapter B11: Research Degrees* emphasises the fundamental role of supervisors in maintaining quality and consistency across doctoral programmes. It promotes the use of supervisory teams, not only to provide effective support for candidates but to provide a framework in which new supervisors can gain experience alongside those with more experience.

Professional development opportunities for supervisors of doctoral candidates are common and Higher Education Providers offer a variety of opportunities: some have separate induction events for new and experienced supervisors; others favour joint programmes that enable

⁹ A HEFCE commissioned report, published in 2013, explores the trends in transition from undergraduate to postgraduate study, focusing on full-time first degree UK qualifiers from English higher education institutions between 2002-03 and 2010-11. The report demonstrates the diversity of routes taken to postgraduate degrees, including Doctorates. See: www.hefce.ac.uk/pubs/year/2013/201313/name.82612.en.html

supervisors with different backgrounds and experience to learn from one another. It is also common for supervisor development to occur at school or faculty level, or in Doctoral Training Partnerships and Centres, where there is a common understanding of supervisory roles in a particular group of subjects. There is no single model, but as the Quality Code, *Chapter B11: Research Degrees* makes clear, higher education providers support and encourage supervisors to engage in development opportunities.

3.5 Training and professional development for doctoral candidates

Doctoral candidates are offered a variety of development opportunities during their programme. Specifically, they undertake research methods training relevant to their subject area, together with professional skills development that is an important part of preparing for the next stage in their careers.

Skills development programmes take different forms in different higher education providers, with some being more formal than others; some compulsory (for example successful completion of some elements being a pre-requisite to graduating with a doctorate); others optional but strongly recommended; some are credit-based, others not. The approach in every provider that awards research degrees is informed by the Quality Code, *Chapter B11: Research Degrees*, which states that higher education providers 'provide research students with appropriate opportunities for developing research, personal and professional skills'.

Providers give their research candidates opportunities to acquire and develop skills and competence in a range of areas, including: research skills and techniques, research environment, research management, personal effectiveness, communication skills, networking and teamworking, and career management, as outlined in the Researcher Development Statement,¹⁰ a summary of the Vitae Researcher Development Framework,¹¹ designed to integrate more effectively the requirements of doctoral researchers with those of other researchers at different career stages. The Researcher Development Framework (RDF) 'describes the knowledge, behaviours and attitudes of researchers and encourages them to aspire to excellence through achieving higher levels of development'.

The effectiveness of these researcher development initiatives in preparing doctoral researchers for subsequent careers in research is illustrated in the Vitae publication *What do Researchers do? Doctoral Destinations and Impact Three Years On*.¹² This shows for doctoral graduates across many disciplines how the doctoral qualification and the skills and attributes they acquired during their programme of study helped them to secure employment and quickly start to make valuable contributions in their new settings. Using the Impact and Evaluation Group's Impact Framework,¹³ analysis of the Vitae career profiles of researchers¹⁴ shows that nine out of ten doctoral graduates in the career profiles recognised that they had acquired knowledge and skills through participating in and completing their doctoral programme, and three-quarters reported a positive change in behaviour, such as learning how to manage projects more effectively and being better at time management.

A number of different structures exist through which skills training is delivered. Three key examples are: graduate schools, Doctoral Training Partnerships and Centres for Doctoral Training. Professional development can also be delivered through employability centres.

¹⁰ See: www.vitae.ac.uk/rds

¹¹ See: www.vitae.ac.uk/rdf

¹² See: www.vitae.ac.uk/wdrd

¹³ See: www.vitae.ac.uk/impact

¹⁴ See: www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework/researchers-how-you-can-use-the-vitae-researcher-development-framework/researcher-profiles-1

Graduate schools - These play an important part in the delivery of personal, professional and career development skills training for research candidates.¹⁵ Some combine taught and research postgraduates, others are solely for research candidates. The structure and coherence of the graduate school structure, whether single-subject, at faculty or school level, or as an institutional phenomenon (single institution or as part of a collaboration), also helps to encourage timely progress and completion and to provide postgraduates with a peer group network. Graduate schools may have a geographical location or may be virtual, with postgraduates from multiple institutions sometimes being part of a collaborative and possibly interdisciplinary graduate school.

Doctoral Training Partnerships (DTP)¹⁶ - These provide training for students across a broad range of subjects determined by a Research Organisation or consortia of Research Organisations. Partnerships involve strategic engagement between the Research Organisation(s) and the Research Council funder(s) in developing the overall programme of training.

Centres for Doctoral Training (CDT)¹⁷ - Centres provide training for students within focused research areas, often defined strategically by the Research Council funder(s) from the outset. Centres can be focused on academic or industrially relevant research topics, or a mix of both.

DTPs and CDTs give students the opportunity to develop and carry out their doctoral-level research with the added benefit of taught courses to give them a solid background in and knowledge of their chosen discipline. They also provide a breadth of professional development training opportunities to enhance students' capability and competencies to develop a world-class, highly skilled workforce. In some programmes there is a mandatory requirement for doctoral candidates to participate in flexible professional internships during their doctorate. The objective is to support employability, in particular to deepen the awareness of employers to doctoral candidates and alert them to their skills and attributes. It is also intended to widen candidate's experience beyond academic to alert them to the types of careers in which their research training could have an impact.

An ongoing issue is the potential creation of a 'two-tier' system for postgraduate training, with some doctoral candidates being part of a DTP or CDT and others not. Further information about postgraduate funding can be found on the individual research councils' websites, accessed from the Research Councils UK home pages.

¹⁵ The UK Council for Graduate Education (UKCGE) has tracked the development of graduate schools, beginning with a survey in 1994, at which time such schools were a 'relatively new phenomenon' (Denicolo et al, 2010) in the UK, undertaking a further review in 2004 (Woodward et al) and more recently conducting a major review (UKCGE Review of Graduate Schools in the UK, Denicolo et al, 2010).

¹⁶ For further details see Research Councils UK, *Research Council Common Terminology for Postgraduate Training*, see: www.rcuk.ac.uk/RCUK-prod/assets/documents/skills/RCUKCommonTerminologyforPostgraduateTraining2013.pdf

¹⁷ For further details see Research Councils UK, *Research Council Common Terminology for Postgraduate Training*, see: www.rcuk.ac.uk/RCUK-prod/assets/documents/skills/RCUKCommonTerminologyforPostgraduateTraining2013.pdf

4 Doctoral outcomes and assessment

Assessment is at the heart of doctoral degree standards. The candidate's achievements and research-relevant attributes are tested through the final doctoral assessment, which includes a thorough review of the submitted written materials (and artefacts if appropriate), followed by a viva, or oral examination, at which the candidate defends the thesis. The importance of the single major research project as the principal output of a doctoral degree is demonstrated by the rigour and format of the final assessment process.

4.1 Progress and review

Progression towards achieving doctoral outcomes is assessed during the programme, both at formal progression panels, when gaps in knowledge or skills are identified, and informally through discussions with the candidate's supervisor. Although passing module assessments is a formal part of progression through the programme for some candidates, these milestones do not necessarily contribute to the overall assessment of the doctorate or to the award of the qualification; rather, they represent gateways for progression to the next stage of the programme. In all doctoral programmes there is some form of regular progress review, sometimes an annual progress review (APR) or similar, at which each candidate demonstrates his or her suitability to move on to the next stage. Some providers or subjects review candidates' progress after the first six months, but the first APR normally occurs at the end of the first year (for full-time candidates) and as a result of this the candidate's status may change to something more formal which confirms their candidature. Normally a neutral assessor, or panel of assessors, is involved in formal progress reviews, as well as the candidate's supervisor. Regular reviews are an important part of the learning process in doctoral programmes as they provide both candidate and supervisor with useful feedback on progress. The Quality Code, *Chapter B11: Research Degrees* provides more detail on progress and review.

4.2 Submission

The doctoral candidate has to submit a substantial body of original work for assessment. This may vary in length according to the candidate's discipline. In mathematics, for example, a candidate may have developed an elegant formula to explain a long-standing problem, and the rest of the thesis, which may be relatively short, will explain the thinking behind the problem-solving - how the solution has been arrived at and what it solves or proves. In more discursive subjects, the thesis may be as long as 100,000 words. Such variations do not indicate different levels of achievement because the form and volume of the work produced have been arrived at over many years in the discipline in question and are well accepted. Many university regulations stipulate that the volume of work expected is that which could be 'reasonably produced' in a minimum of three and a maximum of five years of independent full-time study. In creative arts, as already mentioned, the thesis may take the form of an artefact, and a commentary, as is appropriate for the field of study. Most doctoral examiners are looking for work of peer-reviewed publishable quality in the discipline: this may refer to elements of the thesis rather than the complete work.

4.3 Final assessment

Whether a candidate is being examined on the basis of a 'traditional' thesis, portfolio, artefact(s), clinical practice or other output, the body of work presented must demonstrate the research question and a critical evaluation of the extent to which it has been addressed. This, combined with the candidate's performance in the viva is the point at which a decision is made, initially by the examiners, about whether he/she can be awarded a doctorate. Tinkler and Jackson (2004) state that '...the [PhD] examination process serves as an explicit gate-keeping function and is a marker of standards'. Formally, examiners of doctoral candidates

make recommendations to the provider and a high-level, official university committee normally has final responsibility for deciding to award the degree in the provider's name. This formality is an important part of assuring the quality of doctoral output and achieving consistency of standards across the provider. The use of one or more external examiners helps to maintain consistency among providers.

The UK doctoral assessment (thesis and viva together) provides evidence of the equivalence of standards across different UK doctorates, demonstrating that all doctoral candidates face similar intellectual challenges at the point of final examination. All doctoral candidates experience a similar format - that is, an assessment of the thesis followed by the closed oral examination, with two or even three examiners (some providers routinely use three examiners, two of whom are external, if a member of staff is being examined). External examining is a key feature of UK quality assurance processes, and at least one external examiner is required at each oral doctoral examination. External examiners may be international experts and may therefore be based outside the UK; in such cases it is particularly important that the external is fully briefed about the regulations under which the candidate is being examined and the assessment process as a whole, both of which may differ from the assessment practices he/she is familiar with. The Quality Code, *Chapter B11: Research Degrees* refers to the use of external examiners at doctoral level. The wider role of external examiners is addressed by the Quality Code, *Chapter B7: External Examining*.

The choice of examiners for any thesis or other doctoral output is made with careful attention to the content of the candidate's research and his or her theoretical perspective, and/or another relevant context in which the research was conducted. Examiners are chosen for their expertise in the field and particular interest in the candidate's research topic, as well as for their experience of the type of doctorate to be awarded. Examiners are usually members of academic staff in universities either in the UK or beyond but, depending on the type of degree for which the candidate is being examined, one examiner might also be from an industrial or other professional environment (Denicolo et al, 2005). Examiners are normally required to submit separate, independent reports (which are exchanged prior to the viva) after evaluating the candidate's thesis or equivalent, and a joint report following the viva. Practice varies among providers as to whether or not candidates are shown examiners' independent reports in advance of the oral examination. Some take the view that this is helpful as it enables candidates to address the examiners' queries and/or concerns during the viva. It also allows the doctoral candidate to demonstrate how they are able to respond to academic argument as it arises.

The Quality Code, *Chapter B11: Research Degrees* includes information about the use of assessment criteria and the procedures for doctoral assessment. Part of the guidance in *Chapter B11* refers to use of an independent chair in oral examinations, to promote consistency and fairness. An increasing number of UK providers use this feature; others record vivas, for similar reasons.

In the final part of the assessment, the candidate defends his or her research in the viva, and demonstrates deep knowledge and understanding of the field of study, and originality of thought, either in the creation of new knowledge or in the novel application of existing knowledge. The doctoral assessment process is entirely distinct from the assessment of students on bachelor's or master's programmes who are usually examined as a cohort and do not normally experience individual oral examinations.

In the UK, the doctoral viva is usually a 'closed' examination, where only the candidate, examiners, and any independent observer or chair is present. Many providers permit the supervisor to be present to observe the examination, with the candidate's and examiners' permission. This differs from some non-UK European viva models involving a public defence, where the candidate may invite family and friends to join the audience in what is considered a celebration as well as a defence of the thesis. Where UK universities are offering joint

programmes with other European partners the public defence is sometimes used rather than the 'closed' UK model.

In the UK, examiners do not normally reveal the outcome to the candidate in advance of the viva because one of its purposes is to check on both authorship of the thesis and the candidate's engagement with the described research process. It is considered good practice that the examiners have a private meeting before the viva to discuss the merits of the candidate's output and to plan the conduct of the oral examination, including the questions they each wish to ask the candidate.

The viva can be a difficult experience for some and may lead to a recommendation that the candidate should not be awarded a doctoral degree. A minority of candidates fail the doctoral assessment outright. In most providers, examiners have the option of awarding a different qualification such as an MPhil if this is more appropriate to the candidate's achievements. There are normally guidelines or regulations for this option. Even for successful candidates, it is often the case that doctoral examiners will ask for either 'minor' or 'major' amendments to the thesis; institutions have different definitions about what constitutes 'minor' or 'major' and there are also variations in the length of time candidates are given to complete the changes but three to six months for minor changes and six to 12 months for major changes is not uncommon. Once any amendments have been made, there is no indication in the award that they have been required by the examiners; the UK doctorate is not graded or classified in any way.

In a minority of cases, the doctoral examination does not include an oral examination. For example, some professional clinical doctorates use a system of continuous assessment, normally involving production of a portfolio by the candidate and including an evaluation of a clinical research project.

4.4 Credit for doctoral degrees

Credit is not normally assigned to doctoral degrees because of the importance and diversity of the individual research project which is at the heart of all doctorates. However, credit may be awarded to candidates for successful completion of assessed structured elements as part of research skills and training; in some cases the volume of such credit may contribute to a postgraduate certificate or diploma. Where credit is awarded for the doctorate overall, the normal credit volume in the UK is 540.¹⁸

¹⁸ See: www.gaa.ac.uk/AssuringStandardsAndQuality/Qualifications/Pages/Academic-Credit.aspx

5 Characteristics of doctoral graduates

Doctoral researchers will have had diverse life experiences and varying opportunities during their doctoral studies, thus each graduates with a unique range of attributes. Nevertheless, to some degree they should all be able to:

- search for, discover, access, retrieve, sift, interpret, analyse, evaluate, manage, conserve and communicate an ever-increasing volume of knowledge from a range of sources
- think critically about problems to produce innovative solutions and create new knowledge
- plan, manage and deliver projects, selecting and justifying appropriate methodological processes while recognizing, evaluating and minimizing the risks involved and impact on the environment
- understand funding and how it can be generated and managed as well as organise infrastructure and identify/locate resources
- engage in professional practice, including ethical, legal and health and safety aspects, bringing enthusiasm, perseverance and integrity to bear on their work activities
- support, collaborate with and lead colleagues, using a range of communication, teaching and networking skills to influence practice and policy in diverse environments;
- appreciate the need to engage in research with impact and to be able to communicate it to diverse audiences including the public
- build relationships with peers, senior colleagues, students and stakeholders with sensitivity to equality, diversity and cultural issues.

Further, doctoral researchers are increasingly being encouraged to develop their foreign language and enterprise skills and to cultivate business acumen.

All doctoral graduates will have developed during the course of their research additional specialist knowledge within their discipline, while those who have studied a professional doctorate are likely to have been required to have particular professional experience that informs the topic of their research studies. They may well also have been required to engage in further study related to that professional field as part of their doctorate.

Finally, they must be able to prepare, plan and manage their own career development while knowing when and where to draw on support.

Further guidelines, references and resources

Denicolo, P M, Fuller, M, Berry, D, with Raven, C (2010) *A Review of Graduate Schools in the UK*. Lichfield: UK Council for Graduate Education

HEFCE (2014) *International Comparisons in Postgraduate Education: Quality, Access and Employment Outcomes*

www.hefce.ac.uk/pubs/rereports/year/2014/pginternational

HEFCE (2014) *Understanding the Recruitment and Selection of Postgraduate Researchers by English Higher Education Institutions*

www.hefce.ac.uk/pubs/rereports/year/2014/pgrrecruitment

HEFCE (2013) *Trends in Transition from Undergraduate to Postgraduate Study: Qualifiers between 2002-03 and 2010-11*

www.hefce.ac.uk/pubs/year/2013/201313/name,82612,en.html

InformAll, Transferable Know-how

www.researchinfolit.org/infolit/ridls/transferable-skills

Research Councils UK website

www.rcuk.ac.uk

Research Councils UK, *Research Council Common Terminology for Postgraduate Training*

www.rcuk.ac.uk/RCUK-prod/assets/documents/skills/RCUKCommonTerminologyforPostgraduateTraining2013.pdf

Vitae, Impact and evaluation

www.vitae.ac.uk/impact

UK Council for Graduate Education (UKCGE) website

www.ukcge.ac.uk

UKCGE, *Professional Doctorates in the UK* (2011)

[www.ukcge.ac.uk/pdf/Professional%20Doctorates%20in%20the%20UK%20\(2011\).pdf](http://www.ukcge.ac.uk/pdf/Professional%20Doctorates%20in%20the%20UK%20(2011).pdf)

Vitae website

www.vitae.ac.uk

Vitae, Researcher Development Framework

www.vitae.ac.uk/rdf

Vitae, Researcher Development Statement

www.vitae.ac.uk/rds

Vitae, *What do Researchers do?* series

www.vitae.ac.uk/wdrd

Woodward, D, Denicolo, P, Hayward, S and Long, E (2004) *A Review of Graduate Schools in the UK*. Lichfield: UK Council for Graduate Education

Appendix: Members of the advisory groups for the Doctoral Degree Characteristics

QAA is grateful to members of the Postgraduate Advisory group for revising and updating this document in 2014:

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