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Review of the PhD in the Social Sciences



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Glossary

AGCAS	Association of Graduate Careers Advisory Services	ISCF	Industrial Strategy Challenge Fund
BAME	Black, Asian and Minority Ethnic Group	KESS	Knowledge Economy Skills Scholarships
BBSRC	Biotechnology and Biological Sciences Research Council	NCRM	National Centre for Research Methods
CeMMaP	Centre for Microdata Methods and Practice	PhD	Doctor of Philosophy
CIAG	Careers Information, Advice and Guidance	PI	Principal investigator
CDT	Centre for Doctoral Training – in contrast to multidisciplinary DTPs, CDTs are thematic and pump prime the development and delivery of specialist training	PIPS	Professional internships for PhD students
DLHE	Destinations of leavers from higher education survey	Postdoc	Temporary position that allows a PhD to continue their training as a researcher and gain skills and experience for an academic career
DTP	Doctoral Training Partnership – DTPs are multidisciplinary and offer a broad range of training across the social sciences.	REA	Rapid evidence assessment
EDI	Equality, diversity and inclusion	RED	Research England Development Fund
ESRC	Economic and Social Research Council	RO	Research organisation
GDPR	General Data Protection Regulations	TASO	Transforming Access and Student Outcomes in higher education – affiliate What Works Centre
HE	Higher Education	TNA	Training needs analysis
HECSU	Higher Education Careers Service Unit	TIES	Turing Institute enrichment scheme
HEI	Higher Education Institution	UKCGE	UK Council for Graduate Education
HESA	Higher Education Statistics Agency		
IAA	Impact Acceleration Account		

Notes on terminology: Throughout this report we refer to doctoral/PhD students and graduates, master's graduates and undergraduates. Where we refer to graduates without specifying the level, this means doctoral graduates.

Recommendations for DTPs may also be relevant to CDTs.



Foreword

At the beginning of 2020, ESRC launched a fundamental Review of the Social Science PhD. As the largest single funder of social science doctoral training in the UK we want to ensure that our graduates remain at the forefront internationally, with the right skills to tackle major societal challenges.

This Evidence Report is the culmination of extensive engagement across the sector and with employers, and analysis of UK and international literature and data. Its focus is on the skills needed by social science graduates and the optimum way to develop these skills. The research was undertaken by CFE Research and the University York under the guidance of an independent Steering Group and the ESRC Office. The Steering Group was Chaired by Professor Kathy Rastle, Royal Holloway University, and comprises members from across the sector, including major employers and students.

The breadth and depth of evidence in the report shows that there is a lot we can be proud of and that ESRC investment in doctoral training is positively driving best practice and standards. It is clear that social science graduates are valued for their depth of knowledge, critical thinking, and research skills. However, the report highlights that, in a highly competitive and international jobs market and a rapidly changing research landscape, we must challenge ourselves to adapt and innovate to keep pace and we must do more to ensure we support a more diverse and inclusive student population.

The report makes a series of recommendations directed not only at the ESRC but also at Research Organisations and UKRI, recognising that not only do some of the issues raised extend beyond the social sciences but also that doctoral training is the responsibility of the sector as a whole.

Over the following months ESRC will be considering the recommendations carefully and, guided by advice from the independent Steering Group, will publish a response in December 2021. This will outline the actions we can take as part of our postgraduate training strategy and where we will work with our sister Councils within UKRI, Research Organisations and other stakeholders. The government's commitment to a new deal for postgraduate research, as part of its People and Culture Strategy, makes this a particularly opportune time to be taking collective action to address broader issues.

I would like to take the opportunity to thank the Steering Group and CFE Research/University of York for all their work, the 1,300 individuals across 120 different organisations who have directly contributed to this review, and my colleagues within ESRC who have overseen the project. The quality of the report is testament to the commitment and expertise of all those involved.

Professor Alison Park
Interim Executive Chair ESRC

The report shows that there is a lot we can be proud of and that ESRC investment in doctoral training is positively driving best practice and standards.

However, the report highlights that, in a highly competitive and international jobs market and a rapidly changing research landscape, we must challenge ourselves to adapt and innovate.

Executive Summary

The social sciences play a key role in addressing some of the biggest challenges we face today, from climate change to global health. UK social science PhDs are prized for their depth of knowledge, critical thinking and research skills.

The ESRC invests heavily in PhD studentships to cultivate the next generation of social scientists. Despite only funding a minority of UK social science PhDs, the ESRC has considerable influence over the UK social science doctoral agenda¹. It has been more than ten years since the ESRC last conducted a review of its doctoral training. During that time, demand for challenge-led, inter-disciplinary research and evaluation, including the use of digital methods and ‘big data’ has increased. It is timely, therefore, to re-examine the social science doctoral offer, to identify its strengths as well as areas where it could be improved.

This report was commissioned by ESRC to inform its Review of the PhD in the Social Sciences. It is the culmination of 18 months of independent research and consultation by CFE and the University of York, including analysis of secondary data, a rapid evidence assessment (REA) of UK and international research on doctoral training,² an open consultation exercise and extensive primary research with a wide range of UK and international stakeholders, supervisors, students, graduates and employers. Over 1,300 individuals, representing over 120 different organisations contributed directly to the review. To the best of our knowledge, this is the largest such exercise ever undertaken.

The report addresses two overarching research questions:

- 1. What are the skills needed by social science PhD graduates to prepare them for careers both within and beyond academia?**
- 2. What are the optimum ways to develop these skills for a diverse student population while also safeguarding student health and wellbeing?**

Undertaking the review in the context of the COVID-19 pandemic has been challenging. Most of the fieldwork had to be carried out online and we are grateful to university staff, students, employers and other stakeholders for their engagement with the review at what was often a busy and stressful time for many.

The pandemic has also thrown into sharp relief some of the issues uncovered in the review. Social science has played a key role in understanding behavioural responses to the pandemic and how best to manage these. The scale and nature of the crisis underlines the importance of cross-disciplinary and challenge-led research. The pandemic has necessitated more flexible approaches to both work and research, demonstrating the opportunities offered by greater use of online and digital technologies. And acknowledging and supporting student mental health has never been more important.

What are the skills needed by social science PhD graduates to prepare them for careers both within and beyond academia?

There is much for ESRC, Doctoral Training Partnerships (DTPs), Centres for Doctoral Training (CDTs) and research organisations (ROs) to be proud of in the current model of doctoral training. Training in a broad base of research skills, methodologies and theories is a key strength of the current UK social science PhD model. UK ROs provide students with access to world-class research environments and supervisors with excellent disciplinary expertise. DTPs and CDTs add value to skills training through supplementary provision and cohort-based modules that place a greater emphasis on multi- or inter-disciplinary research. Most students and graduates responding to our survey were satisfied with their decision to pursue a doctorate.

In a highly competitive jobs market and rapidly changing research landscape it is imperative that core research skills training keeps pace with cutting-edge methods, particularly in relation to data management, digital data collection and analysis (including big data) and dissemination. Skills in these areas are increasingly required for academic and non-academic research careers.

¹ Approximately one-fifth.

² A separate report on the rapid evidence was published in April 2020: CFE Research and the University of York (2020) [Review of the PhD in the Social Sciences: Rapid evidence assessment](#)

There is some suggestion, particularly from international commentators, that UK training does not provide enough emphasis on the development of quantitative skills and that the quantitative training that is provided is too basic. DTPs should continue to provide high quality research methods training for all ESRC-funded social science PhD students to ensure they achieve minimum competencies in quantitative and qualitative research and that there are opportunities for students to pursue appropriate advanced level training

There is a pressing need for PhD graduates to develop transferable employability skills to ensure they can compete for both academic and non-academic positions. Differences in the transferable skillset required for academic and non-academic careers are minimal. Employers outside of academia value social science doctoral graduates' subject expertise and critical thinking skills, but rarely actively target them during recruitment.

Competition for academic jobs is intense, so additional employability skills can only benefit those looking to follow this career path. Stakeholders agree that current training does not systematically equip students with skills and attributes such as project and budget management, business/commercial acumen and the ability to communicate with a broad range of audiences. Or, where students do develop such skills, they do not always recognise their importance for their future career.

This is not a new issue or one that is confined to the social sciences – it is almost 20 years since the Roberts Review reached similar conclusions.³ More radical action may be needed to move the dial on this – we are recommending all PhD students gain experience of the practical application of social science research.

There is also a growing need for interdisciplinary working to address societal challenges. All employers, including ROs, value individuals who can work collaboratively and take a multi-disciplinary approach to problem-solving. Opportunities for interdisciplinary and collaborative working exist and the offer from DTPs and CDTs is considered to be ahead of the curve. But more funding and support is needed to expand current partnerships and establish new networks.

However, there is also general agreement that the current funding period for the social science PhD is not long enough. Any additional requirements of PhD students will not be feasible without an extension to the funding period to accommodate these. There is broad support for extending funding to four years but little appetite for substantially longer programmes, like the USA model.

³ Roberts, G. G. (2002) SET for success The supply of people with science, technology, engineering and mathematics skills – The report of Sir Gareth Roberts' Review HM Treasury, p111.

Recommendations for ensuring PhD graduates have the skills they need

Recommendations for DTPs may also be relevant to CDTs.

All ESRC-funded students should undertake some form of activity to build understanding of applying research in practice. DTPs should develop a menu of high-quality opportunities for students, ranging from masterclasses and summer schools, through collaborative projects (including student-led projects) to internships and placements. These activities should ensure students understand how their knowledge and skills can be applied in a range of settings and develop wider core skills which are essential for academic and non-academic careers alike. ESRC should consider how to incentivise employers from a range of sectors and other organisations, such as learned societies, to contribute to the development and/or delivery of opportunities.

ESRC and DTPs should increase and diversify the opportunities for social science doctoral students to work collaboratively and across disciplines both within and beyond the social sciences. This is in recognition of the skills required for academic and non-academic careers and includes but is not limited to, interdisciplinary doctorates – it could be achieved through research in practice activities outlined above; interdisciplinary supervisory teams, drawing on the expertise of employers as well as academics; knowledge exchange activities; student-led collaborative projects; and professional doctorates. Other levers, such as raising the DTP target for the proportion of students that take part in collaborative activities, should also be considered. A key role for the supervisory team will be to support students to reconcile epistemological and ontological differences and overcome the challenges of communicating between disciplines and non-technical audiences.

The ESRC should review its research methods training requirements and encourage ROs to co-develop methodological provision with input from industry and relevant training providers (e.g. NCRM) to ensure it keeps pace with emerging methods and technologies and that students develop the requisite core and advanced skills particularly quantitative and digital for academic and non-academic careers.

The ESRC should extend the funding for the PhD to 4 years. Extending the PhD funding would allow time for students to complete their skills training, including research in practice, and help to reduce the impact of additional requirements on the time available for the thesis/final output. Without additional funding, the implication of extending the PhD funding period is fewer funded studentships. There is also a risk of an adverse impact on equality and diversity and completion rates. The effects of any changes to the funding period should be evaluated.

What are the optimum ways to develop these skills for a diverse student population while also safeguarding student health and wellbeing?

A strong theme emerging from this research was the importance of doctoral pathways and training programmes that are flexible and personalised to individual student needs, taking account of their research area, subject discipline, prior qualifications and experience. The current model offers a range of pathways and a combination of core and optional training. There is a desire for greater flexibility, in part to help ensure a diverse student population, but a truly bespoke experience will come at a cost.

There are inequalities for key groups in access to, participation in and outcomes following doctoral study. Access to research council studentships by students from Black, Asian and Minority Ethnic (BAME) backgrounds is low, especially among Black students. Women are under-represented among PhD graduates in some disciplines (notably economics, planning and business studies) but over-represented in others (such as psychology, education and social policy).

There is evidence of socio-economic inequalities in access to the PhD and many stakeholders view current funding levels as insufficient to cover living costs – meaning those with access to additional sources of finance are at an advantage. More than three-quarters of research-council-funded doctoral graduates in ESRC subjects were under 30 on entry and there is a perception from some that the current PhD model is tailored towards younger students studying full-time.

Diversifying the social science PhD population will need action at different levels of the system and both short- and long-term interventions are needed. Addressing inequalities that appear earlier in the higher education (HE) pipeline will eventually ‘trickle down’ to PhD level, but this will take time. The stark under-representation of many BAME groups suggests that positive action is required at entry to PhDs and at postdoctoral level to adjust for earlier inequalities.

While most PhD students aspire to an academic career, many progress into other sectors or non-research roles or move out of academia after a time. Social sciences doctoral students need a realistic understanding of the academic job market and greater awareness of the range of potential career options outside HE where their skills will be valued. Specialist careers information, advice and guidance (CIAG) is not universally available and does not consistently meet students’ needs. There is also a lack of data on doctoral graduate destinations and up-to-date labour market information to underpin effective CIAG.

There are some excellent opportunities for students to undertake advanced skills training and gain valuable experience that employers value. Yet students do not always recognise the importance of skills training during their doctorate and take-up of non-mandated training opportunities is mixed. Students need more help to understand which activities they should pursue. Given the time pressures involved, students and supervisors often focus on the thesis, as this is what affects the award of the PhD, and other elements, such as developing employability skills, can be seen as of lesser importance. Senior stakeholders and many consultation respondents argued that the current skills training provision is too narrowly focused on the requirements of the research project.

Levels of stress and anxiety among doctoral students are increasing, as is the number of students seeking support with their mental health. The causes are varied but some highlight failings in the culture as well as the systems and processes in place within DTPs and ROs. Although there is evidence that pastoral support is improving, it is not universally accessible or sufficiently tailored to doctoral students’ needs. Improvements in the quality and access to pastoral support would be welcomed, but structural changes are also required to foster a culture of wellness.

Supervisors are critical to a positive doctoral experience and outcomes for students. But the predominantly academic background of supervisors means they are often not well equipped to provide advice and guidance on careers beyond academia. Expecting supervisors to take on lots of additional responsibilities is not the answer, although they do need to be able to signpost students to support and encourage them to take up opportunities.

Recommendations on how best to develop these skills and ensure a diverse and healthy student population

ESRC should regularly review current DTP widening participation strategies and implement measures to ensure they are appropriately aligned with declared council objectives. This should include holding DTPs to account for the achievement of the targets set for widening access, participation and success at the doctoral level. ESRC should review current monitoring and evaluation processes to increase the robustness of the evidence base about what interventions work for postgraduate students. Links should be made to the wider evidence base, including at the undergraduate and master's level (e.g. TASSO).

ESRC should encourage DTPs to provide ring-fenced funding for students and postdoctoral researchers from under-represented backgrounds. This funding will support positive action to reduce underrepresentation among students at doctoral level and, in the longer term, help to increase the diversity of staff. This should be delivered in combination with measures to broaden entry routes into doctoral level study to help overcome other barriers that under-represented groups can experience.

Building on current practice, ESRC should work with DTPs/CDTs to develop minimum standards for the Training Needs Analysis (TNA) to ensure it is implemented more consistently across the sector. The TNA should inform the development of a tailored training programme comprising compulsory and optional elements.

DTPs should appoint professional development leads. The role of these specialists would be to: support the supervisors with the TNA, signposting students to training/activities as appropriate; raise awareness of the range of career pathways (academic and non-academic) available to doctoral graduates and work with careers specialists to ensure students develop the skills and experience necessary to achieve their goals; and signpost to pastoral support services to help ensure student wellbeing.

The ESRC should encourage DTPs/individual ROs to work with organisations (such as the Association of Graduate Careers Advisory Services (AGCAS) and the Higher Education Careers Service Unit (HECSU)) to ensure specialist CIAG is available and accessible to all doctoral students. It is important for CIAG provision to be tailored to the needs of doctoral students and underpinned by accurate destination data and labour market information on the range of doctoral career pathways. The requirement to ensure access to specialist CIAG as a condition of ESRC funding could be considered to help drive change.

The ESRC should consider which elements, beyond the final thesis, could be assessed (e.g. as a condition of progression) or formally accredited to ensure students (and supervisors) recognise the value of training and activities (such as research in practice) and are motivated to engage with them.

The ESRC should encourage alternative formats to the traditional long-form monograph in the context of a more flexible model of doctoral training. This will help to support students to disseminate their findings to more diverse audiences and demonstrate how insights from their research can be applied to address societal challenges and other problems.

ESRC-funded ROs should enhance student wellness through the development of programmes that foster an inclusive and supportive culture, recognising how the postgraduate experience can impact on mental health and wellbeing. DTPs should undertake a self-assessment as part of the commissioning process to demonstrate their commitment to student wellness and the range of support on offer. This could be guided by a tool such as the one developed for the [Stepchange Mentally Healthy Universities Framework](#). ESRC should monitor progress by DTPs and consider evaluating new initiatives.

ESRC in collaboration with UKRI should strengthen monitoring of the postgraduate research student population and the use of data to inform strategic planning and delivery. More comprehensive and timely data should be used to inform the development of access and participation and EDI strategies, as well as tailored financial and pastoral support and CIAG. This should include improving data linkage across levels in statutory (HESA) datasets and standardising data collection of EDI characteristics by DTPs/CDTs to provide a lifecycle picture, from first-degree through to doctoral graduation and destination.

The ESRC, working through sector bodies (such as UKCGE), should ensure a comprehensive programme of initial training and CPD is developed so supervisors are effectively supported to undertake their role. The training and ongoing CPD should support supervisors to address the range of challenges they face and be tailored according to their skills and experience. Key themes that should be addressed include: EDI; coaching and the provision of constructive feedback; doctoral career destinations and career pathways outside of academia; and how to recognise and signpost students with pastoral support needs. ESRC in partnership with appropriate sector bodies should consider how to mandate this training and CPD through formal assessment or accreditation.

01.

Introduction

In January 2020, the ESRC commissioned CFE in partnership with the University of York to undertake an independent study to inform its Review of the PhD in the Social Sciences. This report is the culmination of 18 months of research and consultation in the UK and internationally. It explores the fitness for purpose of current doctoral training in the UK in view of changes in the research landscape and the increasing diversity of doctoral graduate career destinations in the context of a global economy.

Background and context for the Review

UK PhD holders have traditionally been prized for their depth of knowledge, expertise and professional skills, and are sought by employers in a range of industries, including the public and third sectors, in addition to academia.⁴ The UK social science context in which PhD training is embedded is part of a high-quality research base, recognised as one of the very best in the world. Both metric-based⁵ and more holistic evaluations⁶ support this judgement, with the UK usually placed behind only the USA in international comparisons.

The landscape has evolved in recent years and the UK social science PhD is now situated within a complex research and innovation system which is helping to drive the global, knowledge-based economy. In this context, demand for challenge-led, interdisciplinary research and evaluation, including that which utilises emerging methods and technologies such as big data, machine learning and open science, has increased.

The shifting research landscape has also increased competition in the labour market and the diversity of roles doctoral graduates progress into. Although analysis suggests that historically there has been limited international migration among British social (and physical) sciences doctoral graduates⁷, they are now competing with graduates internationally, as well as with international students who choose to pursue their doctoral training in the UK, for work at home and abroad. While a proportion of social science graduates remain in academia throughout their careers, many never pursue an academic career or leave higher education to pursue alternative careers, including non-research roles.^{8,9} As such, there is a growing disconnect between doctoral students' initial career aspirations and the outcomes achieved in the medium to longer term. These changes have prompted a reassessment of the value and purpose of the social science PhD in the UK and called into question whether established training models remain fit for purpose.

The ESRC invests heavily in PhD studentships to cultivate the next generation of social scientists. Funding is currently delivered through a network of 14 Doctoral Training Partnerships (DTPs) and two Centres of Doctoral Training (CDTs) which have been established to ensure students develop deep subject knowledge, research skills and broader transferable skills through links with business and other partners. The ESRC remains committed to delivering excellence in postgraduate training and supporting the development of highly capable and innovative researchers from diverse backgrounds for a wide range of careers. Enhancing the quality and content of postgraduate training so that it effectively equips students with the skills to successfully compete in a global economy are therefore central planks of its latest delivery plan which is designed to ensure doctoral training in the UK remains world-leading and fit for the future.

Although the ESRC supports only a minority¹⁰ of all social science PhDs in the UK, its status as a flagship funder of research on social and economic issues and a member of UKRI¹¹ means it is well positioned to shape the doctoral agenda more broadly. It has, however, been more than ten years since ESRC last conducted a fundamental review of its doctoral training provision. Given the changes that have occurred during that period, it is timely to re-examine the current offer, to identify its strengths as well as areas where it could be improved, in order to achieve ESRC's new vision for the social science PhD. ESRC commissioned this report for this reason. It also commissioned a complementary piece of research to scope the skills needs of social scientists over the life course to support data-driven research.¹² The early findings from this project have also contributed to this report.

4 CFE Research (2014). The impact of doctoral careers: Final Report. Research Councils UK.

5 For example, the UK is second only to the US in number of institutions in the Times Higher Education World University Rankings 2021 for social sciences. Scopus 'SciVal' data shows the UK second to the US in scholarly output in the social sciences in 2020; and first in the world for field-weighted citation impact in the same year.

6 See for example the range of evaluations conducted by ESRC to internationally benchmark UK social science disciplines: <https://esrc.ukri.org/research/research-and-impact-evaluation/international-benchmarking-reviews/>

7 Analysis of destinations data shows only a small number of British research-council-funded doctoral graduates in ESRC subjects in the period 2012/13 – 2016/17 were working outside the UK as their first destination. UK doctoral graduates in the physical sciences were a little more likely to be internationally mobile, including to the USA and Germany, but most remain in the UK.

8 Hancock S (2019) PhD outcomes in the UK: Exploring entry into academic employment. Society for Longitudinal and Lifecourse Studies International Conference, University of Potsdam, Germany, 27th September.

9 Hancock S (2019) PhD careers and employment in the UK: Identity, Agency and Choice. Keynote at the Researcher Education & Development Conference, King's College London, 17th October.

10 According to HESA Student records (accessed via the Heidi system), in 2018/19 there were 6,225 entrants to a higher degree by research in ESRC subjects. One third of these entrants were international (non-EU) students. ESRC funded 735 students in 2018/19 (though not all of these are recorded in the HESA data). This indicates that approximately 18% of UK and EU entrants were funded by ESRC (around 12% of new PhD students, if including non-EU students too).

11 UK Research and Innovation: a non-departmental public body sponsored by the Department for Business, Energy and Industrial Strategy (BEIS) that brings together the seven disciplinary research councils, Research England and the UK's innovation agency, Innovate UK.

12 <https://esrc.ukri.org/skills-and-careers/scoping-the-skills-needs-of-social-sciences-to-support-data-driven-research/>.

Aims and objectives for the research

The skills and capabilities needed by doctoral graduates and the optimum ways to develop them provide a focus for ESRC's review of the PhD in the social sciences. It therefore commissioned CFE in partnership with the University of York to undertake independent research into skills needs and potential models of delivery to inform the review. The research set out to assess current doctoral training provision in the UK and make recommendations on potential revisions to funding, structures and content that would ensure a diverse student population, protect student wellbeing and optimise the value of ESRC graduates to a range of employers, within and beyond academia, in a global economy.

To achieve these aims, the research sought to address two overarching questions and a series of sub-questions:

1. What are the skills needed by social science PhD graduates to prepare them for careers both within and beyond academia?

- a. What are the skills UK social science PhD graduates need to compete in a global marketplace?
- b. How competitive do students, graduates and employers perceive UK social science PhDs to be nationally and internationally?
- c. What skills should be core for all students? Should there be variation in skills across disciplines or in relation to career pathways/student motivations?

2. What are the optimum ways to develop these skills for a diverse student population while also safeguarding student health and wellbeing?

- a. What are the strengths of current arrangements in relation to content, structure, support and supervision?
- b. What can we learn from different models nationally and internationally both within and beyond the social sciences?

Approach

The research questions have been addressed through a rigorous mixed-methods approach which combined an analysis of large secondary datasets and research literature with primary data collection from a wide range of UK and international stakeholders, including: leading social scientists and members of the research community; senior leaders and staff responsible for postgraduate research within UK higher-education providers; supervisors; social science doctoral students and graduates; and employers. In reviewing international evidence, three prominent and contrasting national systems were used as case studies: the USA, Netherlands and Germany. Stakeholders were able to share their views and experiences in a number of ways, as summarised in Figure 1 page 13.

These activities were delivered in six inter-related stages over an 18-month period¹³. Over 1,300 individuals representing over 120 organisations engaged with the research. The research was overseen by a Steering Group comprising ESRC staff, members of its Council and Strategic Advisory Network, and representatives from the HE and wider research community. The group met at every stage of the research to review the emerging findings and to help shape subsequent activities to ensure the requirements of ESRC's review were met.

The research was designed to ensure representation of views from across the spectrum of stakeholders. To focus participant recruitment and to capture a variety of experiences, ten higher education institutions were invited to join the study. Institutional characteristics considered in issuing invitations included the size of the social science PhD student body, geographical location, the range of social science disciplines offered and the amount of ESRC studentship funding received. The final selection included some institutions which are not currently part of a doctoral training network. The achieved sample included both ESRC and non-ESRC-funded students and graduates. The sample was therefore able to balance the need to achieve a high number of responses with ensuring views from all parts of the social science doctoral stakeholder community were considered.

¹³ The review period was considerably longer than originally planned due to the impact of the COVID-19 pandemic.

Figure 1: Summary of the mechanisms through which different stakeholder groups contributed to the Review

Stakeholders	Survey	Focus groups	Interviews	Consultation	Workshops
Students / Graduates	698 students / 293 graduates	3 focus groups total 15 current students	14 graduates interviews		Workshop with 15 students and 7 graduates
Supervisors		6 Supervisors focus groups from 6 HEIs (33 supervisors)			Workshop with 14 supervisors from 8 HEIs
Employers		Focus group with 4 employers from different sectors	12 employers interviews		Workshop with 7 employers from a range of sectors
Wider sector			18 UK/International stakeholders interviews (from 9 countries)	An open consultation with 164 responses	2 workshop with 35 senior institutional stakeholders

Data about doctoral students and graduates from the primary survey as well as secondary data from the Higher Education Statistics Agency provides an overview of the UK social science doctorate. This is supplemented by the substantial qualitative data obtained from focus groups and interviews with supervisors, students, employers, international experts, senior university staff and an open consultation. Workshops involved discussion of emerging findings and of potential recommendations.

Detailed findings from the rapid evidence assessment which examined doctorate training in our case study countries are published separately.¹⁴ Further details of the methodological approach and participants in the Review are provided in Appendix 2.

Taken together, the different strands of investigation comprise a comprehensive description and analysis of the UK social science PhD in context. To the best of our knowledge, this is the biggest such exercise ever undertaken.



¹⁴ CFE Research and the University of York (2020) [Review of the PhD in the Social Sciences: Rapid evidence assessment](#).

02.

The UK Social Science PhD in context

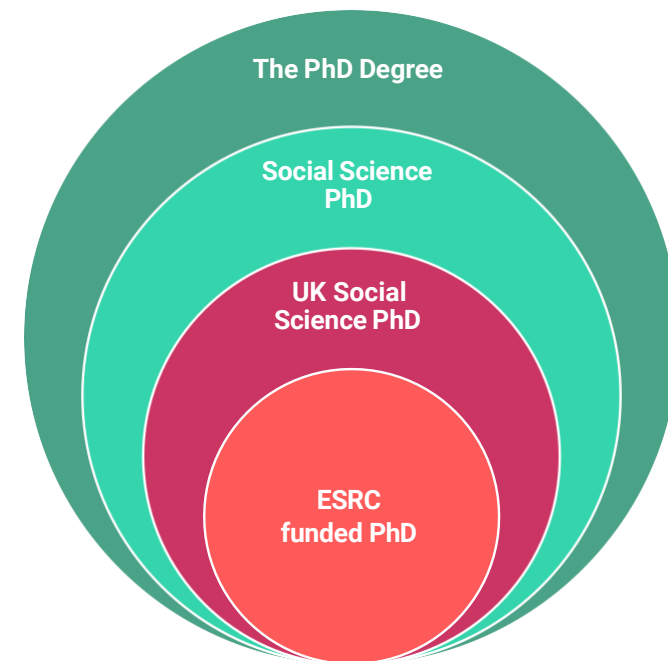
This chapter provides a brief overview of doctoral training in the UK, with reference to provision in comparator countries. Details of current ESRC training are also provided. The strengths and limitations of both ESRC and broader doctoral training are considered throughout the remainder of the report.

According to the latest data¹⁵, approximately 100,000 students were pursuing a doctorate in the UK in 2019/20 and approximately a quarter of these were in social sciences disciplines. There are three main routes through doctoral training in the UK: the 'traditional' thesis-based route; the 'professional' or 'practice-based' route; and the 'new route' which combines a one-year MRes and a three-year PhD with taught as well as independent research elements. A similar 'traditional' model is offered in Germany. However, our rapid evidence review¹⁶ and discussions with UK and international stakeholders highlighted the increasing diversity of approaches that are evolving in other countries and identified several ways in which the UK social science PhD differs from international comparators.

At a notional three years of full-time study, UK doctorates are shorter than those in most other countries, including in our three case-study countries: the USA, Netherlands and Germany. This appears partly related to the component parts of doctoral study: the UK social science PhD is focused on production of a thesis with, in most disciplines, little or no formal requirement for passing interim qualifying exams, which is a notable feature of the initial stages of the US doctorate. The Netherlands has moved towards something like the ESRC 1+3 arrangements through introduction of research training master's degrees, but on a 2+4 basis. US doctoral programmes less frequently require students to have a fully worked-up research proposal on entry; many Dutch and German doctoral candidates are employees working on their supervisor's project, although there are growing numbers of non-employed doctoral students working on their own projects, often international students, but sometimes domestic scholarship holders. Completion rates vary across the countries too. In the Netherlands and the UK, around three-quarters of PhD students successfully complete within seven years.¹⁷ In the USA and Germany, completion rates are lower, thought to be around 56% in the USA for the social sciences¹⁸. These differences in format, length, assessment and funding provide insights into potential ways the UK model could be developed in order to ensure the PhD remains fit for purpose. The status of UK PhD students (as students rather than employees) may be something for the recently announced 'New Deal' for postgraduate research students consultation to explore.¹⁹

To understand the ESRC's capacity for influence, we need first to understand how the UK social science PhD is embedded within different broader systems (See Figure 2). Some features of the UK social science PhD are influenced by the UK PhD in general and some by international norms and practices in social science PhDs. For instance, the typical length of a UK PhD is shorter than PhDs in other countries. It would be difficult to make very significant changes to the length of the UK social science PhD independent of changes to UK PhDs in general. Similarly, disciplinary conventions and expectations are usually international, meaning significant unilateral change could make the UK social science PhD an outlier, which may be unhelpful.

Figure 2: The ESRC-funded PhD embedded as part of the broader international doctoral system



15 See <https://www.hesa.ac.uk/data-and-analysis/sb258/figure-3>

16 CFE Research and the University of York (2020) [Review of the PhD in the Social Sciences: Rapid](#) evidence assessment.

17 HEFCE (2013) Rates of qualification from postgraduate research degrees: Projected outcomes of full-time students starting postgraduate research degrees in 2010-11. Bristol: HEFCE; de Goede, M., Belder, R. and de Jonge, J. (2013) Academic Careers in the Netherlands. Rathenau Instituut.

18 Sowell, R, Zhang, T. and Redd, K. (2008) PhD Completion and Attrition: Analysis of Baseline Program Data from the PhD Completion Project. Washington, DC: Council of Graduate Schools, p.17.

19 Department for Business, Energy & Industrial Strategy (2021) R&D People and Culture Strategy: People at the heart of R&D https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004685/r_d-people-culture-strategy.pdf.

The ESRC is considered the ‘flagship’ funder of UK social science PhDs. The council has been able to exert effective influence on social science research training through its DTP/CDT arrangements. However, there is inevitably a limit to the extent of this influence because ESRC funds a relatively small proportion of all UK social science PhD students. Notably, changes which affect the structure and assessment of PhDs may necessitate changes to be enacted by every PhD awarding body (i.e. each university which awards social science PhDs). Some of these universities do not currently attract any ESRC studentship funding and it is difficult to see how they would be persuaded to make such changes. Further, regulations for PhD degrees typically cover all subjects, so adjusting arrangements for social science PhDs only would be difficult.

The findings and recommendations in this report need to be read with these constraints in mind. Some of the changes we propose will be within ESRC’s remit. Others may need to be addressed in concert with others, which might include UKRI, universities and/or a range of different stakeholders.

The current ESRC offer

ESRC provides funding for more than 500 studentships through its network of DTPs and CDTs each year; this investment is used to leverage additional funding resulting in over 700 individual students receiving ESRC funding annually. This represents roughly one-sixth of new doctoral students who, given their discipline and residence, are eligible for support²⁰, although the ESRC’s influence on doctoral training is considerably larger than this proportion would suggest, as reflected by the level of stakeholder engagement in this research. Widening access to doctoral training and ensuring students receive an inclusive and equal experience is fundamental to the Council’s approach. Although at present, 96% of ESRC students pursue their doctorate on a full-time basis, there is the flexibility to study part-time and switch between modes of study to accommodate external commitments and changes in an individual’s circumstances. ESRC also offers a range of pathways which are designed to cater for individual student needs as well as different disciplinary requirements. Approximately half of students follow a 1+3 or 1+4 pathway and two-fifths complete +3 programmes. DTPs and CDTs also utilise the flexibility within these training structures to offer ‘other’ awards, which make up the remaining 10 per cent. Irrespective of their pathway, all ESRC-funded students undertake a detailed Training Needs Analysis (TNA)²¹ at the start

of their studentship, which is reviewed annually. The ESRC monitor this requirement by undertaking a sample check of TNAs. The TNA is designed to ensure students, with the support of their supervisors, develop a progressive programme that delivers the depth and breadth of training needed, given their existing knowledge and skill levels.

Core elements of ESRC doctoral training

The ESRC sets out its expectations for the content and delivery of postgraduate training funded by the Council along with the minimum requirements for Research Organisations in its Postgraduate Training and Development Guidelines.²² The core elements are summarised below. The strengths of this existing approach and areas for development were a focus for this review and are discussed in more detail in subsequent chapters.

Research methods

Current ESRC training provision includes a compulsory foundation, which is designed to equip students with basic competencies in quantitative, qualitative and mixed-methods research; data literacy and the use of appropriate software; and ethical practice. This foundation is acquired either through an ESRC-funded 1+ Master’s (sometimes integrated into the PhD), or independently through prior Master’s-level study. It ensures students have the requisite knowledge and skills to select and apply relevant techniques in their own research, while also developing an appreciation of alternative methods that could be used in other fields. Currently, equal weighting is not applied to all these research skills but rather DTPs/CDTs determine the balance by research subject, discipline area and existing skill levels of the student.

Transferable skills

Given the range of careers and industries that social sciences doctoral graduates progress into, it is important for students to develop generic, transferable skills in addition to core research skills. Current ESRC training is designed to equip students with capabilities such as communication and networking skills, through opportunities to present their work to different audiences - both academic and non-academic. Students are also expected to develop strong leadership, research management and relationship management skills, through a combination of formal learning, their own research programme and experiential opportunities such as placements and internships.

²⁰ See footnote 10.

²¹ See ESRC Postgraduate Training and Development Guidelines for further information on the TNA <https://esrc.ukri.org/files/skills-and-careers/doctoral-training/postgraduate-training-and-development-guidelines-2015/>

²² The guidelines are published online at: <https://esrc.ukri.org/files/skills-and-careers/doctoral-training/postgraduate-training-and-development-guidelines-2015/>

Collaborative working

There is an increasing need for doctoral graduates to demonstrate the relevance and impact of their research to wider audiences. Collaborative working is recognised by the ESRC as an effective vehicle for supporting students to develop their understanding of how research findings can have impact within and beyond academia. DTPs and CDTs set targets²³ to ensure a proportion of each cohort of students engages in collaboration with a non-academic organisation in the public, private or third sector and has the opportunity to apply their knowledge through knowledge exchange and/or co-production. ESRC does not prescribe how this requirement should be met and delivery takes a number of forms including internships, placements and most commonly, collaborative studentships.²⁴ DTPs also link up with ESRC Impact Acceleration Accounts (IAAs) to increase opportunities to engage and collaborate with business.

International

To encourage students to engage and work internationally DTPs have funding to support students to undertake overseas fieldwork and to spend a period of their award at an overseas institution. In addition, students can receive an extension to their funding in order to acquire or develop a working ability in a different language in order to complete their research.

Interdisciplinarity

ESRC also recognises the importance of working across disciplines. ESRC provides additional studentships to support interdisciplinary research where this crosses the boundary with another research council. DTPs are encouraged to provide opportunities for students to take part in interdisciplinary research and training and an increasing number are creating thematic training pathways (e.g. sustainability, prosperity and wellbeing; security, conflict and human rights; children, youth and families) which straddle disciplinary boundaries and other research councils' remits. Funding can be drawn from multiple research council training grants to support interdisciplinary PhDs. Funding from individual councils is also available for attendance at interdisciplinary conferences, informal 'no agenda' meetings to increase networking opportunities, and joint pathway student symposia.

Supervision

Reflecting QAA guidance, dual supervision or supervisory panels are an ESRC requirement and research organisations must be able to demonstrate that they have a policy on how new and inexperienced supervisors will be trained and supported. Supervisory engagement with the DTP is fundamental in ensuring students get the most out of their ESRC studentship and the range of opportunities open to them.

Personal and career development

It is expected that ESRC provision for postgraduate training and development within DTPs and CDTs reflects the principles of the Concordat to Support the Career Development of Researchers.²⁵ As such, students should be encouraged to proactively engage in their own personal and career development and agree a training plan, in discussion with their supervisor(s), articulating their career aspirations, research strengths and skills, and the ways in which they intend to address skills gaps and development areas over the course of their PhD programme; for example, through support from central institutional services and/or external sources of training provided by the Research Councils and other national organisations.

²³ DTPs and CDTs have a target of 30 per cent of each cohort to engage in some form of collaboration with non-academic organisations, CDTs have a 20 per cent target for co-funding of studentships.

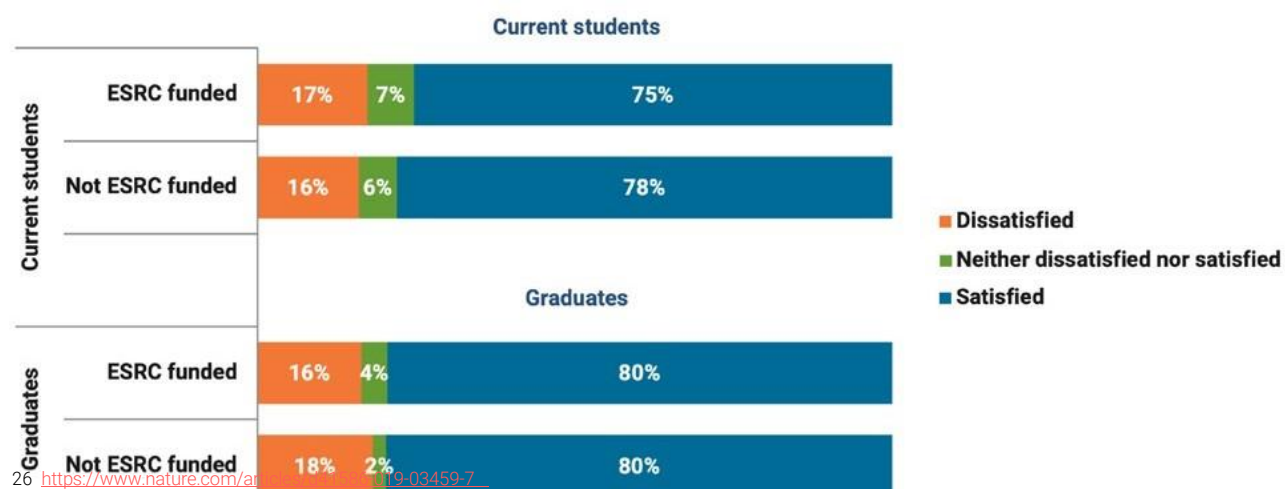
²⁴ Currently 62.6% of collaborative activity is delivery through collaborative studentships.

²⁵ <https://www.vitae.ac.uk/policy/concordat-to-support-the-career-development-of-researchers/strategy-researcher-development-and-careers>.

Satisfaction with current provision

According to our survey of social science doctoral students and graduates, most are satisfied with their decision to pursue a doctorate (77% current students, 80% graduates). This is comparable to findings from Nature's survey of more than 6,000 graduate students, which showed that 75% of PhD students said they were at least somewhat satisfied with their decision to do a PhD.²⁶ Our findings show similar levels of satisfaction with their decision for ESRC funded and non-ESRC funded students and graduates (see Figure 3).²⁷ Despite high levels of satisfaction with the decision to pursue a doctorate, approximately, one-in-three students (30%²⁸) and 25 per cent of graduates report that their doctoral programme is not meeting/did not meet their expectations. Insights from the focus groups suggest that while core research training is highly regarded, provision in more generic transferable skills is falling short. These skills are required, irrespective of a graduate's career destination, but are particularly important for the 40 per cent of graduates which, analysis of HESA data shows, take up roles outside of higher education and in some cases research.²⁹ Possible ways to address this gap and other areas identified as in need of development are explored in the following chapters.

Figure 3: Student and graduate satisfaction levels with decision to pursue a doctoral programme by funding status, (bases in brackets)

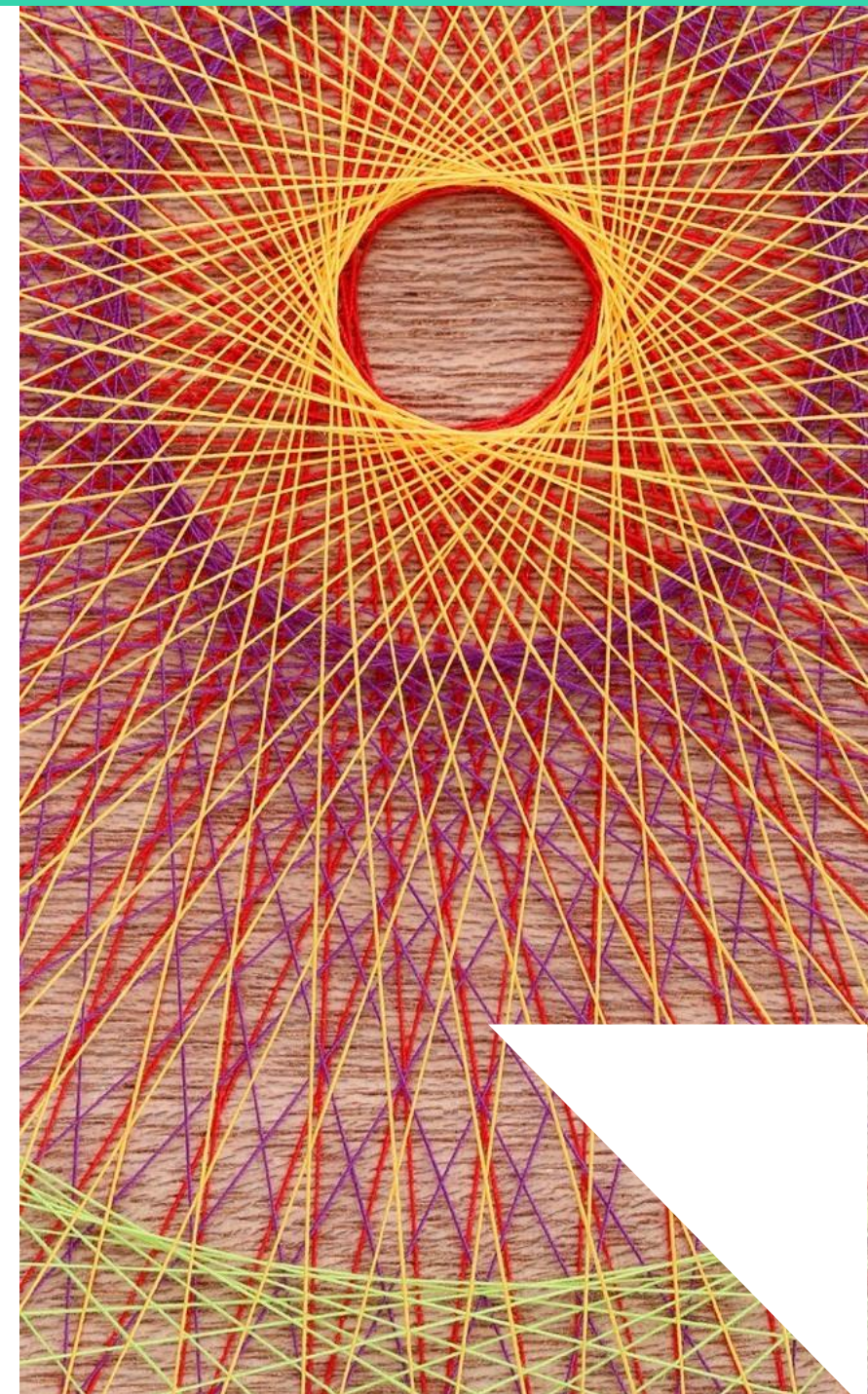


²⁶ <https://www.nature.com/articles/19-03459-7>

²⁷ There were no significant mean differences between perceptions of satisfaction to pursue a doctoral programme and funding status (current students: ESRC funded = 3.96; non-ESRC funded = 4.06), (graduates: ESRC funded = 4.04; non-ESRC funded = 4.10).

²⁸ Doctoral programme not meeting original expectations: (current students: ESRC funded = 28%; non-ESRC funded = 30%), (graduates: ESRC funded = 19%; non-ESRC funded = 25%).

²⁹ Source: unpublished research by ESRC data analysts of destination of 2011/12 – 2015/16 PhD students six months after graduation.



03.

Development of core research skills

This chapter considers the core research skills that graduates require to ensure they can compete in the global labour market. Key strengths, together with gaps in current provision, are considered and compared with international models to identify how a future offer could be further strengthened.



Key findings

- Provision of training in a broad base of social science research skills, methodologies and theories is a strength of the current UK social science PhD model. However, international commentators suggest that UK training does not provide enough emphasis on the development of quantitative skills and that which is provided is too basic.
- Core research skills provision needs to evolve to keep pace of the rapidly evolving digital landscape, particularly in relation to a wider understanding of data management, digital data collection, digital data analysis (including big data) and digital dissemination.
- Students do not always recognise the importance of transferable skills training during the doctoral experience and take-up of non-mandated skills training opportunities is mixed. Undertaking an effective individual Training Needs Analysis (TNA) at the start of a student's studies, with regular reviews throughout their programme of study, helps to ensure students receive tailored provision that they value.
- There was no consensus on the optimum timing for taught elements of core research skills. However, the evidence points to core training at the master's level to build the foundations in quantitative and qualitative methods, leaving scope for more tailored, discipline specific training throughout the doctorate.
- High-quality core research methods training, including quantitative and qualitative methods, should continue to be provided. Digital skills training needs to be more embedded and regularly updated. Training provision needs to be more personalised and tailored to individual student needs, taking account of their research area, subject discipline, prior qualifications and experience, and informed by the TNA.

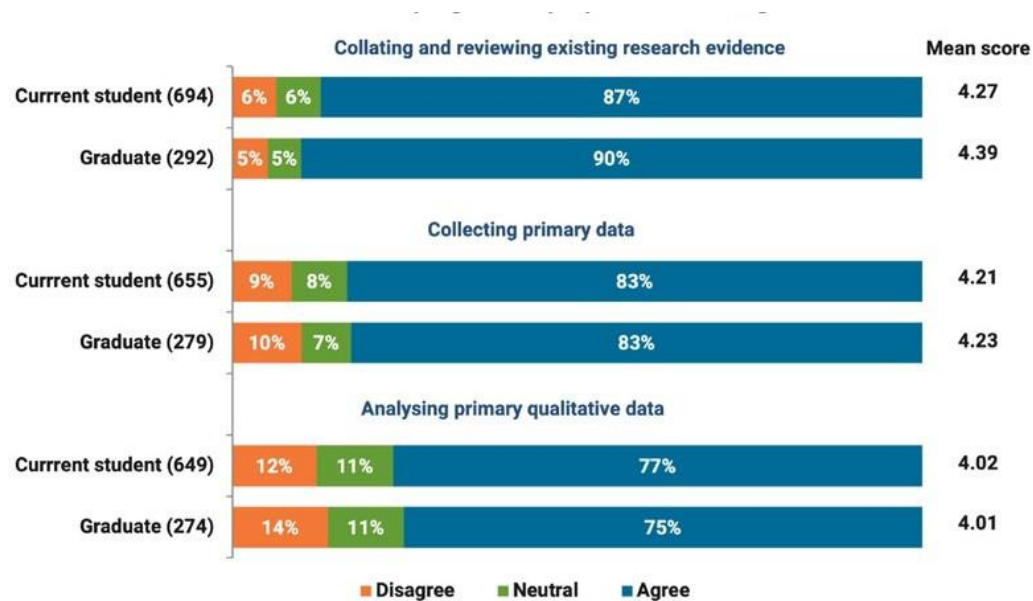
Current provision

Developing excellent research skills, including a strong foundation in both quantitative, qualitative and mixed methods training, is a core objective of the PhD. A consistent finding from the review suggests that a strength of current training provision is the broad base of social science research skills, methodologies and theories that students develop. The range of research skills training available across HEIs is viewed positively by students, supervisors and HEIs, enabling students to acquire tailored skills and confidence to address specific research questions and apply these core research skills in the workplace. DTPs and CDTs add value to the current skills training offer via supplementary provision and cohort-based training modules that offer a greater emphasis on multi-disciplinary or inter-disciplinary training and research. However, senior stakeholders and many consultation respondents, including HEI respondents, argued that the current skills training provision was too narrowly focused on the requirements of the research project. Some consultation respondents from HEIs also argued there were often variations in the quality of methods training across HEIs. One of the benefits of DTPs is that they pool expertise from across different HEIs helping to counter this.

Balance between qualitative and quantitative skills training

Doctoral students need a solid foundation in the fundamentals of both quantitative and qualitative research skills to be well-rounded researchers. Entry to some fast-track civil service schemes require both quantitative and qualitative skills. This core provision should be complemented with supplementary options to undertake specialised, advanced training in either qualitative or quantitative skills as appropriate to a student's research area and discipline. With regards to specific skills: 'reviewing research evidence', 'primary data collection' and 'analysis of primary qualitative data' are commonly perceived by students and graduates as the main skills that undertaking a doctorate equips them with (see Figure 4). Insights from senior stakeholders suggests that secondary data analysis (e.g. ESRC-funded survey-based databases, financial market-related databases) is also the cornerstone of many PhDs in the social sciences. Research that takes a more theoretical focus that precludes data is likewise a common feature of some social science PhDs.

Figure 4: Top three skills that students and graduates perceive their doctoral programme equips them with, (bases in brackets)



International commentators indicate both strengths and limitations of the UK 'core' skills provision. On the one hand, UK students develop stronger qualitative skills through an enhanced use of theory. In contrast, some international models, including the USA and Netherlands, which are delivered over longer timescales, allow more time to develop specialist research skills. This is particularly the case where subjects require significant technical requirements (e.g. econometrics). The international perspective also suggests that UK training does not provide enough emphasis on the development of quantitative skills and the training provided is too basic. There is, therefore, a fine balance to be struck in providing methods training within the limited timeframe of the UK PhD.

The really excellent undergraduate or master's student who's looking at PhD programmes in Canada, 30 years ago might have been looking to the UK as the place to go, and is now much more likely to end up in the United States. You know, there's just been that shift of gravity.

Professor of Political Science, Canada

This view is also reflected in the consultation responses that indicate a need for UK doctoral students to develop more advanced quantitative skills. It is also important to upgrade and evolve quantitative skills training, considering the increasing growth of digital and 'big' data use to ensure graduates are attractive to a range of employers. Employers across a range of industries, from legal services to the music business, outlined the growing importance advanced digital skills to their work.

The role of data science and the use of non-survey data in our work is key. I don't want to overstate it because it is not in any way replacing survey methods, but it is augmenting it and it is very important that our staff are really comfortable and confident using high-quality data assets from open government data.

Employer, Government department

Digital data literacy

The data landscape is rapidly changing, and core research skills provision needs to evolve to match this – particularly in relation to a wider understanding of data management, digital data collection, digital data analysis (including big data) and digital dissemination of both quantitative and qualitative data.

Initial findings from the data-driven research skills project³⁰ suggest that the increase in the use of artificial intelligence, the drive for use of big data, reduced opportunities to collect primary data during the COVID-19 pandemic and specific calls from research councils for data-driven research have highlighted data skills and knowledge gaps. It is important that future skills training can address these knowledge gaps in accordance with the student's research area and different disciplinary requirements, as they are seen as equally important for academic and non-academic careers. In addition, a lack of methodological expertise in these areas among academic staff can make it harder to access appropriate digital data skills training. DTPs and CDTs should continue to ensure that core research skills training remains up to date and covers cutting-edge techniques. This is particularly pertinent for data-literacy skills. There may be benefit in the ESRC working with industry and other training providers (e.g., NCRM³¹, CeMMaP³² - see Box 1 example below) to co-produce skills training programmes that draw upon a range of delivery methods to help improve reach and consistency.

BOX 1 | Example specialist training provider

CeMMAP was founded in 2000 and specialises in methods to model individual behaviour, the influences upon it and the impact of policy interventions. The centre provides training courses, masterclasses, workshops and conferences targeted at economists and social scientists who want to use microeconometrics and microdata to inform policymaking. Specialist training helps to ensure data and digital literacy keeps pace with industry demand. It became a national ESRC Research Centre in 2007.

Ensuring engagement and take-up

Insights from students and graduates suggest that the importance of skills training during the doctoral experience is not always recognised. This is in part due to the way in which the PhD is assessed, with a focus on the final thesis and viva. While many PhD programmes have core credit-bearing components that require students to acquire a minimum number of credits at the master's level (e.g. 60 credits), additional training is not always formally assessed (see Chapter 10). As a result, take-up of non-mandated skills training opportunities is mixed. This suggests that students need support to identify the skills they need to develop not just for their research project but to be competitive in the labour market and also need to know the best ways to develop these skills. Supervisors perceive that they are not always best placed to be able to signpost students to opportunities. Collaboration between DTPs/CDTs and individual supervisors/supervisory teams could be further developed to ensure supervisors are aware of the full range of training provision on offer to students and are kept updated about new/revised training modules. This could be achieved through informal meetings, workshops and promotional materials (see also Chapter 6).

Learning from international models where greater emphasis is placed on coursework elements of doctoral study could be an option to increase engagement with, and take-up of, core training. While many international examples reviewed include an element of coursework, it is only mandatory in the USA, Sweden and the Netherlands. In all examples, coursework occurs prior to engagement in research activity. Coursework is perceived to be an effective way to ensure doctoral candidates have a wider understanding of their field of study and improve their core research skills. By developing an understanding of different research methods alongside exposure to the wider philosophy of research, they are perceived to be better equipped to make a judgement on the type of analysis they want to undertake with their research.

30 <https://esrc.ukri.org/skills-and-careers/scoping-the-skills-needs-of-social-sciences-to-support-data-driven-research/>

31 National Centre for Research Methods <https://www.ncrm.ac.uk/>

32 Centre for Microdata Methods and Practice <https://www.cemmap.ac.uk/about-us/>

Ensuring a personalised training experience

Undertaking an individual TNA at the start of student's studies and then regularly reviewing and updating this (at least on an annual basis) helps to ensure students have tailored doctoral training. This is a current requirement for ESRC-funded students during their first term of studies, provided via DTPs and CDTs. While many DTPs are trying to ensure a comprehensive TNA is carried out, implementation and quality of the TNA appears to vary. Ensuring engagement and input from the lead supervisor and wider supervisory team to the TNA is essential to ensure that students recognise the value of the TNA and appropriately engage with their DTP. However, supervisors may require additional support and/or training to help with the TNA process and there are examples of current DTPs that have appointed specialist staff to support and monitor this process.

There is a lack of consensus from senior stakeholders over introducing a common research methods training programme that brings students from all social science disciplines together for the same modules. This is largely due to the view that it would be too generic and not tailored to a student's prior experience and disciplinary requirements. There is also a widespread perception that this would downgrade specialisation. In contrast, some senior stakeholders were more supportive of this proposition as it would focus on the marketable qualities that students need to compete in the labour market and they would support students to improve their core skills.

While there is general agreement from senior stakeholders that students should be able to demonstrate they are competent in core research skills, it should not be necessary to repeat training where the required skill level is already met. Mandating skills training per se does not take account of individual student needs and previous experience, particularly in professional fields (e.g. education, law), where candidates tend to be older and may have significant professional experience already.

I think everyone should have the opportunity, but I'm not sure I think they should be mandatory. I learned a lot from my prior work experiences and different jobs. I think the problem if you make it mandatory, it would not be relevant to me.

Student, School of Business

An offer comprised of compulsory and optional elements that already features as part of current provision, should continue to be the optimal structure. The evidence suggests that a future core skills training should continue to comprise compulsory and optional elements and offer sufficient flexibility so that training can be tailored to individual student requirements which are identified through a TNA. This would ensure all students achieve a minimum level of competence, while also providing opportunities for those who already possess a required skill at the basic level to engage in more advanced research skills training that is appropriate to their discipline. However, a balance must be struck as a fully bespoke offer will be costly to organise and implement.

Differing opinions on the optimum timing for taught elements of core research skills emerged from senior stakeholders. Currently, core research skills training is largely focused at the master's level, enabling students to develop a strong foundation in core, and other, skills needed to work up their research proposal (see Chapter 8). The benefit of this model is that students can exit the programme at this stage with a master's level qualification should they not wish to pursue their studies at the doctoral level, although few actually do leave at this point. There was support for a one-year foundation at the master's level (similar to the +1 element of the current model), specifically aimed at students who already have a master's and do not meet the necessary knowledge and skill requirements to progress to doctoral level study. There are also benefits in incorporating more of the taught elements throughout the doctoral stage. This would allow students to develop and then practice more advanced skills as their research progressed. Senior stakeholders were clear that the introduction of taught elements at the doctoral level should not be credit-bearing – they saw this as creating unnecessary administrative burdens and offering limited incentive to PhD students. Instead, these elements could be made requirements to progression to ensure they are taken seriously and are not merely tick-box exercises.

04.

Application of research in practice

This chapter reviews the importance of transferable employability skills necessary to support graduates to secure academic and non-academic careers. Specific skills gaps are identified, drawing on insights from a range of perspectives, including international models. The role of practice-based opportunities is considered, together with how such opportunities could be delivered to ensure future PhD graduates can compete in a global job market.

Key findings

- There is an increasing need for PhD graduates to develop transferable employability skills to ensure they can compete for both academic and non-academic positions. Differences in the transferable skill set required for academic and non-academic careers is minimal.
- Academic and non-academic employers as well as students and graduates agree that current training provision does not adequately equip students with the necessary transferable employability skills required to compete in the global labour market. Student and graduates recognise that there are gaps in their general employability skills, commercial acumen and communication skills.
- HEI stakeholders, students and employers are generally positive about the benefits of 'research-in-practice' opportunities that enable students to gain experience in applying their theoretical knowledge and methodological skills and develop employability skills. These opportunities could be delivered through a variety of activities tailored to individual student needs, ranging from masterclasses and summer schools, through collaborative projects, internships and placements.
- There is no consensus on the optimum timing for undertaking research-in-practice activity, with benefits both at the master's and doctorate level. Senior stakeholders support the vision for training/taught elements throughout the doctorate that could include practice-based activity, but there is little support for this being credit-bearing and a constituent requirement of progression.

33 HESA destination of leavers record (2012/13 – 2016/17) and HESA destination of longitudinal leavers record (2012/13).

The importance of transferable employability skills

It is important that graduates are equipped with the necessary employability skills to ensure they can compete in the global job market for both academic and non-academic roles. The majority of UK employers consulted who have experience of working with social science graduates value their resilience as well as the technical knowledge and critical thinking skills that graduates offer – this allows their organisations to undertake research that was not previously possible, thus ensuring they remain competitive.

BOX 2 | The experience of a social science PhD graduate

"Jane" works in a Parliamentary Office and provides social research advice for her colleagues. "Jane" believes that she would not have secured the job without the strong research background that her PhD and doctoral training provided. Her doctoral experience has provided her with a range of skills that are fundamental to her role. She regularly applies her core research skills to solve work-based challenges. Her role also requires her to apply team working skills and the ability to work independently, both developed through her doctoral studies. "Jane" would have welcomed the opportunity to gain a fuller understanding of the skills needed for non-academic careers and corporate knowledge of how organisations operate during her PhD. She feels that her PhD was too focused towards an academic career and found it challenging to identify employability skills training and career advice and guidance tailored to alternative routes.

However, most non-academic employers do not actively seek to recruit social sciences doctoral graduates. This means that graduates looking for non-academic jobs are more likely to be in competition with other candidates without a PhD who have a different range of skills and/or workplace experience. This is substantiated from the HESA destinations data³³ where, outside of academia, there are no sectors/employers with notably large numbers of doctoral graduate recruits. The NHS is the largest employer of social scientists outside academia, followed by local authorities and the civil service – the number of recruits is in the 10s and 100s rather than 1000s. Non-academic employers do not expect PhD graduates, including social scientists, to arrive 'fully work ready' and they expect to provide training and support. But this training tends to be focused on industry-specific knowledge and expertise rather than in developing more general skills and understanding.

Internationally, there is an increasing trend of PhD graduates progressing to non-academic careers. This is due to a range of push/pull factors. In some countries, stakeholders indicate that the majority of PhD graduates work outside academia. For example, that figure is 75 per cent in Germany. In the UK, however, only 42 per cent of social science graduates progress to non-academic careers as a 'first destination'.³⁴ German and Dutch models that embed the student in the research team as a professional researcher seen are to be particularly effective in developing employability skills. However, this is not without challenges: students can be over-dependent on their supervisor, which can be problematic if the relationship breaks down; some institutions are therefore experimenting with moving away from 'employment' status for doctoral candidates and returning to 'student' status.

There is increased competition within academia for jobs and it is difficult to secure a permanent position. About half of the academic positions available in the UK are based on fixed-term contracts.³⁵ Although graduates sometimes secure permanent lectureships relatively soon after gaining their PhD, they are expected to develop a strong publication record and demonstrate that they can secure research funding, both of which require strong transferable skills. In addition, many academic entry-level jobs are teaching focused, with limited time to undertake research. This can impede opportunities for PhD graduates to publish their work and establish a research career. This context should be a driver for doctoral students and supervisors to place greater value on transferable skills, and actively seek opportunities that enhance their employability.

Skills gaps

There is some consensus from international stakeholders and both academic and non-academic employers consulted that the distinction between the skill set required for doctoral graduates in academic and non-academic careers is minimal. The differences tend to be cultural rather than related to specific skill sets.

I really question whether a different skill set is required [to work in academic/non-academic setting], or whether it's cultural competency and ability to adapt that is more important... but it is all about how the skills are deployed in different settings. I think the context the skills are deployed in matters a lot.

Director of Research and Development, International HEI

Developing excellent employability skills is fundamental to both academic and non-academic career pathways but there is a sense that doctoral training is not equipping students with these skills as effectively as it should be. Non-academic employers consulted feel there remain gaps in employability skills. Gaps identified include:

- **General employability skills:** project management, working to tight deadlines, managing budgets, developing a business plan/grant application, stakeholder engagement.
- **Business/commercial acumen:** being able to apply theoretical knowledge to solve practical problems; being able to articulate and 'sell' the added value that their skill set offers organisations; and understanding what 'good enough' is when working within time/resource constraints. Employers value graduates who can apply research to real-life situations and adapt to situations that are often 'messy'.
- **Communication skills:** Employers state that PhD graduates commonly lack a range of communication skills, in particular the ability to present findings to diverse, non-expert audiences and producing non-technical reports in a range of formats. These skills are not currently assessed as part of the doctorate. Non-academic employers were more likely to highlight this skills gap, but the focus of the REF on research impact outside academia means these skills are also important for academic roles.

Student and graduate perceptions concur with employers' views, with low levels of agreement that doctoral training provision enables them to develop the skills to set up their own business/enterprise, develop a business plan, manage projects and manage people (see Figure 5).

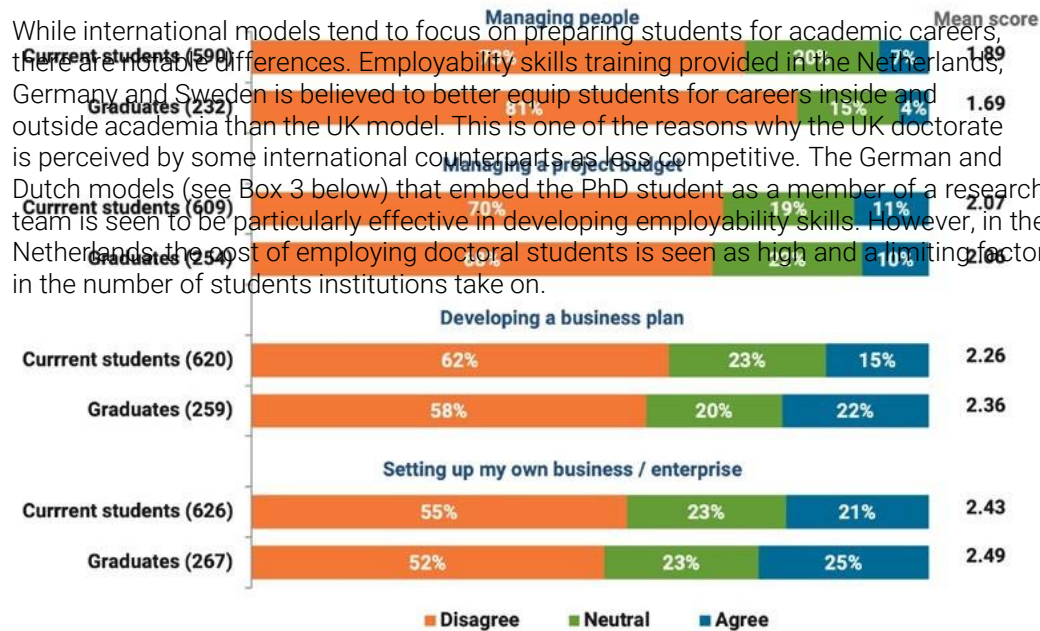
34 Vitae. (2020). What do doctoral graduates do? <https://www.vitae.ac.uk/doing-research/are-you-thinking-of-doing-a-phd/what-do-doctoral-graduates-do#Data>

35 <https://www.eui.eu/ProgrammesAndFellowships/AcademicCareersObservatory/AcademicCareersbyCountry/UnitedKingdom>

Figure 5: Bottom four transferable skills that students and graduates perceive their doctoral programme prepares them with, (bases in brackets)

The role of practice-based opportunities

While international models tend to focus on preparing students for academic careers, there are notable differences. Employability skills training provided in the Netherlands, Germany and Sweden is believed to better equip students for careers inside and outside academia than the UK model. This is one of the reasons why the UK doctorate is perceived by some international counterparts as less competitive. The German and Dutch models (see Box 3 below) that embed the PhD student as a member of a research team is seen to be particularly effective in developing employability skills. However, in the Netherlands, the cost of employing doctoral students is seen as high and a limiting factor in the number of students institutions take on.



BOX 3 | An alternative model for the PhD studentship

In the Netherlands, doctoral students are commonly an employee of the university and conduct research within faculty school or institute. They are employed as professional researchers and paid a salary and receive the same benefits that other employees receive. There are no tuition fees. Most students are employed to work on a specific project, funded through a research grant. There is an expectation that students contribute to the institution’s academic work (e.g. teaching). This approach helps to integrate students within the academic institution and increases access to college facilities. It also helps to mitigate against the accrual of debt.

Senior HEI stakeholders consulted were generally very positive about the idea of students undertaking ‘research-in-practice’ opportunities to enable them to gain experience in applying their theoretical knowledge and methodological skills and develop employability skills. Students, employers and respondents to the open consultation all highlighted placements and other practice-based opportunities as a useful way to build skills otherwise missing from doctoral training.

We strongly believe that a study visit, internship, fieldwork or overseas visiting student experience can play a crucial role in preparing students for collaborative working. First, these activities inevitably expose students to a different working environment and a different approach to research management. Second, they often involve understanding and participating in a collaborative arrangement between the PhD supervisor and the study visit host.

Supervisor, Psychology

Providing a greater range of practice-based opportunities could help prepare students to engage in collaborative and challenge-led research, ensuring the UK PhD remains innovative and competitive. Raising aware of the diverse range of careers available to social science PhD graduates could also be achieved via practice-based activity. However, some supervisors questioned the value and intended learning outcome of such opportunities. Students also voiced concerns about the additional ‘clutter’ that mandatory practice-based work could induce.

The benefits of undertaking research-in-practice opportunities at both the master’s and doctorate level were highlighted by stakeholders. At the master’s level, research-in-practice opportunities should support students to develop an understanding of the full research cycle and the application of research within and beyond academia. Undertaking practice-based activities at the doctorate level would help to further build student confidence in applying and promoting their skills and knowledge in real-life contexts, understanding industry/employer demands and communicating research findings to lay audiences.

Delivering research in practice opportunities

There are divergent views on the optimum timing for research in practice activity. Doing it at the master's level could be beneficial in helping to shape future research ideas and supporting students to develop a robust understanding of the research cycle and how their research could be applied across different disciplines. However, others perceive that students would benefit more from practice-based activities if there were integrated at the doctoral stage, when students are in a position to apply the skills that they have learned. This includes building communication skills to articulate and promote their research to a range of audiences and developing an appreciation of employer demands.

Making practice-based activity a formal requirement requires careful consideration. It would provide a mechanism to encourage engagement and promote the credibility of the DTPs' offer. Overall, there is limited support for making it mandatory, either at the master's or doctorate level. International models that offer more robust practice-based research training are more likely to be voluntary in structure.

Senior stakeholders support the vision for training/taught elements throughout the doctorate that could include practice-based activity, but there is little support for this being credit-bearing. Introducing credit-bearing activity would increase the administrative and assessment burden for both the student and HEI. Many HEIs have moved away from credit-bearing training to adopt a more flexible approach that enables students to build their own training portfolio. Other methods should be adopted to ensure high student take-up, for example, digital badging (an indicator of accomplishment of a skill that can be displayed, accessed and verified online). A minority view is that training should be a condition for progression that can be demonstrated via a reflective log to ensure it is not just a tick-box exercise. Few social science disciplines insist on credit-bearing elements in the first year of the doctorate.

A variety of practice-based opportunities

There are existing opportunities for students to engage in practice-based activities that help to strengthen their employability skills. DTPs offer a range of provision to increase exposure to different career pathways, develop transferable skills and undertake inter-disciplinary working. Furthermore, the take-up of opportunities has been mixed. Students are not always aware of such opportunities or their relevance, often have limited capacity to undertake additional activities, and there can be strong competition for good placements or other opportunities.

Given the widespread agreement that practice-based opportunities would be beneficial for all doctoral students, it is important to consider how the offer can be expanded and promoted. This is likely to involve the development of a menu of options which range in intensity, scale and focus. Such a menu could include:

- placements/internships in business, government or third-sector research roles
- attending practitioner-based masterclasses, summer schools or away-days
- participating in project-based interdisciplinary activities
- collaborative or co-produced opportunities to address user challenges.

To encourage take-up, activities need to be relevant to the student's field of study and career aspirations, recognising that these can change over the course of the doctorate (see Chapter 6). They should also take account of students' existing experience and provide an opportunity to address areas for development identified in their TNA. A review of barriers faced by under-represented students, which inhibit them from participating in practice-based opportunities, could help to ensure equal access to provision. This should include consideration of the length, timing and additional funding requirements for any opportunity. Online options, developed in response to the COVID-19 pandemic, alongside face-to-face provision may also help to expand and diversify the offer and make it more accessible for some. Having a wide range of practice-based opportunities available should increase the likelihood that students can find something that meets their needs in terms of available time and resource, links to their research and career interests and builds on their prior experience.

Many senior stakeholders, supervisors and employers reported that expanding practice-based opportunities will be challenging and require a significant investment of resource, particularly in developing and maintaining relationships with employers. It is also important to recognise that many employers who could offer appropriate practice-based opportunities for social science doctoral students are the public or third sector and some will have limited resources to support such activities. Working with employers to develop a differentiated offer will help to overcome this by enabling those with limited resources to contribute to smaller scale, less intensive activities such as a talk or masterclass, and those with greater resources to contribute to higher intensity activities such as placements. DTPs could also offer support to employers through 'how-to guides' and training sessions that provide an overview on the requirements of practice-based experiences and examples of good practice. Incentives could be provided to encourage greater employer engagement.

The successful introduction of a research-in-practice activity will also require a culture shift to ensure both students and supervisors recognise its value, for both academic and non-academic careers. Any opportunities must be high-quality, meaningful experiences for the student and not be exploitative (i.e. cheap/free labour). There should be mutual benefit for the employer. Introducing a placement model as part of practice-based activity at the doctorate level, similar to initiatives offered by the Biotechnology and Biological Sciences Research Council³⁶ (BBSRC) – see Box 4, could help to increase the credibility.

BOX 4 | Example placement scheme

Professional Internships offered as a 3-month integrated placement are provided by the BBSRC-funded DTP. These placements provide students with the opportunity to carry out work unrelated to their doctoral research. This supports students to understand the interdisciplinary value and wider context of their research through exposure to a range of opportunities to apply their PhD skills and training after they graduate.

³⁶ <https://bbsrc.ukri.org/skills/investing-doctoral-training/pips/>



05.

Interdisciplinary and collaborative working

This chapter explores the importance of interdisciplinary and collaborative working in, and beyond, the social sciences that is required for academic and non-academic careers. Opportunities are needed to ensure PhD students can increase their understanding of different theoretical and methodological approaches to tackling practical and policy problems.



Key findings

- Interdisciplinary and collaborative working enables students to increase their awareness and understanding of the application of different theoretical and methodological approaches to tackling practical and policy problems.
- Employers value interdisciplinary and collaborative working as it supports students to develop the transferable and employability skills required for both academic and non-academic careers.
- Opportunities for interdisciplinary and collaborative working do exist and the current offer by DTPs and CDTs is considered to be 'ahead of the curve'. But more funding and support is needed to expand current partnerships and establish new networks and opportunities.
- To increase and diversify interdisciplinary and collaborative working requires overcoming several challenges. These include how best to frame and define interdisciplinary working; overcoming potential tensions between supervisors from different disciplines about its value; and ensuring supervisory teams can effectively support students to communicate across disciplines and with non-technical audiences.
- Interdisciplinary and collaborative working is not just about undertaking interdisciplinary doctoral projects. Expanding and diversifying provision can be achieved in several ways including, placements and internship opportunities, collaborative PhDs with industry and international exchange programmes. Opportunities for informal collaborative working are also important.

³⁷ Which of the following have influenced your current career aspirations? Experience gained during internship/work experience placement: Current students = 13%; graduates = 11%. Collaboration with non-academic partners during my doctoral programme: Current students = 12%; graduates = 5%.

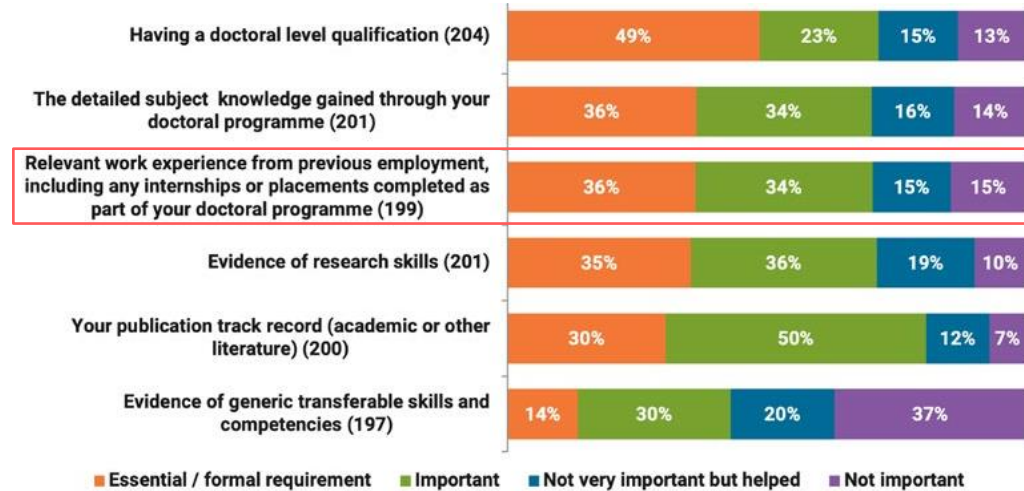
The need for interdisciplinary and collaborative working

Interdisciplinary working encompasses working with other researchers within the social sciences as well as those working outside the social sciences. Most stakeholders consulted recognise the growing need for interdisciplinary working to address key societal challenges such as climate change and pandemics. Collaboration is a broader but related concept that includes working in diverse teams, with non-researchers and across different sectors. PhD graduates are required to work collaboratively and in teams for both academic and non-academic roles. Ensuring PhD students can engage in opportunities to develop the skills and outlook necessary to support collaboration and interdisciplinary working will become increasingly important. These opportunities may include, but are certainly not limited to, undertaking interdisciplinary doctorates.

Interdisciplinary and collaborative experience is valued by both academic and non-academic employers. They value individuals who can work collaboratively and take a multi-disciplinary approach to problem-solving. Open consultation respondents highlighted that few industrial, economic, social and policy problems require a single-discipline solution. Supervisors consulted suggested that collaboration supports them to strengthen partnerships and opens new doors to other departments and/or non-academic organisations.

Only a minority of student and graduate survey respondents think that experience gained during an internship/work experience placement³⁷ and/or collaborative working with non-academic partners has influenced their career aspirations. However, students and graduates recognise the value of interdisciplinary opportunities. Graduates provided examples of how they have benefited from gaining new perspectives, such as "working with engineers was transformative". Graduate survey responses for those currently employed, show that work experience gained from previous employment, including internships/placements, is equally as important to their employers as detailed subject knowledge and research skills (see Figure 6).

Figure 6: Graduate perceptions for the importance for different aspects of doctoral training required by their employer, (bases in brackets)



Interdisciplinary activity often includes working with data in different ways and learning about alternative techniques to address the same research question. Students recognise that they can learn from seeing how others approach topics from a different perspective, even if the subject is niche and narrow. Working on interdisciplinary projects can help to overcome the issue of disciplines speaking different languages and also challenge the perception that social scientists are ‘not real scientists’.

Student and graduate survey findings suggest that they would benefit from increased interdisciplinary and collaborative working opportunities. Only half³⁸ of student and graduate survey respondents agree that their doctoral programme equips them with the skills needed to work collaboratively as part of a team. Of those graduate survey respondents currently employed, only a third perceive that their doctoral programme fully equipped them with the skills to work as part of an interdisciplinary team.

Students would also welcome more opportunities to network and collaborate with their peers to help reduce feelings of isolation. However, there are concerns about how activities would be structured and managed. There remains a strong sentiment that the onus should not be on them to identify and organise these activities. They need support to set-up collaborative projects and team-based working, particularly for students from under-represented groups who may have less well-developed networks.

Interdisciplinary and collaborative working is a strong feature of international models, particularly in Germany and Canada. Funding throughout the doctorate is made available for students to attend conferences, establish networks and many international models also include collaborative doctorates. There remains an appetite for more opportunity for interdisciplinary working in their own countries. Current provision through DTPs and CDTs is ‘ahead of the curve’. They work closely with employers to provide opportunities for students to gain an understanding of the application of their research outside of the university. This can be provided in a variety of ways, including collaborative studentships, showcase events or training days where students work on a business project, or work placement or internships (though the volume of these is not high). However, current DTP and CDT targets for engagement with collaborative activity are relatively low, with a target of 30 per cent collaboration for each cohort.

Stakeholders acknowledge that the number of partnerships with other HEIs/organisations could be increased, and employers who have existing relationships with HEIs value these. This needs to be balanced with the fact that working with non-academic employers is resource intensive and it can be challenging to maintain partnerships, particularly when collaboration is with charities and health-related organisations that often have limited resources. In some fields, drawing from a small pool of potential partners needs to be mindful of ‘stakeholder fatigue’.

³⁸ Extent to which student/graduates agree or disagree that their doctoral programme equips them with the ability to work collaboratively as part of a team: Current students = 50.5% agree; graduates = 50.7% agree.

Promoting greater interdisciplinary and collaborative working

There is a need to further increase and diversify interdisciplinary and collaborative opportunities to ensure more students can benefit. We offer suggestions on how opportunities for interdisciplinary and collaborative working can be increased and diversified.

If there is a way to expose students to life after the PhD in industry, we should be doing it. We should be investing more in the kind of research skills that employers, including academic employers, may expect from somebody who has superior research method skills. Like Design Science, things are a bit more cutting edge at the moment but they are likely to be commonplace before long.

Supervisor, Glasgow University

Senior stakeholders and supervisors are concerned about making interdisciplinary and collaborative working a mandatory requirement. Insisting on interdisciplinary working for its own sake would be problematic – a clear articulation of the purpose and benefits is needed. Some disciplines, especially those with significant technical requirements, may find this harder to accommodate in doctoral training. Some stakeholders argue that it is not required or appropriate for all doctorates and view it as a burdensome additional requirement. Potential tensions between supervisors from different disciplines and the confusion and anxiety this could cause students would be raised. Supervisors also state that interdisciplinary working can make it more challenging to publish research findings.

Successful promotion of more interdisciplinary and collaborative working will need to challenge some of these views. The framing and definition of interdisciplinary working will be important. Challenging perceptions that interdisciplinary activity relies solely on the thesis is important - requiring students to participate in interdisciplinary and collaborative working does not mean that all doctoral projects need to be interdisciplinary and collaborative.

Some supervisors believe that many students are working collaboratively but don't recognise that they are. It is important that students and supervisors recognise that different perspectives can also be gained from within disciplines. There are a wide variety of ways in which students can gain experience of working collaboratively, between and across disciplines, both within and outside the social sciences, and with employment sectors students may not have traditionally associated with the social sciences (such as construction). We outline some of these below.

The composition of the supervisory team for interdisciplinary activity requires careful consideration and should be determined by the research project. There may be benefit in including supervisors from different disciplines - though it should also be noted that those from the same discipline can also bring different perspectives.

Bringing cohorts of students together from the same as well as different disciplines means that interdisciplinary conversations happen naturally. Including informal opportunities such as ensuring physical and online study spaces are not all discipline-specific could be helpful. A core research methods training programme with a mix of compulsory and optional elements delivered at the cohort level can also provide opportunities for interdisciplinary interactions between students. Interdisciplinary opportunities could form part of other research-in-practice or enrichment activities, such as exchange and placement opportunities – see Box 5 below for one example.

BOX 5 | An example enrichment scheme for doctoral students

The Alan Turing Institute offers an enrichment scheme for doctoral students. A strength of their model is the flexible 6-, 9-, or 12-month placement where students are based at one of three Turing offices. Students typically join during the second or third year of their doctoral programme to expand and embed the work they are undertaking for their research project. The award provides additional funds for eligible students to support relocation and travel costs. Students are given the opportunity to find new collaborators for their research project, or to start a collaboration on something related to their field.

Collaborative PhDs with non-academic employers also provide excellent opportunities for developing collaborative and interdisciplinary skills as well as invaluable workplace experience to develop the employability skills outlined in Chapter 4. Stakeholders recognise that collaborative PhDs are worthwhile but challenging to deliver (See Chapter 4 for employer engagement challenges more generally). The ESRC and UKRI offer collaborative opportunities via internships, including with government departments and agencies, but more of these would be useful. The EU-funded KESS 2 (Knowledge Economy Skills Scholarships – see Box 6) scheme operated in Wales was highlighted as an example of successful partnering of research students with industrial or public sector organisations.

BOX 6 | Brokering partnerships between researchers and business

KESS 2 is a £36 million pan-Wales project supported through the Welsh Government and led by Bangor University on behalf of all universities in Wales. Building on the success of the KESS project (2009-2014) the programme links companies and organisations with academic expertise in the HE sector in Wales to undertake collaborative research projects. The objectives of the programme are to increase the research capacity of small to medium enterprises and encourage them to undertake research and recruit researchers.

International exchanges also provide opportunities for collaborative and interdisciplinary working as well as exchange of knowledge, skills and increased understanding of other cultures. This is important if UK graduates are to successfully compete in a global economy.³⁹ Funding and support to establish and strengthen doctoral programmes that involve visiting other institutions to develop international links (e.g. the University of St Andrews/University of California Berkeley exchange programme) would be highly beneficial, supporting the exchange of knowledge, skills and increasing the awareness of different cultures. Open consultation respondents highlighted that they would welcome further support for collaborative (academic and non-academic) partnerships and opportunities. Suggestions include exchange programmes and reciprocal international collaborations and embedding social science studentships as part of the Industrial Strategy Challenge Fund (ISCF) challenges.

³⁹ <https://www.britishcouncil.org/research-policy-insight/policy-reports/world-experience>



06.

Careers information, advice and guidance

This chapter explores the importance of tailored careers information, advice and guidance (CIAG) for doctoral students and the ways in which current provision could be strengthened. The benefits of raising awareness of the value-added by social sciences doctoral graduates to sectors and industries outside academia are considered.

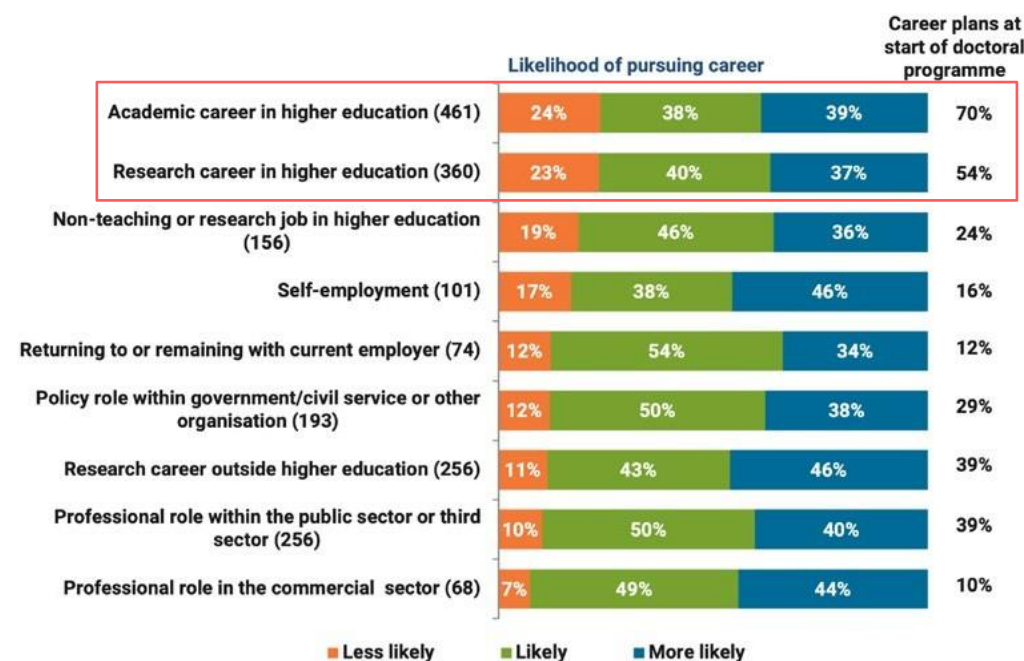
Key findings

- There is a disconnect between doctoral students' career intentions and their eventual destinations. While most aspire initially to an academic or research career, many progress into other sectors and non-research roles and move out of academia in the later stages of their working lives.
- Social sciences doctoral students need a realistic understanding of the academic job market and greater awareness of the range of potential career options outside HE where their skills will be valued. They also need to understand the value of developing transferable skills as part of their core training, irrespective of their career aspirations.
- Supervisors have a significant influence over students' career aspirations but often have limited knowledge of the full range of career options. Doctoral students need access to independent, tailored CIAG delivered by experts who understand the complexities and range of doctoral career pathways.
- Specialist career guidance and professional development support for doctoral students is not universally available and does not consistently meet students' needs. There is also a lack of data on doctoral graduate destinations and up-to-date labour market information to underpin and inform effective CIAG.
- Connecting doctoral students with alumni and employers from a range of industries (as well as professional bodies and learned societies) would help to broaden students' career horizons as well as raise employers' awareness of the valuable skill set that social scientists' offer – potentially increasing the supply of, as well as the demand for, social sciences doctoral graduates in a competitive global economy.

Doctoral career aspirations and destinations

According to the survey findings, the majority of students commence their doctoral studies aspiring to an academic (70%) or research (54%) career in HE. However, it is common for students' career aspirations to shift over time, with those initially intending to pursue an academic career more likely to change their mind than those who aspire to other career pathways. As a result, the number of students intending to pursue a career outside of HE increases over the course of doctoral training (see Figure 7 below).

Figure 7: Current student career plans at the start of their doctorate and the extent to which this has changed over the course of their studies, (bases in brackets)



Insights from the social sciences doctoral students and graduates consulted during the review suggest there are a number of reasons for this shift, including encounters with employers (e.g. through placements, internships and collaborative projects – see Chapters 4 & 5) which increase students' awareness of the range of careers available outside HE; exposure to the realities of academic life and a greater understanding of the level of competition for roles within HE; increased self-awareness and a realisation that a student may not be suited to an academic career given their skills and interests; and serendipitous career opportunities over the course of a student's doctoral training.

We recently recruited for a role and I think everybody that we interviewed either had a PhD with some sort of placement or they had been in a research role in a non-academic environment. I think if you just have a PhD with no policy experience whatsoever, I think it would be very difficult.

Graduate, Linguistics

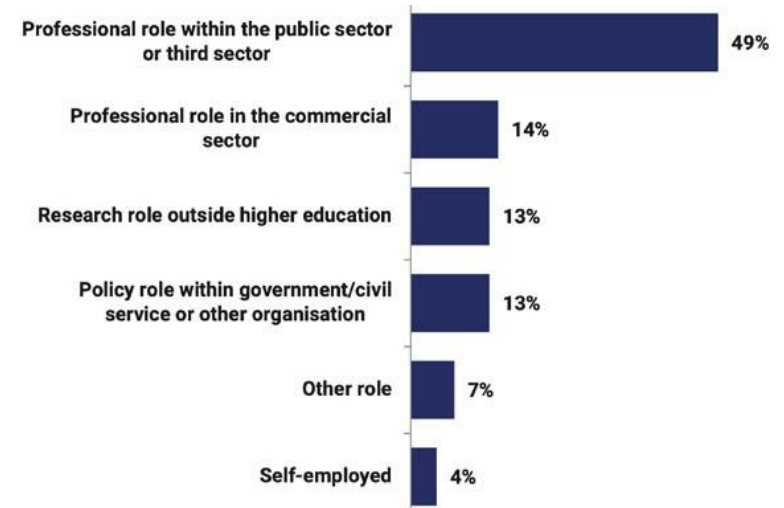
Analysis of HESA data demonstrates that this shift continues once graduates enter the labour market, with less than a third of social science doctoral graduates surveyed three-and-a-half years after graduation reporting that they had wanted an academic career.⁴⁰

Despite the shifts in student and graduate career aspirations, a majority of social sciences doctoral graduates (circa 60%) consistently progress into roles within HE – most in teaching or research roles and a minority in professional services. Most of these graduates are retained by the sector in the medium term.⁴¹ This illustrates that a substantial proportion of social sciences doctoral graduates do not progress into academic or research roles within HE. Furthermore, our survey results suggest that the majority of graduates working outside of academia are not in a dedicated research role (See Figure 8).

⁴⁰ One third of this group reporting they had not wanted an academic career were nevertheless working as 'higher education teaching professionals'.

⁴¹ According to analysis of HESA data, 88% of doctoral graduates in ESRC subjects working in SIC 8524 Tertiary Education as their first destination were still in that sector 3.5 years after graduation.

Figure 8: Graduate roles outside of HE (base = 71)



Given the apparent disconnect between initial career aspirations and graduate destinations, it is essential for students to develop a realistic understanding of both the academic job market - including the likelihood of securing a substantive academic or post-doctoral research post in HE on graduation - and the range of other career pathways available. This is not to suggest that students should be deterred from pursuing an academic career, on the contrary, but they do need to be aware of the skills and attributes required to successfully compete for work within HE and understand that many of the same skills and attributes are equally valued by employers in other sectors and industries.

In view of the growing diversity of careers available to social sciences doctoral graduates, it is important that doctoral training equips students with the skills to enable them to successfully navigate the labour market and move seamlessly between sectors. As highlighted in previous chapters, there are a number of ways to ensure students develop the transferable skills needed to be competitive, irrespective of their career aspirations; the remainder of this chapter considers the role that CIAG can also fulfil in this context, by supporting students to understand the importance of acquiring these skills, in addition to core research skills, and effective ways to develop them. It also considers how effective CIAG can support students to effectively articulate the knowledge and skills they possess in order to demonstrate their value to employers and secure employment within or outside of HE.

It is critical that students are able to dip in and out of [industry] to help them gauge where their interests really lie... It is important that industry comes to the academic sector – so that students can understand some of the challenges facing employers and help them to start thinking that they would like to go to that company because it aligns with some of the things that they are doing currently.

Employer, Supply chain transformation

CIAG provision for doctoral students

The Researcher Development Concordat⁴² is an agreement to improve support for researchers, and researcher careers in HE, in the UK. It was launched in 2008 and revised in 2019 to ensure it aligned with the UK's economic and industrial strategies and took account of the diverse and global environment that researchers increasingly work within. The Concordat addresses the environment and culture, employment, and professional and career development of researchers, and also sets out the responsibilities of stakeholders in maintaining the standards of research in the UK.

Many HEIs and DTPs have signed up to the Concordat to demonstrate their commitment to supporting the career development of their researchers, including doctoral students. Dedicated careers advisers and bespoke careers programmes at the postgraduate level are now in place in some institutions.

I feel confident about advising my doctoral students thanks to my institution. I don't have to advise them on what I don't know. I will never provide advice if I'm not the expert. We're in a fortunate position at [HEI] We have a superb employability team. I just have to pick up the phone. I know they will be looked after by people who can help them. I would feel anxious if that became part of my job. I wouldn't know what I was doing.

Supervisor, Speech and sociolinguistics

However, the findings from this review suggest that this specialist provision is not universally available and does not consistently meet students' needs. Furthermore, survey respondents report that guidance from careers advisers and seminars has little influence on their aspirations, rather it is supervisors who primarily shape their career intentions. Supervisors can draw on their wealth of HE experience to guide students aspiring to work in the sector. However, their knowledge of other career options (which, according to students, they often regard as 'inferior' to academic careers) is more limited. Students report feeling apprehensive, even reluctant, to disclose their non-academic career aspirations to their supervisors in this context. Despite a higher proportion of doctoral graduates entering careers outside HE in the comparator countries, these issues are not confined to the UK. In the absence of tailored career guidance, students aspiring to non-academic careers are likely to be less well prepared to compete for jobs in their chosen field. To help address this, DTPs are delivering information sessions about non-academic careers with input from employers of social sciences doctoral graduates from the public and private sectors and alumni working in these sectors. However, there is scope to do more.

Supporting researcher development

Centralised institutional careers services are primarily geared up to supporting undergraduate students, the vast majority of whom progress into their first substantive job or postgraduate level study on graduation. Initial motivations for pursuing a doctorate and potential carer outcomes are typically more varied and include: personal fulfilment, progression within an existing role or industry, a career change, and progression to a postdoc or other role in HE. Academic career pathways can be complex to navigate as postdoc and research contracts are often limited term and contingent on funding secured from external sources, including Research Councils.

The evidence points to a paucity of up-to-date, tailored CIAG for doctoral students which takes accounts of their varied prior experiences and diversity of career options. The consensus among stakeholders is that this gap should be addressed so that future cohorts are better prepared for the full range of careers and able to successfully complete in a global economy. There was little support for a 'twin-track' approach separating students according to their career aspirations. Rather, stakeholders agreed that all students, irrespective of their aspirations, should develop an awareness of the range of careers available, not least because the evidence demonstrates that career aspirations often change over time.

⁴² <https://www.vitae.ac.uk/policy/concordat>

The review identified several ways this could be achieved, in addition to the provision of tailored CIAG:

- Formal requirement of funding: DTPs could be required to demonstrate how they would ensure doctoral students have access to dedicated, specialist CIAG (including on non-academic careers) as part of the re-commissioning process.
- Enhanced induction: Input from specialist careers advisers, professional development leads (see below), alumni and/or employers to the induction process would ensure students start to develop an understanding of the realities of the academic job market and an awareness of the wider career options available to social sciences doctoral graduates.
- Synergy between the TNA and personal development plan: Input from a professional development specialist and career adviser to the TNA would ensure it takes account of the objectives in the personal development plan and is appropriately tailored to addressing students' career development as well as their skills needs.
- Appointment of a professional development specialist at the DTP (or institutional) level with knowledge of the range of careers available to doctoral graduates and the skills and attributes valued by employers in different sectors and industries. This role would work in tandem with careers advisers and academic supervisors, supporting students from the outset of their doctoral training, monitoring their progress and signposting them to training in response to their evolving needs. Supporting students to reflect on and articulate the skills they acquire during the PhD and recognise the transferability of these skills across a range of careers should also be an important aspect of this role.
- Increase student engagement with employers, alumni, industry bodies and learned societies: Connecting students with these key stakeholders through research-in-practice activities (see Chapter 4), talks, visits and case studies would help broaden students' horizons, increase their exposure to potential career pathways and develop their understanding of the specific skills required in different sectors and industries. Prosper (see Box 7 overleaf), a Research England Development (RED)-funded initiative, is seeking to achieve similar objectives for postdocs. Although in the relatively early stages of development, insights from this programme could help to inform a similar approach for doctoral students.

BOX 7 | A new approach to postdoctoral careers development

Led by the University of Liverpool in partnership with the University of Manchester and Lancaster University, Prosper is a new approach to career development for postdoctoral researchers. It is designed to unlock postdocs' potential to thrive in a range of careers and support the post-COVID-19 recovery. Prosper is engaging with employers, Principal Investigators (PIs) and postdocs themselves to generate resources that provide insight into the broad range of roles and opportunities available beyond academia. Current resources include studies from former postdocs and employers, self-reflections and diagnostic tools which are all available via the Prosper portal. Career clusters will be created during the second phase to enable postdocs to identify career pathways that reflect their skills, attributes and aspirations. For more information visit: www.liverpool.ac.uk/researcher/prosper/

Raising employer awareness of graduate skills

Our research with employers of social sciences doctoral graduates suggests that, at present, few seek to specifically recruit graduates qualified at this level. There are a number of reasons for this, but a lack of knowledge about the specific skills social sciences doctoral graduates offer, compared with graduates of other disciplines and those qualified to first degree or master's level only, is a contributing factor. A few employers appeared to be unsure about the breadth of skills social science PhDs have to offer.

A social science PhD, it would not be immediately obvious that you wanted the narrow niche that they got their PhD in. ... I don't think that we think a social science PhD grad will have a really high level of analytical capability.

Employer, legal services

Connecting social sciences doctoral students with employers through careers programmes, as well as through research-in-practice' activities such as placements (see Chapter 4) and involvement in multi-disciplinary supervisory teams (see Chapter 9) could help to address this knowledge gap by raising awareness of the diverse skill set that social scientists offer and how they can add value to a business or organisation. This, in turn, could bring wider benefits for students by increasing demand for social sciences doctoral graduates' skills and opening up new employment opportunities.

Improving data on graduate destinations

Effective CIAG should be underpinned by robust data on graduate destinations along with up-to-date labour market information. Destination data is not readily accessible within the UK or internationally at present, although in Germany and the USA there are large-scale longitudinal surveys of doctoral graduates.⁴³ In the UK, the Destinations of Leavers from Higher Education (DLHE) survey and its successor, Graduate Outcomes, are designed principally for understanding first-degree graduate destinations. Data is mainly available about first post-qualification destinations and only a small sample are followed up after three-and-a-half years. We offer suggestions on how the doctoral data infrastructure could be strengthened to inform researcher development, as well as wider strategies for access and participation and EDI.

43 See Hancock, Wakeling and Chubb (2019) for a summary.



07.

Pastoral support

This chapter considers the specific challenges doctoral students face and the impact these can have on their health and wellbeing. It explores current provision of pastoral support and the changes needed to address students' needs. It also considers how the root causes of the challenges students face could be reduced, including by fostering a culture of wellness in doctoral training and across the HE sector as a whole.

Key findings

- Levels of stress and anxiety among doctoral students are increasing, as is the number of students seeking support with their mental health and wellbeing.
- The causes of stress and anxiety among doctoral students are varied but some point to failings in the culture as well as the systems and processes in place within DTPs and individual institutions.
- Although there is evidence to indicate that provision of pastoral support is improving, it is not universally accessible or sufficiently tailored to doctoral students' specific needs.
- It is beyond the scope of the supervisor role to provide direct support for student mental health and wellbeing, but they can play a vital role in identifying issues and signposting to support. However, some are not aware of the services available or trained to recognise when a student is experiencing difficulties.
- Improvements in the quality and access to pastoral support would be welcomed, but structural changes are also required to foster a culture of wellness across the sector, including in doctoral training.
- Implementing and embedding sector-wide changes will take time, but smaller changes to reduce isolation and boost confidence would help to address wider wellbeing issues in the short term.

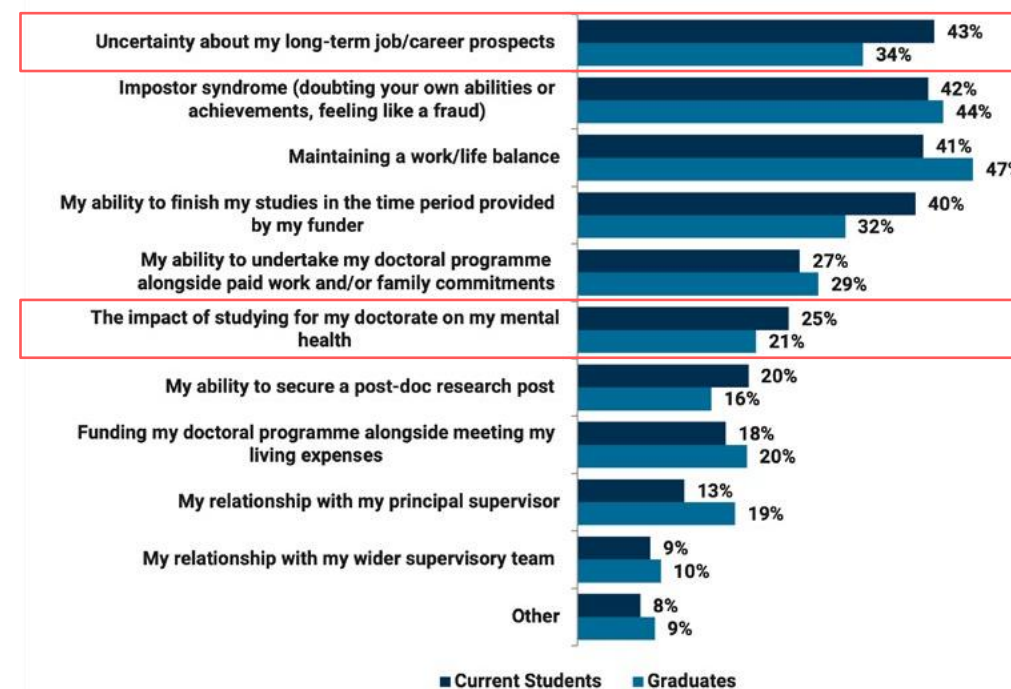
44 According to AdvanceHE's survey of postgraduate researchers 86% report marked levels of anxiety compared with two in five in the general population: <https://www.advance-he.ac.uk/news-and-views/postgraduate-researchers-are-positive-about-their-experience-despite-high-anxiety>

45 According to Nature's latest survey of graduate students, 36% sought help with anxiety and depression associated with their PhD: <https://www.nature.com/articles/d41586-019-03489-1>

Challenges faced by doctoral students

Previous research demonstrates that levels of anxiety and depression among postgraduate research students are increasing and are higher than in the population as a whole.⁴⁴ As a consequence, the proportion of students seeking help for anxiety or depression related to their PhD is growing⁴⁵, further exacerbated by the effects of COVID-19. The causes of stress and anxiety among doctoral students are varied, but include bullying, harassment and discrimination as well as feelings of isolation, pressure to succeed (measured in terms of publications, citations, conference presentations and impact of research) and concerns about future job security. These findings are broadly reflected in our survey of current students and recent graduates, as illustrated in Figure 9 below.

Figure 9: Issues that are a cause for concern among social sciences doctoral students



Although undergraduates and taught postgraduates also experience some of these challenges, many are unique or especially acute for doctoral students and particularly those who are self-funding, balancing their studies with work and family commitments, and navigating challenging supervisory relationships. The consequences of not addressing these issues are potentially far reaching, negatively effecting completion rates, students' employment prospects and their long-term mental health and wellbeing.

Current support for students

Unsurprisingly, there is widespread agreement among students, graduates and wider stakeholders that access to pastoral support tailored to the needs of doctoral students is imperative. However, our survey findings suggest that while there have been some improvements, current provision often falls short and more could be done to embed a culture of wellness across the sector.

Pastoral support is available for doctoral students to access at their HEI. However, like CIAG, centralised services are typically focused on the needs of undergraduates. Although the majority of student and graduate interviewees felt well supported and were satisfied with the pastoral services they had received, others perceived that provision was not always visible to doctoral students and was not always sufficiently tailored to their specific requirements.

Nobody asked me how I was feeling. It's that sort of thing, recognising that the person might be struggling. Not waiting for them to tell you. It's great having resources like counsellors, free access to online mindfulness. I used all of that, but it didn't get my PhD done, didn't make me feel better about my PhD. It just helped me a little bit. Supervisors and universities need to recognise that students might be experience difficulties, as much as expecting the students to tell them.

Graduate, Global health

These views are reflected in the wider sample of survey respondents. While the majority agreed that their institution offered a range of support to promote mental health and wellbeing (68%), less than a third agreed that these services were tailored to the needs of doctoral students (30%). In addition, more than three-fifths (62%) did not agree that their institution provided adequate one-to-one mental health support (see Figure 10).

Figure 10: Student and graduate perceptions of pastoral support, (bases in brackets)

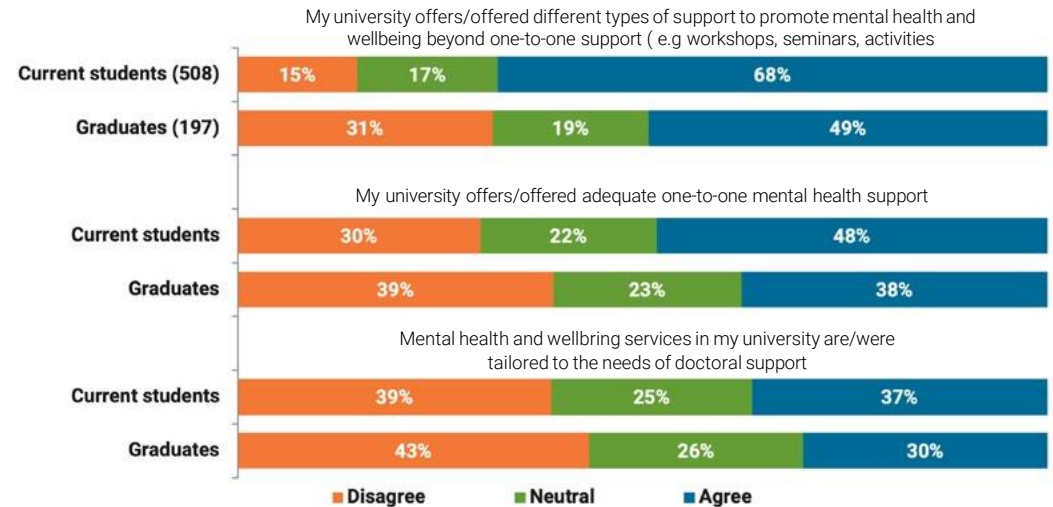
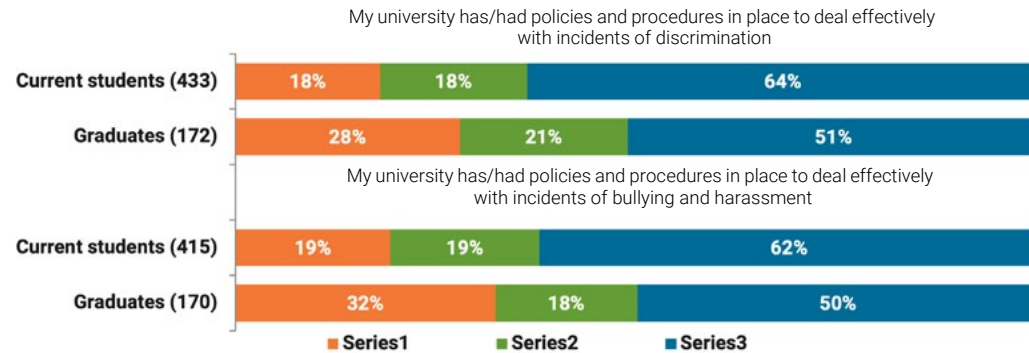


Figure 11 demonstrates that some institutions are not perceived to have effective policies and procedures in place to address the main (and potentially most serious) causes of stress and anxiety among doctoral students, including discrimination, bullying and harassment.

Figure 11: Student and graduate perceptions of policies and procedures to support wellbeing, (bases in brackets)



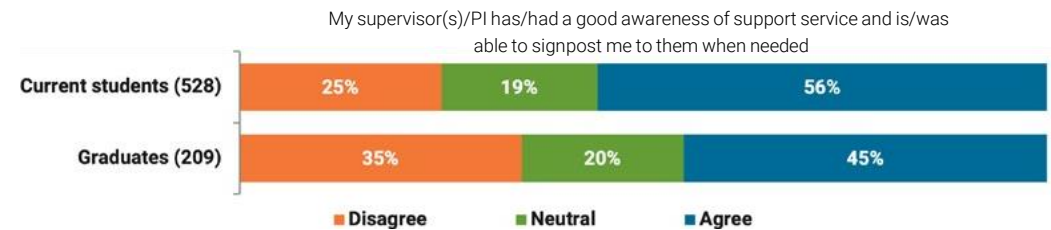
Role of the supervisor

There is widespread agreement that it is beyond the scope of the role of a supervisor to deal personally with mental health and wellbeing issues. It is, however, important for supervisors to be aware of the impact that their level of support (e.g. contact hours) and feedback can have on student confidence and wellbeing. They also need the skills to recognise when a student is experiencing issues that may impact on their health and wellbeing, so that they can signpost students to appropriate support or suggest other measures, such as switching from full- to part-time study, which could help alleviate pressure. Insights from students and graduates suggest that not all supervisors are alert to the issues that impact on student wellbeing or aware of the pastoral support services available; as a result, these supervisors are not able to effectively signpost and students' needs can go unmet (see Figure 12).

We need a lot of supervisors who are trained in different student support [...] I remember having a panic attack and my supervisor didn't know about counselling or services that the university could provide.

Student, School of business

Figure 12: Level of agreement that supervisors are aware of support services and able to signpost students, (bases in brackets)



The review has identified a number of ways to support supervisors to address gaps in their knowledge without burdening them with additional responsibilities, including training and CPD (see Chapter 9) and support from a professional development specialist (see Chapter 6). Peer mentors trained to work with doctoral students could also be a valuable source of support, complementing the role of both the supervisor and professional development specialist by helping to identify issues and directing students to appropriate services.

Embedding wellness into doctoral training

The review and wider evidence highlight a number of specific triggers of stress and anxiety; it also highlights wider issues and features of the doctoral landscape which impact on students' self-confidence, self-belief and, ultimately, their sense of wellbeing. The root causes of these issues are structural, embedded within the culture, systems and processes of individual institutions or the sector as whole; they are more challenging to address as a result.

The wider systemic issues impacting on student wellbeing include the long hours working culture, which sometimes involves students working through the night – something that over two-fifths (43%) of survey respondents agree is in operation in their institution. 'Buy-in' to this culture can be driven by students' worries about completing the PhD within the funded period and doubts about their abilities (see Figure 7). Students and graduates also told us that the physical institutional infrastructure, disciplinary and departmental boundaries, as well as the individualistic nature of researching a long-form thesis, can lead to students feeling isolated and disconnected from the wider academic community.

My research was incredibly isolating and independent because I didn't have a lab group and my supervisor was not interested in my research. I didn't have an office at all, so I had to work wherever I was working. Because I was doing data collection, I was travelling to peoples' homes by myself quite regularly. I was really isolated and alone and nobody ever checked in on me. I think I guess maybe my supervisor was expected to, but she didn't.

Graduate, Psychology

It is not within the gift of the ESRC to affect the scale of change required to deliver new systems and processes and foster a culture of wellness across the sector. However, there is scope to influence practice within funded DTPs and ROs by, for example, setting minimum expectations for supervision and support, and closer monitoring of the reasons for interruptions of study, movement between full- and part-time study and non-completion, which could all be indicators of poor student wellbeing.

Working with the other research councils to encourage them to adopt similar approaches would also provide the leadership necessary to drive changes in behaviour sector wide.

In the short term, changes could be made at a local level that would contribute to the achievement of these long-term objectives. Stakeholders identified the wellbeing benefits of doctoral systems which provide opportunities for more collegiate working, including the US 'graduate school' approach or the doctoral-candidate-as-employee arrangements in the Netherlands and Germany (though making changes to the status of UK PhD students is not within ESRC's control). Creating communal work and study spaces for doctoral students (where they do not already exist) to enable them to collaborate and network with peers and academics from different disciplines would help to overcome isolation and connect students to the wider academic community. Sharing knowledge and ideas with others would also help to boost students' confidence and self-esteem, which could help to address 'imposter syndrome', which is a concern to around two-fifths of students and recent graduates (see Figure 9).

Role of the student

Students can play an important part in their own wellbeing, although they may need support to recognise the triggers and ways to avoid them while studying for a doctorate. This support could be provided through wellbeing workshops, trained peer mentors and doctoral student communities and/or forums. However, a student's ability to take control of their own wellbeing is inextricably linked to the wider systems and culture in place. As already noted, structural changes are likely to be required across the sector to empower and enable students to take more control.

08.

Equality, diversity and inclusion

This chapter reviews evidence on access to, experiences during and outcomes from doctoral study and how these vary across EDI characteristics. Suggestions are made to address issues identified and for establishing a stronger framework for understanding EDI in the social sciences PhD.



Key findings

- Some groups are underrepresented at doctoral level in the social sciences, including among ESRC-funded students. This is particularly stark for students from certain ethnic groups. In some disciplines, women and older students are also underrepresented.
- Underrepresentation is partly symptomatic of inequalities at earlier stages of education, and this will take time to address. Interventions as part of doctoral recruitment processes will support greater diversity. This includes outreach, advice and guidance and reviewing admissions criteria and practices to identify implicit bias to ensure supervisors can assess student potential. There is also a need for shorter-term positive action to make progress, such as ring-fenced scholarships.
- ESRC has taken positive steps in requiring DTPs/CDTs to consider widening participation matters. There is evidence of commitment to addressing EDI issues among DTPs, supervisors and other stakeholders. However, there is scope for greater direction from ESRC and, for doctoral access more broadly, for UKRI.
- To support EDI efforts, data on doctoral applicants and entrants need to be better connected and, in some areas, supplemented. Routine monitoring and reporting of doctoral EDI data by DTPs and ESRC will inform and guide actions. A UKRI-wide approach may be preferable.

46 Williams, P., Bath, S., Arday, J. and Lewis, C. (2019) The Broken Pipeline – Barriers to Black PhD Students Accessing Research Council Funding. Leading Routes (www.leadingroutes.org).

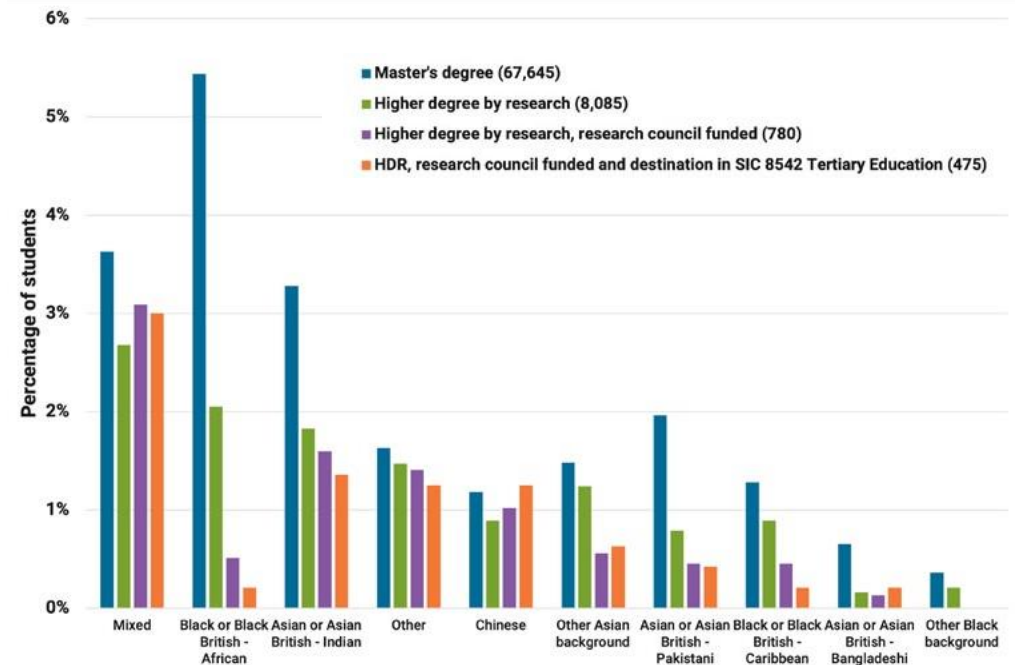
47 The equivalent figures for White students are: 79.1% (Master's), 87.8% (PhD), 90.8% (research-council funded PhD), 91.5% (research-council funded PhD entering employment in HE). Care is needed in interpreting percentages for research-council-funded PhD graduates for BAME groups as numbers are relatively small.

48 Statistics for disciplines with fewer than 25 research-council funded students in the dataset across 2012/13 – 2016/17 are suppressed.

Underrepresentation at the doctoral level

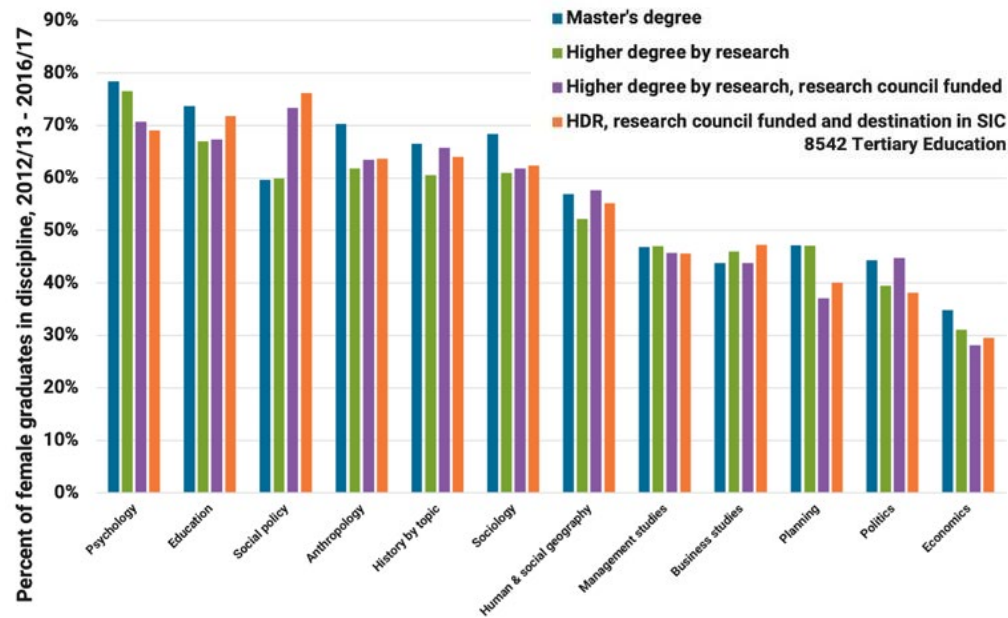
There are inequalities for key groups in access to, participation in and outcomes following doctoral study. Access to research council studentships by students from Black, Asian and Minority Ethnic (BAME) backgrounds is low, especially for Black students. Analysis of destinations data for postgraduates in ESRC subjects (see Figure 14 on page 50) shows that BAME groups' representation declines between master's degree and PhD level; and is lower still among research-council-funded students, except for the Chinese and Mixed groups. Furthermore, representation declines still further among those research-council funded PhD graduates who enter employment in higher education (the fourth category, designated by the orange bar in Figure 13). The patterns for Black, Pakistani and Bangladeshi groups are particularly concerning.

Figure 13: Proportion of BAME students by stage/funding (bases in brackets)



Turning to gender, patterns of women's representation are more complex. In most, but not all ESRC disciplines, women's representation is lower among PhD graduates than it is among master's graduates (see Figure 14). This is notably the case in Anthropology, Economics, Economic & Social History, Education, Geography, Politics, Psychology and Sociology; but not evident in Business and Management Studies, or in Social Policy. This is likely to be influenced by the fact some disciplines are heavily skewed towards one gender at undergraduate and master's level.

Figure 14: Proportion of women by stage/funding by social sciences discipline



At undergraduate level, much attention has been paid to socio-economic inequalities in access and there is previous evidence of socio-economic inequalities in access to the PhD.⁴⁹ However socio-economic background data is not readily available for postgraduates to allow us to comprehensively investigate patterns. Doctoral students' age is recorded, however. Analysis shows that more than three-quarters of research-council-funded doctoral graduates in ESRC subjects were under 30 on entry. Only about 1 in 20 were over 40, but notably different age profiles are seen in subjects with professional connections, especially Education.

The profile in many STEM subjects is skewed younger than this. There is a perception from some that the current PhD model is tailored towards younger students progressing straight from their undergraduate degree, through master's to PhD, and studying full time. Much of the skills training is directed at students who do not have prior employment experience and terminology such as 'Early Career Researcher' is problematic for mature students who can have a careers-worth of experience. This report's recommendations on approaches to TNAs will help address this issue.

In discussions with stakeholders there was a perception that equality, diversity and inclusion issues occur further back in the educational pipeline and are already endemic and entrenched by undergraduate level. This can make it more challenging to bring about change at the doctoral stage. DTPs include elite institutions that do not traditionally attract underrepresented student groups and previous research shows that progression into PhD studies is far higher among those same elite institutions.⁵⁰ Addressing earlier inequalities will eventually 'trickle up' to PhD level but will take a long time. The urgency suggested by the stark figures on the underrepresentation of many BAME groups suggest that positive action is required at entry to PhDs and at postdoctoral level to adjust for earlier inequalities.

Stakeholders also identified funding as a challenge for access. A common view to emerge was that access to, and levels of funding perpetuates structural inequalities for those who are economically disadvantaged and/or not in a position to financially support their doctoral studies. Many viewed current levels of funding as insufficient to cover living costs, especially the high living costs in particular regions (such as London), which could deter students from applying to pursue a PhD. Without systematic data on PhD applications compared to the population of qualified graduates, it is difficult to evaluate this claim. As stipend levels are set centrally, this may be something for the 'New Deal' for postgraduate research students consultation to explore.⁵¹ The impact of COVID-19 is perceived to be perpetuating inequalities, particularly for female students with caring responsibilities and international students who are unable to travel to the UK for study.

49 Wakeling, P. (2017) Measuring doctoral student diversity: Socio-economic background. Swindon: Research Councils UK.

50 Wakeling, P. (2017) 'A glass half full? Social class and access to postgraduate study'. In Waller, R., Ingram, N. and Ward, M. R. M. (eds) Higher Education and Social Inequalities: University admissions, experiences and outcomes. London: Routledge and British Sociological Association.

51 Department for Business, Energy & Industrial Strategy (2021) R&D People and Culture Strategy – People at the heart of R&D https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004685/r_d-people-culture-strategy.pdf

Ensuring a diverse student population

Making progress on diversifying the social science PhD population will need action at different levels of the PhD system (see Figure 3, chapter 2). Some action will be most effective if taken across UKRI; there are some areas where it would be appropriate for the ESRC to lead; and for others it may be preferable for action to be at the level of individual DTP/CDTs and institutions.

The evidence in Figures 13 and 14 presents a concerning picture. It is suggested that both short-term and long-term interventions are needed to adjust this. Longer term actions will involve a programme of widening participation activity for doctoral studies which is analogous to that in place for initial access to higher education. That should include outreach to underrepresented groups, targeting participation ‘cold spots’, advice and guidance and reviewing admissions criteria and practices to ensure they are fair and valid.

Evidence from US work to diversify graduate admissions points to the last point in particular as critical: *“in PhD programs which enrolled and graduated more women and underrepresented minority students than their field, every single one reformed admissions criteria and practices.”*⁵² This could be thought of as a kind of ‘contextualised admissions’ for PhD entry. Such activity could include reviewing the entry requirements for social science PhDs to address any implicit bias introduced by, for instance, expecting a fully developed research proposal, which disadvantages those without certain kinds of prior preparation and may exclude students with potential. Supervisors indicated that they would welcome guidance in how to assess potential more broadly, including taking into account prior experiential learning of mature students.

Greater co-ordination and direction of equality, diversity and inclusion activity is needed, both at UKRI level, and across ESRC DTPs/CDTs. ESRC already requires institutions in receipt of postgraduate training awards to develop their own widening participation strategy and undertakes some monitoring of data, such as numbers of applications and awards.⁵³ At present, however, there is no formal mechanism for bringing together such local initiatives, systematically learning from best practice, or highlighting particular priority themes or mechanisms.

This is the case both across ESRC-funded DTPs/CDTs and also across UKRI. While there is some benefit to local ownership and action, this can also mean a lack of scale, which limits the efficacy of initiatives and the capacity to generalise on (for instance) effective actions.

One potentially promising action would be the creation of ring-fenced dedicated funding for addressing priority areas. Data suggests that action to increase the proportion of PhD students from BAME groups is urgently needed as without short-term action, current inequalities are likely to persist for some time. Some DTPs have begun to offer ring-fenced scholarship to students from specific groups, with a positive action mandate. For instance, the White Rose DTP offers two awards for Black British students for 2021 entry. This led to the Stuart Hall Foundation supporting another studentship – demonstrating potential appetite among other external trusts and foundations to co-fund dedicated scholarships. Such initiatives would benefit from being scaled up, potentially at council level.⁵⁴ The evidence in Figure 13 also points to issues in progression to postdoctoral/academic positions for BAME PhD graduates, meaning some ring-fencing of postdoctoral fellowships may also be fruitful for improving diversity.

Smaller-scale actions will also help in improving diversity. Incorporating issues of EDI, such as unconscious bias, as part of supervisors’ CPD (see following Chapter) may help to support them in developing effective student-supervisor relationships which are tailored to diverse student needs. One quick win would be clearer communication of existing flexibility, such as the facility to switch readily between full-time and part-time study for ESRC-funded students, would also be helpful as several students and supervisors did not appear to know this was an option.

52 Posselt, J. R. (2020) *Equity in Science: Representation, Culture and the Dynamics of Change in Graduate Education*. Stanford, CA: Stanford University Press, p. 7.

53 ESRC Postgraduate Training and Development Guidelines Second Edition (2015), pp 17-18, 24.

54 It is noted that further work in this area will be enabled through the current Office for Students/Research England funding competition to reduce inequalities in participation by BAME students at PhD level. This initiative only applies to England, however.

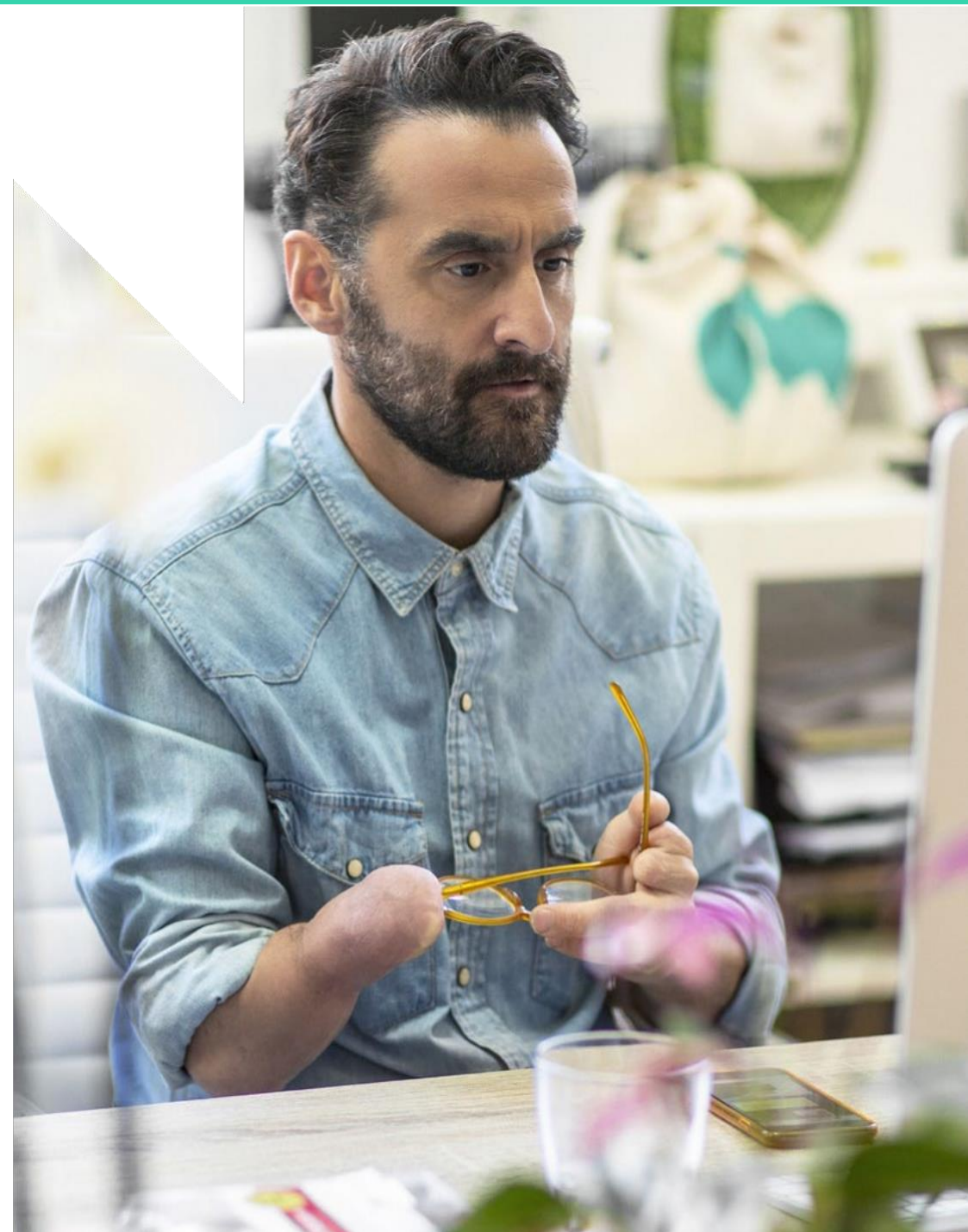
Monitoring EDI

ESRC already requires that DTPs monitor EDI data and has asked DTPs to provide evidence of their actions to widen participation through mid-term reviews. Further progress on widening PhD participation will require a step-change in the collation and analysis of EDI data. This should take place at two levels: by ESRC (and the other research councils) under the umbrella of UKRI; and by the DTPs. A consequence would be action by many HEIs, through their various DTPs/CDTs.

At UKRI level, creating a regular lifecycle picture based on existing datasets, from first-degree through to doctoral graduation and destination,⁵⁵ would give a powerful resource for understanding pathways into and out of doctoral study, including the EDI dimensions of those transitions and the points at which under-represented groups 'drop out'. Importantly this would enable the identification of important background characteristics such as socio-economic background and first-degree discipline/institution/attainment which are not currently captured for doctoral students. Most of the data needed to undertake this monitoring already exists in HESA datasets, but previously it has been necessary to make bespoke requests for such data linkage. Establishing a regular and routine annual reporting arrangement using such linkages will considerably improve understanding of the demographics of the social science PhD population for ESRC, although it would be advisable that such a dataset is held at UKRI level, since all councils will have similar needs for understanding EDI. Ensuring that ESRC-funded students are more accurately flagged in institutional student number returns will also be of benefit. Potentially, data from the Longitudinal Education Outcomes dataset could be added to capture some longer-term outcomes (salary and standard industrial classification of employer) for PhD graduates.

Alongside better co-ordination of existing data, DTPs and institutions will have a role in collecting and monitoring some additional information. This will include certain characteristics, such as socio-economic background and most recent activity (e.g. employment), as well as in recording and monitoring the characteristics of PhD applicants and the relative success rate of different groups. Responses from stakeholders as part of this review indicates that ESRC's emphasis on widening participation strategies has catalysed a serious commitment among DTPs and supervisors to the EDI agenda, but also some uncertainty about the most effective and evidence-based actions they could take.

⁵⁵ The Graduate Outcomes Survey has now replaced the Destination of Leavers from Higher Education Survey for determining the activity of graduates after successful completion of their studies. Some concerns have been raised about the coverage of the new survey and it would be prudent to review its utility for understanding doctoral destinations.



09.

The role of the supervisor

This chapter outlines perceptions about the student-supervisor model and student satisfaction with the level of support provided. The consequences of poor supervisory experiences are reviewed and recommendations to improve student-supervisor relationships are proposed.



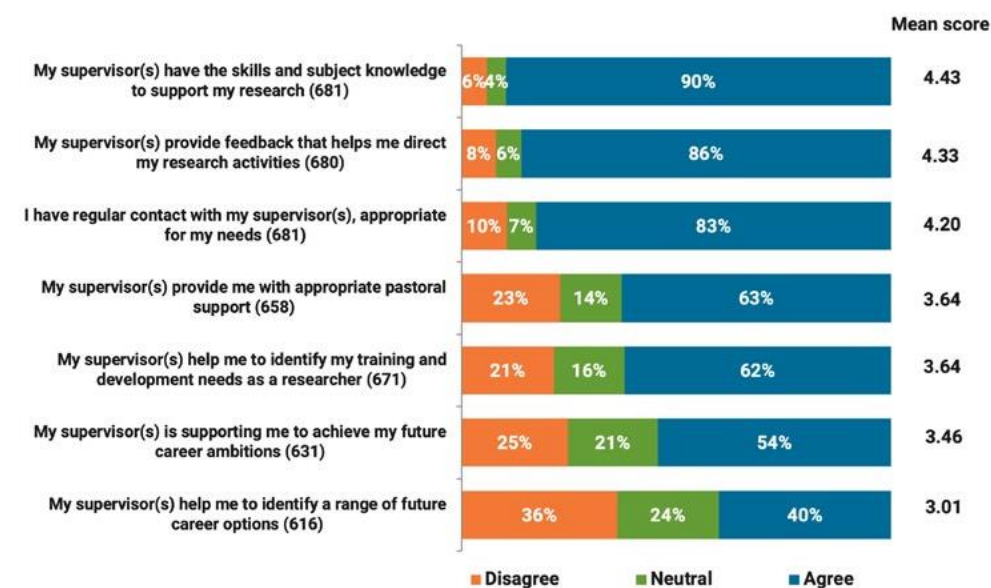
Key findings

- Supervisors are critical to a positive doctoral experience and outcome for students. Most students are satisfied with the current supervisory model. However, a positive experience is far from guaranteed and a poor supervisory relationship can have a negative impact on student mental health.
- Supervisors can have a narrow conception of the purpose of the doctorate and be less willing or able to effectively support students to undertake training or other enrichment activities.
- The predominantly academic background of supervisors means they are not well equipped to provide advice and guidance on careers beyond academia.
- Expecting supervisors to take on lots of additional responsibilities is not the answer; although they do need to be able to signpost students to additional support and encourage them to take up those opportunities.
- We recommend ESRC makes training and ongoing CPD a requirement for supervisors. Supervisor buy-in to the changes described in this report is critical. Supervisors should be actively involved in developing and implementing the report recommendations.

The student-supervisor relationship

The supervisor plays a crucial role in the doctorate and the quality of the student's relationship with their supervisor(s) has a considerable impact both on successful completion and student wellbeing. Overall, students are satisfied with their supervisory arrangements and perceive that the current supervisory model is effective (See Figure 15). Students generally feel their supervisor(s) have the necessary skills and expert subject knowledge to help guide and support their research and provide useful feedback. The passion and accomplishments of academic staff, often leaders in their field, are highlighted as particular strengths of the current UK social science doctorate. Those students who report a positive supervisory experience are complimentary of the rapport developed with their supervisor, and the flexibility in supervisory arrangements.

Figure 15: Student perceptions of supervisory skills and knowledge, (bases in brackets)



However, a positive experience is not universal among social science PhD students and graduates. Student satisfaction is more equivocal in relation to pastoral support, help with identifying training and development needs and careers guidance. Twenty-three per cent of survey respondents disagreed that their supervisor provided appropriate pastoral support. A poor relationship with supervisors is highlighted as a key factor contributing to poor student mental health. This can stem from a lack of clear direction, disagreements (between student and supervisor, or between supervisors where there is more than one), negative feedback being delivered in an inappropriate way and bullying and exploitation of students. Feedback suggests that some supervisors do not always appreciate the wider issues that students must deal with, particularly around mental and physical wellbeing. Some supervisors are also said to lack awareness of the additional challenges that international students can face.

My supervisor was extremely 'hands off'. I probably met with her maybe about 10 times in the entirety of my PhD. I just wasn't a priority for her. She had other PhD students and I think she didn't feel that she could give me the advice that I needed on my research because it wasn't exactly aligned with her own research. It just wasn't particularly great. She just wasn't particularly responsive and certainly didn't give me any advice on life after my PhD.

Graduate

Where student-supervisor relationships have deteriorated, it is often attributed to a lack of contact time. There is less time to build the necessary rapport and students feel under pressure to use the limited time available to focus on discussing academic issues only. According to our survey results, most students and graduates felt they had regular contact with their supervisor appropriate to their needs. However, contact time with supervisors varies substantially. Nearly three-quarters of current students have, on average, three hours or less of one-to-one contact with their supervisor each month. Seven per cent have more than ten hours of supervisor contact per month.

We found evidence of disagreement between supervisors about the purpose of the PhD, some feeling it should primarily be for training academics, and several questioned the

need for changes to the current model. Feedback from students and graduates indicates that some supervisors place less importance on broad-based methods training and opportunities to gain employment experience. There was a clear sense that supervisors are often focused on ensuring students complete their thesis and everything else is of secondary importance. This focus can be due to institutional pressure to ensure students submit their thesis on time and may be related to the fact the current funding period is generally not seen as long enough to fit in everything students are recommended to do (see following Chapter).

I didn't feel like I got much help. Maybe I'm not giving enough credit. I'm certainly not saying my supervisors were not good, but I don't feel like I got much support. It was more, 'How are you going to finish your PhD?' The focus seemed to be on whether you are going to finish it.

Graduate

Students are less satisfied with the ability of their supervisors to provide careers support. Over half of students responding to our survey agree that their supervisor is supporting them to achieve their future career ambitions, but only 40 per cent feel their supervisor helps them to identify a range of careers options. The predominantly academic background of supervisors can mean that they do not have the experience or knowledge to signpost students to non-academic career pathways or advise on the skills and training necessary to pursue them. There is a perception that some supervisors see the doctorate as primarily training for an academic career and pursuing other avenues is less desirable.

As a historian, the expectation is that you do go towards the HE path. I know my own supervisors aren't going to suggest anything other than going further and trying to get onto the HE path [...] I think my supervisor is supportive and knowledgeable and helpful for anything that relates to an academic career but offers no pointers for anything that doesn't.

Student

This problem is not unique to ESRC-funded social science PhDs, as demonstrated by the recent report published by HEPI.⁵⁶ This states that only 54 per cent of students surveyed believe members of their department are open to the idea of them pursuing a career outside academia and only 25 per cent think members of their department have useful advice on careers outside academia.

The role of the supervisor in doctoral training

In this report, we recommend changes to, and further development of, aspects of doctoral study, including greater opportunities for bespoke training; experience of research-in-practice, collaborative and interdisciplinary work; and individualised careers and pastoral support. The supervisor has a key role in supporting and encouraging the student to take up these opportunities; their willingness and capacity to do this is critical to the successful implementation of our recommendations.

However, expecting supervisors to take on lots of additional responsibilities is not the answer. There is widespread support for the current model, where the main role of the supervisor is to support students to meet the disciplinary and methodological requirements of the doctorate. It is unrealistic to expect supervisors to also be experts in careers and mental health. Elsewhere, we recommend DTPs employ dedicated staff with specialist expertise to provide additional researcher development support.

What is required is for supervisors to have sufficient knowledge to be able to signpost to sources of information, advice and guidance. They also need to be able to recognise the signs of a deterioration in student wellbeing and to support students to find and take up appropriate support. It is, therefore, essential that supervisors are in regular contact with students, and that time is allocated during one-to-one meetings to explore issues other than work towards the thesis. Regular contact is particularly important during the pandemic and associated lockdowns, where students may be feeling particularly isolated. As one respondent to the open consultation notes:

It is important for supervisors to keep in close contact with their students and advise them to seek help if they perceive it is needed [...] Moreover, all supervisors have received mental health and wellbeing training to spot early warning signs of ill-health, which is considered mandatory before supervision can commence.

Senior stakeholder

Supervisor welfare is also important and there is concern that increasing demands on supervisors can impact on their ability to support students. What students report is alienation from supervisors who are themselves suffering from anxiety and overwork, as well as the grim reality of an incredibly competitive job market and a recession.

Senior stakeholder

Responses to the open consultation and senior stakeholders were supportive of the need for formal supervisor training, and it is something that some HEIs have already put in place (see example below).

BOX 8 | Example of supervisor CPD

In addition to training for new supervisors, the University of Sheffield requires all PhD supervisors to undertake regular continual professional development of supervision skills. Participants choose from three topics to focus on: this year the topics include mental health and wellbeing. This raises supervisor awareness of the causes and symptoms of poor mental health and, importantly, where they can signpost students for help.

We recommend supervisors undertake mandatory, accredited training to supervise ESRC students. Making the training mandatory signals the importance of this and ensures it is taken seriously. Supervisor training should include:

- equality, diversity and inclusion issues
- having difficult conversations
- General Data Protection Regulation (GDPR)
- coaching skills
- providing constructive feedback
- key postgraduate researcher destinations and the broad range of career possibilities that social science PhDs open up
- understanding power dynamics, and
- mental health first aid.

⁵⁶ Cornell, B (2020) PhD Life: The UK Student Experience HEPI Report 131 <https://www.hepi.ac.uk/2020/06/25/phd-life-the-uk-student-experience/>

Initial training should be supported by a requirement for continuing professional development (CPD), to ensure that supervisors' skills remain up to date and that they are aware of the latest labour market trends. Ongoing CPD also provides a valuable opportunity to develop a community of supervisory practice and for supervisors to share experiences and offer each other mutual support.

While this might not be an issue unique to ESRC-funded studentships, ESRC should show leadership in this area. We recommend ESRC works in collaboration with the UK Council for Graduate Education (UKCGE) to develop a suitable, high-quality training and CPD package. The effectiveness and impact of this should be piloted and evaluated.

A more bespoke doctoral experience arguably places greater importance on the role of the supervisor in supporting students to fully embrace the opportunities available to them. Supervisors are influential on students, even though additional specialist staff get involved in elements such as the TNA. Supervisors need to be persuaded as to the value and benefit of students focusing on activities beyond their thesis, in order to gain a wider set of skills and experiences. Engaging supervisors in developing new approaches and implementing change is critical to ensure their buy-in. Indeed, the supervisors we engaged with in our workshops were supportive of the aims and ambitions of many of the proposed changes, but were keen that additional requirements were high quality, had clear learning objectives, met individual needs and that students had sufficient time within an already busy programme to take them on.



10.

Duration, funding and form of the PhD

This chapter considers how fundamental changes to the duration, funding and form of the social science PhD could help to enhance provision and ensure it remains 'fit for purpose' in a global economy, while also taking account of EDI and protecting student wellbeing.

Key findings

- The consensus is that the funding period of the current social science PhD is not long enough. There is broad support for extending the funding period to four years, to enable students to undertake additional training, but little appetite for substantially longer PhD programmes like the US model.
- Without additional funding, the implication of extending the PhD funding period to four years is fewer funded studentships. There is also a risk of an adverse impact on equality and diversity and completion rates. The effects of any changes to the funding period should be evaluated.
- It is important to continue to offer a range of doctoral structures and pathways to ensure the PhD is aligned to the needs of individual students and disciplines and remains at the cutting edge.
- Assessment signals what is important. As a result, students and supervisors focus on the thesis as this is what affects the award of the PhD. Incorporating assessment of other important elements, such as research-in-practice activities and additional training, would provide a stronger incentive to take up these opportunities.
- The long-form monograph thesis looks increasingly archaic, given the importance of publishing journal articles and other short-form reports in both academic and non-academic career paths. Alternative forms of final output should be explored and encouraged.

The case for a longer PhD

The consensus is that the current funding period for completing a UK social science PhD is insufficient. ESRC studentship funding is for an estimated average of 3.5 years based on a 50:50 split of 1+3 and +3 awards.⁵⁷ Stakeholders stated that a significant proportion of students do not complete within this timeframe. Most UK universities allow for a one-year writing-up period at a significantly reduced fee, but this is not covered by ESRC financial support. Many students routinely use this additional year. Students describe feeling pressure to race against the 'funding clock' to complete their PhDs. This is one of many stressors that can negatively affect mental health. Needing to complete before funding runs out is a particular concern for students from disadvantaged backgrounds who may be unable to support themselves without funding. Insufficient time can also present a significant barrier for international students whose visas may expire before they have completed.

Pressure to complete within the funding period means there can be limited space to undertake additional training and other opportunities, such as those outlined in Chapters 3 to 5, affecting the breadth and depth of the student experience. Students and graduates often report that there is not enough time to make the most of the many opportunities available to them, as simply completing their PhD means they have a full workload. This makes getting good advice and guidance on how to select what else to participate in even more important.

My supervisor just said, 'get your PhD done. Ignore the training. you are here to get your doctorate. This is what you should be spending most of your time doing'. However, my school said that I needed 70 hours of training per term. As a first year, I did exactly what my school said. My supervisor said to me, 'Why are you doing this? You're spending a day every week doing some kind of training.

Student, Criminology

⁵⁷ ESRC (2021) ESRC Postgraduate Funding Guide ESRC <https://esrc.ukri.org/files/skills-and-careers/doctoral-training/postgraduate-funding-guide/>

Supervisors and senior stakeholders were clear that the current ESRC requirements result in a very full programme. Any new compulsory elements would require additional funded time for students to undertake them. Indeed, some stakeholders feel that the funding period should be extended merely to accommodate the current requirements.

There is broad support across the sector for extending the PhD funding period to four years but little appetite for substantially longer PhD programmes like some international models. Extending the duration of PhD funding should allow students more time to develop specialist skills and undertake activities such as public engagement, placements, collaborative activity and networking and teaching. Students said that with more time they would be more inclined to take up training and other opportunities not directly related to completing their thesis. Extra funded time would particularly be welcomed by those pursuing interdisciplinary PhDs that may require more diverse and intensive skills training. A longer funding period may also help reduce the stress and anxiety students can face in completing their PhD without funding or in trying to ensure they complete before their funding runs out, if self-financing a final year is not an option.

Students often spend their fourth-year grappling with the need to complete a thesis while earning a living; funding to submission (within 4 years) would help improved wellbeing for students at this stage.

Open consultation response

There was also support from some for greater discretion to extend the PhD funding period for specific purposes on a case-by-case basis, such as to allow someone to undertake a placement or to develop articles for publication. However, challenges with this approach were also highlighted, including additional bureaucracy to consider requests and make equitable decisions. It was suggested students might play such a system by applying for time for additional activities, but then use it as extra time to work on their thesis. Overall, there was greater support for a blanket extension to the funding period rather than the complexity of having lots of varying-length studentships.

Assuming a fixed studentship funding pot, the implication of extending the PhD funding period to four years is fewer funded studentships. Despite this, senior stakeholders were supportive of the proposal. Some supervisors felt that a reduction in funded studentships might help with the mismatch between the proportion of students who wished to pursue a career in academia and the number of available positions.

However, there was concern that a reduction in studentships and/or an extension to the expected length of the doctorate could have a negative impact on the diversity of the student body. Fewer studentships would mean greater competition, which would need careful handling to ensure studentships were not dominated by students from the most advantaged backgrounds. The prospect of intense study with limited financial support for four years may be less than enticing for some, particularly if a year or more of Master's-level core training is also required up front. Supervisors argue that attracting under-represented groups to PhD study is challenging already and making the programme longer will not help this. Some students value having a focused timescale in which to complete their PhD with a clear deadline and structured approach, rather than something more open-ended. Some international students said they were particularly attracted by the relatively short timescales of UK PhDs compared with the PhDs in other countries.

There may also be a risk that extending the PhD funding duration may adversely affect completion rates. The UK is one of a set of countries with doctoral completion rates of around 75 per cent, a figure based on students finishing with seven years full-time, or ten years part-time.⁵⁸ High attrition rates are a particular problem in the longer USA model.⁵⁹ Further, insights from international stakeholders suggests that the likely duration of the PhD is $x + 1$, where x is the expected length. This suggests that simply increasing the length of the PhD may not, on its own, solve the problem of students not completing before their funding ends. Some students suggested a key skill developed through doctoral study should be working within limited timeframes and more help with time management would be helpful. This supports evidence reported elsewhere that time management skills are sometimes lacking among PhD graduates.

There is also a need to ensure that supervisor expectations of what can be achieved are reasonable – a key part of their role is to ensure what the student is proposing is realistic within the time available. Senior stakeholders suggested some projects were not feasible within three years and 43 per cent of current students responding to our survey agreed there was a long-hours culture at their university, including sometimes working through the night, to complete their research.

58 Clarke, G. & Lunt, I. (2014). International comparisons in postgraduate education: quality, access and employment outcomes. Bristol: HEFCE. <https://dera.ioe.ac.uk/20949/>

59 Kelley, M.J.M., & Salisbury-Glennon, J.D. (2016). The Role of Self-regulation in Doctoral Students' Status of All But Dissertation (ABD). *Innovative Higher Education*, 41(1): 87–100. <https://doi.org/10.1007/s10755-015-9336-5>

We found limited evidence of links between PhD duration, completion and quality in our rapid evidence assessment. To the best of our knowledge, the impact of changes to length in funding have not been evaluated. We recommend a pre/post-intervention comparison is undertaken on any changes to the duration of PhD funding.

In addition, stakeholders welcome moves toward greater variation and flexibility in the structure of doctoral training. Typical course structures currently supported by ESRC include +3, 1+3, 2+2, +4 and 2+3 programmes. There was also support among senior stakeholders for models where research training was delivered flexibly over the course of the doctoral programme, rather than all up front in a separate Master's-level course. ESRC should continue to encourage and support DTPs and ROs to offer a range of structures and pathways aligned to the varying needs of individual students and different disciplines. There appears to be little support for programmes shorter than 3 years. Stakeholders and supervisors believe there would be little demand and some expressed concerns that this could affect quality – they argued that the PhD should involve a substantial time commitment from students.

As the ESRC does not fund the majority of social science PhDs, it could be problematic if the ESRC model of funding and programme structure is substantially different to other PhDs. HEIs state it is not economically viable for them to develop resources and infrastructure just for ESRC students. Some senior stakeholders also expressed concern at the prospect of some students receiving more generous financial support packages than others. Some ROs would want to offer all their PhD students a comparable package of financial support, but this could be challenging. If it becomes the norm to expect PhDs to take at least four years full-time, this may have a detrimental impact on the number of students who self-fund.

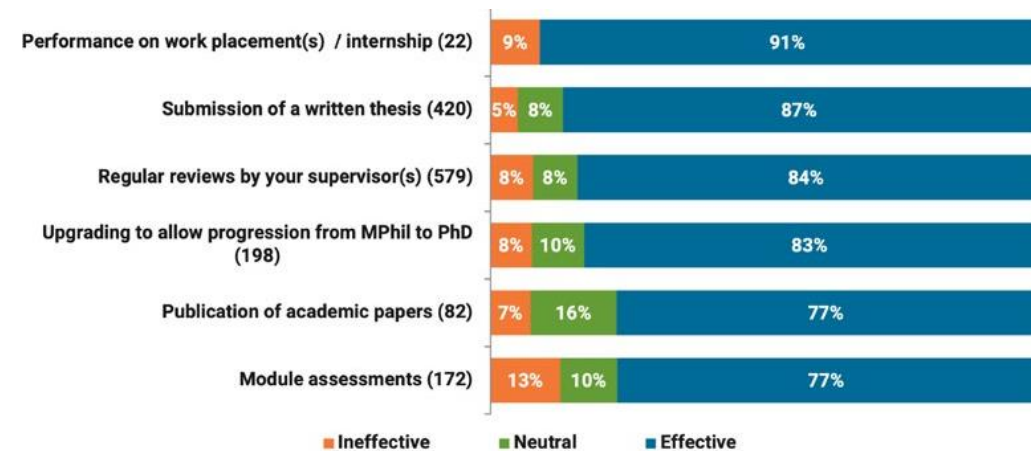
Assessment and form of thesis

Many of the issues we have identified with the skills and employability aspects of the UK social science PhD appear to be linked to assessment. As at all other educational levels, assessment is a signal to students and teachers of what is valued. Doctoral students and supervisors focus on the thesis because that is all that directly matters in the award of the qualification. Incentives to undertake additional training, placements, overseas visits and the like are indirect. Incorporating them more directly into doctoral assessment – meaning some must be achieved to secure the award – would provide a strong incentive.

There is some emerging diversification in the form of theses presented across disciplines. Some institutions, especially within psychology and economics, allow or even encourage an article-based thesis that comprises discrete chapters bookended with an introduction and conclusion. The Dutch PhD institutionalises this form with an expectation that 2-4 articles or chapters are published in a peer-reviewed outlet. Given the emphasis in academic careers in particular on developing a publication record, this seems to be a more fitting assessment than the long-form monograph thesis. The mental health consequences of publication requirements are not clear. It may be that this puts additional pressure on doctoral students and is perceived as an unnecessary burden for those not seeking research careers. On the other hand, it may help to avoid the burden of producing articles and a thesis. And there remains the challenge of securing publications, particularly in high-quality journals, within the limited timeframe of PhD study.

Whatever the form of the final output, doctoral assessment remains focused on the document produced and its associated oral exam (the viva voce). Most students responding to our survey agree that submission of a thesis is an effective method of assessment. But there was also strong support for other methods, including regular reviews by the supervisor, module assessments and performance on work placements (Figure 16).

Figure 16: Student perceptions about methods of assessing the PhD, (bases in brackets).



The viva process is generally held in positive esteem. Students and graduates argue that being able to present and talk about research is an important skill for academic and non-academic careers and the viva tests this. However, they acknowledge it does not cover all aspects of the doctoral experience and is not an effective way to assess the breadth of skills and capabilities that students develop. Some employers and graduates see the viva as outdated and predominantly tailored for academic career progression.

In terms of the actual assessment of the thesis, the viva is probably suitable because they are worthy of getting a doctorate, but whether that's the best of preparing them for a labour role afterwards, like a PhD by publication route is debatable.

Lecturer, Sociology

Students and graduates were also positive about the potential for more frequent and alternative forms of assessment, such as assessed modules throughout the PhD or annual assessments of progress by supervisors. In particular, there seems to be an appetite among students for more meaningful feedback throughout their PhD. They were often critical of assessment and feedback that currently seems to be at the discretion of individual supervisors.

In my department in geography, we have a first-year report. That's it. We won't get anything else until the end. That suits some people. I would quite like a check in. It's more to get feedback on your work.

Student, Geography

Having to pass taught elements as part of the PhD is a feature of some professional doctorates. The UK professional doctorate is less standardised than the traditional PhD in the assessment and learning outcomes. A shorter thesis, more individualised supervision and input from professional bodies may be considered strengths of the assessment of professional doctorates.⁶⁰

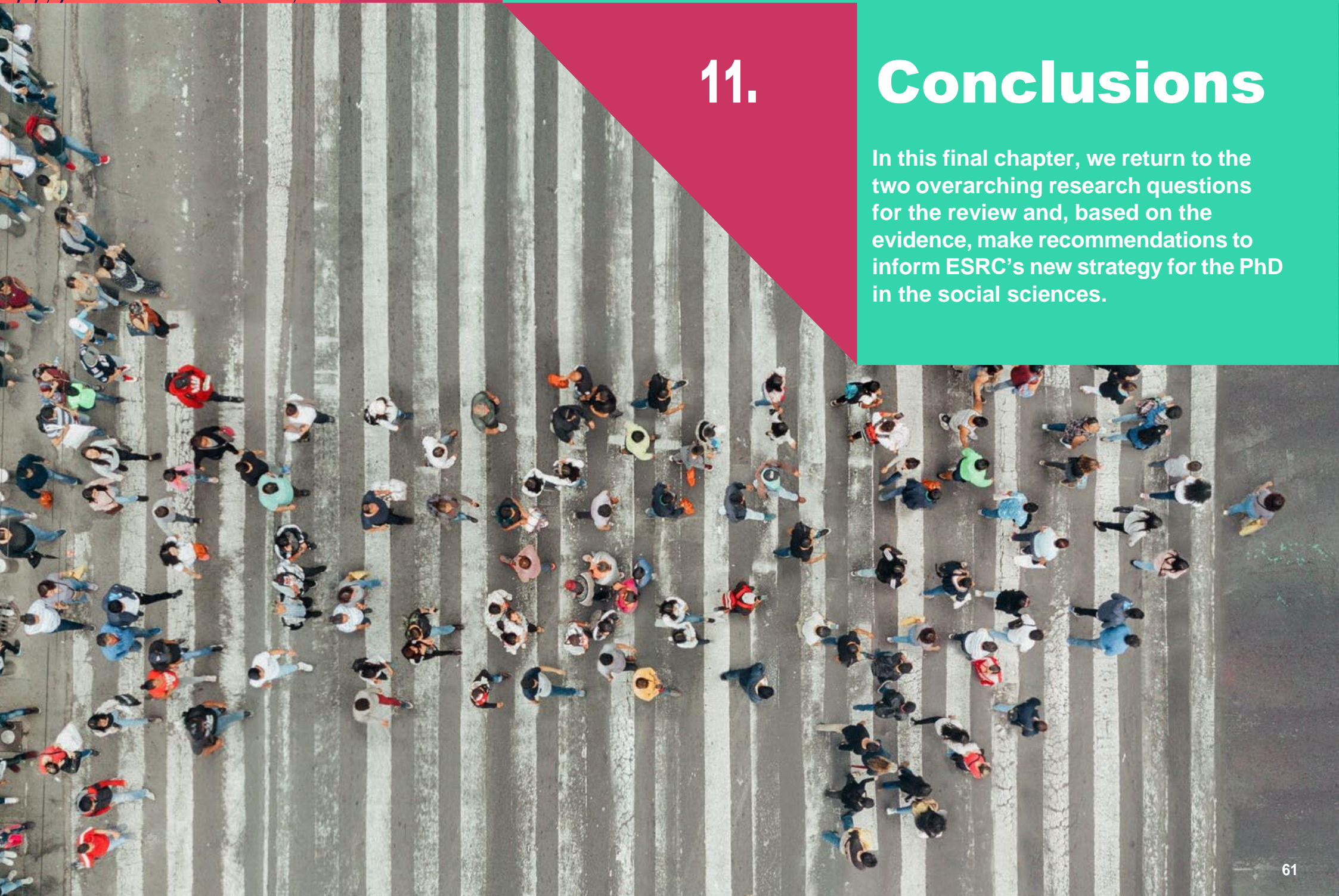
Importantly, we should recognise that the form and assessment of doctorates is set by their awarding bodies – the individual universities – and would therefore be very difficult to influence. There would likely be strong resistance to such reform from some quarters. As explored elsewhere, while stakeholders were positive about incorporating taught elements throughout the PhD, there was less support for making these elements credit-bearing, as this would create administrative and assessment burdens on students and HEIs alike.

⁶⁰ Higher Education, 43 (5), 814-825.

11.

Conclusions

In this final chapter, we return to the two overarching research questions for the review and, based on the evidence, make recommendations to inform ESRC's new strategy for the PhD in the social sciences.



This in-depth review of social sciences doctoral training within the UK and some of its closest competitors suggests that there is much to be commended about the UK model. The quality of doctoral training delivered by UK ROs with global reputations for research is internationally recognised. However, in the context of a rapidly changing landscape, the review has also identified several gaps and issues with the current offer that ESRC's strategy and a revised model should seek to remedy.

Evidence on international practice provides insights into potential alternative approaches; however, given structural differences between education systems and the divergence of approaches to the social science PhD within other countries, it is difficult to identify an 'ideal type' that would be transferable to the UK context and enhance provision. Furthermore, it is clear from the evidence that the UK's competitors are grappling with many of the same issues (particularly in relation to student wellbeing, EDI, completion times/rates, interdisciplinarity and graduate employability) and experiencing many of the same challenges. Principal among these is the diversity of students' needs and the needs of the wide range of employers who may recruit social sciences doctoral graduates now and in the future. As such, flexibility and diversity must be at the heart of any solution - a 'one-size-fits-all' approach is unlikely to be effective. Whatever the final approach, it will be equally important to ensure the key strengths of the current offer are preserved so that the reputation and standing of the UK PhD is maintained.

What skills do globally competitive graduates need?

In the context of a rapidly evolving research landscape, competition for graduate jobs in the UK and internationally is growing as is demand for challenge-led, interdisciplinary research involving the use of new methods, emerging technologies and 'big data'. To compete with social science graduates globally, UK graduates need to be well-rounded researchers with excellent research skills, including a solid foundation in both quantitative and qualitative methods and advanced conceptual and theoretical knowledge. There is consensus that current doctoral training successfully equips students with basic competences in quantitative, qualitative and mixed-methods research, data literacy and the use of appropriate software, and ethical practice. Despite these strengths, it is important that UK skills training keeps pace with changes in research methods as well as technology and evolves in response to demand for advanced quantitative and digital skills. This will ensure UK graduates stand out and can successfully compete for jobs with and beyond academia.

There is widespread agreement that the infrastructure for core research skills training is already available at HEIs and via DTPs. However, there is a view from some that international models that deliver core research training over longer timescales (e.g. USA and the Netherlands) enable students to develop more specialist skills than in the UK. It is important that a future model continues to support students to develop advanced methodological skills and knowledge during the doctorate. However, it is crucial that the disciplinary depth important for international competitiveness is not lost as a result of any changes made to core research skills training.

Collaborative working enables students to address key challenges and the ability to adopt multi-disciplinary approaches to problem-solving is often attractive to employers. Interdisciplinary and collaborative working is a strong feature of international models, although there is a push for more of this type of working, with no clear examples yet of best practice or innovation. Opportunities for doctoral students to undertake interdisciplinary and collaborative work already exist but are not universally available or consistently taken up. Increasing the number and range of opportunities available to students would strengthen skills training and could help to increase the international standing of the UK social sciences doctorate.

Research skills and subject knowledge alone are not enough to be globally competitive and secure employment in either the academic or non-academic sectors; graduates also need strong transferable skills such as project and budget management, business/commercial acumen and communication skills, as well as the ability to apply insights from their research to identified challenges. This is a clear gap in current skills training in the UK and internationally and should be addressed to ensure UK provision remains at the leading edge. This could be achieved by embedding experience of research in practice into core skills training.

While additional opportunities for training and other experiences may be welcome, the development of the content of doctoral training in recent years now means there is already a lot for students to cover. There is broad support for extending the PhD to four years to enable students to take advantage of wider training opportunities, but little appetite for substantially longer PhD programmes like some international models.

Recommendations for ensuring PhD graduates have the skills they need

All ESRC-funded students should undertake some form of activity to build understanding of applying research in practice. DTPs should develop a menu of high-quality opportunities for students, ranging from masterclasses and summer schools, through collaborative projects to internships and placements. These activities should ensure students understand how their knowledge and skills can be applied in a range of real-world settings and develop wider core skills which are essential for academic and non-academic careers alike. ESRC should consider how to incentivise employers from a range of sectors to contribute to the development and/or delivery of opportunities.

ESRC and DTPs should increase and diversify the opportunities for social science doctoral students to work on interdisciplinary, challenge-led projects. This could be achieved through research in practice activities outlined above, interdisciplinary supervisory teams (drawing on the expertise of employers as well as academics), increased student engagement in collaborative projects and knowledge exchange and/or through professional doctorates. Other levers, such as raising the DTP target for the proportion of students that take part in collaborative activities, should also be considered. A key role for the supervisory team will be to support students to reconcile epistemological and ontological differences and overcome the challenges of communicating between disciplines and non-technical audiences.

The ESRC should review its research methods training requirements and encourage ROs to co-develop methodological provision with input from industry and relevant training providers (e.g. NCRM) to ensure it keeps pace with emerging methods and technologies and that students develop the requisite core and advanced skills particularly quantitative and digital for academic and non-academic careers.

The ESRC should extend the funding for the PhD to 4 years. Extending the PhD funding would allow time for students to complete their skills training, including research in practice, and help to reduce the impact of additional requirements on the time available for the thesis/final output. There is broad support for extending funding to four years but little appetite for substantially longer programmes, like the USA model. The implication of extending the PhD funding period is fewer funded studentships. There is also a risk of an adverse impact on equality and diversity and completion rates. The effects of any changes to the funding period should be evaluated.

What are the optimum ways to develop these skills?

There is broad consensus that the optimum way to deliver skills training is through personalised and flexible provision. The current model offers a range of pathways (+3, 1+3, 1+4, etc) and a combination of core and optional training provision. While there is a desire for greater flexibility - and this is an important part in helping to ensure a diverse student population - a truly bespoke, personalised experience will come at a cost.

There are some excellent opportunities for students to undertake advanced skills training and gain valuable experience of collaboration, working in other cultures and putting their research skills and findings into practice. However, not all students recognise the value of these opportunities or are able to take them up because of time and resource constraints and competition for places. Students need more help to understand which activities they should pursue, based on their research, career aspirations and previous experience, and to identify opportunities that would work for them. This requires supervisors and other support staff to be aware of the opportunities available and to recognise their value to students and their future employability.

Students have access to world-class research environments and supervisors with excellent disciplinary expertise. Many students and graduates are very satisfied with existing supervision arrangements, but when problems do occur, this can have a damaging effect on progression and wellbeing. Supervisory teams are the linchpin in doctoral training. They need to be supported and trained to recognise issues and signpost students to specialist training or support where necessary.

The need for specialist support and careers guidance for doctoral students is increasingly recognised. There are some pockets of good practice, though more could be done to ensure all doctoral students have access to tailored support from people who understand the particular pressures and challenges of doctoral study and the doctoral graduate labour market. Centralised careers and pastoral support services are typically geared up for undergraduate students. Implementing tailored support for doctoral students would therefore involve investment in staff resources at DTP and/or institutional level in many instances.

Recommendations on how best to develop these skills and ensure a diverse and health student population

ESRC should regularly review current DTP widening participation strategies and implement measures to ensure they are appropriately aligned with council objectives.

This should include holding DTP to account for the achievement of the targets set for widening access, participation and success at the doctoral level. ESRC should review current monitoring and evaluation processes to increase the robustness of the evidence base about what interventions work for postgraduate students. Links should be made to the wider evidence base, including at the undergraduate and master's level (e.g. TASO).

ESRC should encourage DTPs to provide ring-fenced funding for students and postdoctoral researchers from under-represented backgrounds. This funding will support positive action to reduce underrepresentation among students at doctoral level in ESRC subjects and, in the longer term, help to increase the diversity of staff, including in postdoctoral positions. This should be delivered in combination with measures to broaden entry routes into doctoral level study, e.g., entry at master's level without worked up research proposal and/or enhanced systems for recognising and accrediting prior learning and/or work experience (APEL) to help overcome other barriers to doctoral study that under-represented groups can experience.

Building on current practice, ESRC should work with DTPs to develop minimum standards for the TNA to ensure it is implemented more consistently across the sector. The TNA should inform the development of a tailored training programme comprising compulsory and optional elements.

DTPs should appoint professional development leads. The role of these specialists would be to: support the supervisor with the TNA, signposting students to training/ activities as appropriate; raise awareness of the range of career pathways (academic and non-academic) available to doctoral graduates and work with careers specialists to ensure students develop the skills and experience necessary to achieve their career goals; and signpost to pastoral support services to help ensure student wellbeing.

The ESRC should encourage DTPs / individual ROs to work with organisations (such as the Association of Graduate Careers Advisory Services (AGCAS) and the Higher Education Careers Service Unit (HECSU)) to ensure specialist CIAG is available and accessible to all doctoral students. It is important for the CIAG provision to be tailored to the needs of doctoral students and underpinned by accurate destination data and labour market information on the range of doctoral career pathways. The requirement to ensure access to specialist CIAG as a condition of ESRC funding could be considered to help drive change.

The ESRC should consider which elements, beyond the final thesis could be assessed (e.g. as a condition of progression) or formally accredited to ensure students (and supervisors) recognise the value of training and activities, beyond discipline-specific research methods, and are motivated to engage with them.

The ESRC should encourage alternative formats to the traditional long-form monograph in the context of a more flexible model of doctoral training. This will help to support students to disseminate their findings to more diverse audiences and demonstrate how insights from their research can be applied to address societal challenges and other problems.

ESRC-funded ROs should enhance student wellness through the development of programmes that foster an inclusive and supportive culture, recognising how the postgraduate experience can impact on mental health and wellbeing. DTPs should undertake a self-assessment as part of the commissioning process to demonstrate their commitment to student wellness and the range of support on offer. This could be guided by a tool such as the one developed for the Stepchange Mentally Healthy Universities Framework. This will ensure DTPs adopt a strategic approach to student wellbeing. ESRC should monitor progress by DTPs and consider evaluating new initiatives.

ESRC in collaboration with UKRI should strengthen monitoring of the postgraduate research student population and the use of data to inform strategic planning and delivery. More comprehensive and timely data should be used to inform the development of access and participation and EDI strategies for doctoral students as well as tailored financial and pastoral support, and CIAG. This should include improving data linkage across levels in statutory (HESA) datasets and standardising data collection of EDI characteristics by DTPs/CDTs to provide a lifecycle picture, from first-degree through to doctoral graduation and destination.

The ESRC, working through sector bodies (such as UKCGE) should ensure a comprehensive programme of initial training and CPD is developed so supervisors are effectively supported to undertake their role. The training and ongoing CPD should support supervisors to address the range of challenges they face and be tailored according to their existing skills and experience. Key themes that should be addressed include: EDI; coaching and the provision of constructive feedback; doctoral career destinations and the career pathways beyond academia; and how to recognise and signpost students with pastoral support needs. ESRC should consider how to mandate this training and CPD through formal assessment or accreditation.

Next steps

While some of these recommendations require relatively small refinements to existing practice and provision, others will require more radical change and, in some instances, a considerable investment of time and resources.

The introduction of 'research-in-practice', improvements to CIAG and the professional development of research students, and the introduction of training for supervisors will require the most substantial change. In developing its response to these recommendations, the ESRC will need to consider the trade-offs it is willing to make to secure the resources required to implement a new model.

It will also need to take account of the implications for existing systems and infrastructure in place within ROs to ensure its feasibility. To achieve its vision in the long-term, the ESRC will need to secure institutional buy-in by winning hearts and minds, particularly of stakeholders who hold traditional views of the purpose of the PhD.

It will be important to ensure robust evaluation is embedded into the strategy to ensure evidence of the effectiveness and impact of the new approach (or elements of it) can inform its ongoing development. In this way, the ESRC will ensure UK social sciences doctoral training remains effective and at the cutting edge of research and innovation, and its graduates continue to compete on the world stage.



Appendix 1: Steering Group

Members

Professor Kathy Rastle, Royal Holloway, University of London, ESRC Strategic Advisory Network (Chair)

Samantha Aspinall, University of Leeds

Professor Ruth Blakeley, University of Sheffield, ESRC Strategic Advisory Network

Alexy Buck, Ministry of Justice, ESRC Strategic Advisory Network

Dr Darren Van Laar, University of Portsmouth

Professor Catherine Lyall, University of Edinburgh

Professor Lasana T. Harris, University College London, ESRC Council

Steve Legg, IBM

Professor John Goodwin, University of Leicester

Ross Goldstone, Cardiff University, Postgraduate Student Representative

Fiona Gogescu, London School of Economics and Political Science, Postgraduate Student Representative

Professor Peter Smith, University of York

Michael Vallely, University of Glasgow, Postgraduate Student Representative

Attendees

Frances Burstow, Deputy Director Skills and Methods ESRC

Tracy Davies, Head of Early Career Support ESRC

Dr Lucy Thorne, Head of Leadership and Skills ESRC

Appendix 2: Detailed method

An in-depth, mixed-methods approach was taken to address the two research questions. This comprised six inter-related stages delivered over an 18-month period. Details of each stage are provided below.

Survey of students and graduates

Sampling approach

We surveyed current social science doctoral students and recent graduates (those who completed their doctorate in last five years (since 2015/16)) from a sample of ten HEIs. The sampling approach ensured geographical representation, varying sizes of institution/doctoral provision, coverage of different social science disciplines, a range types of institution and members of ESRC DTPs. Table 1 below summarises the key characteristics of the sampled HEIs.

Table 1: Characteristics of sampled HEIs

Name	Region	Type	DTP	No. of doctoral students
More than 400 social science doctoral graduates				
UCL	London	Golden Triangle	Yes	940
University of Manchester	North West	Russell Group	Yes	680
University of Cambridge	East of England	Golden Triangle	Yes	620
Between 200 and 399 social science doctoral graduates				
University of Sheffield	Yorkshire and the Humber	Russell Group	Yes	385
Cardiff University	Wales	Russell Group	Yes	335
University of Glasgow	Scotland	Russell Group	Yes	290
University of Newcastle	North East	Russell Group	Yes	280
University of Bath	South West	Pre-92	Yes	245
Between 100 and 199 social science doctoral graduates				
Canterbury Christ Church University	South East	Post-92	No	150
Coventry University	West Midlands	Post-92	No	125

Survey design

The survey design was informed by questions from pre-existing surveys, including the Postgraduate Research Experience Survey (PRES)⁶¹ and the Nature postdoctoral-research survey.⁶² The survey was designed to take no more than 15 minutes to complete and aimed to explore student and graduate perceptions of the following:

- Motivations for doing a doctoral programme and funding
- Skills training, assessment and supervision
- Future career plans (current students only) or current employment (graduates only) and role and influence of IAG
- Impact of doctorate on wellbeing
- Overall satisfaction with studying for a doctorate and value of qualification to employers (graduates only)
- Personal information and follow-up

Survey questions were designed to ensure perceptions could be captured from:

- Home/EU and international students
- ESRC funded and non-ESRC funded
- Full-time and part-time students

Screeners questions were used to ensure participants were eligible to participate and routing was applied according to whether the respondent was a current student or recent graduate. A copy of the survey can be found [here](#).

Dissemination

Following ethics approval from individual participating HEIs, the survey was pilot tested with a small sample of current students and recent graduates to check the survey length and comprehension. The survey was disseminated between June and July 2020 through a key point of contact at each HEI.

61 <https://www.advance-he.ac.uk/reports-publications-and-resources/postgraduate-research-experience-survey-pres>

62 <https://figshare.com/s/a0a0f1c90843c12e6373>

Respondent profile

1,285 students/graduates responded to the survey (879 completes and 406 partials). After removing duplicates, test responses, and insufficiently complete partials, the final sample was 991 (876 completes, 115 partials). HESA data was used to calculate the number of students registered during 2017/18 to show the indicative response rate for the current student population at of the HEIs (See Table 2 below).

Table 2: Response rate to the current student and graduate survey

HEI	Student survey response (n)	No. of students registered	Response rate (%)	Graduate survey response (n)
Canterbury Christ Church University	53	150	35%	15
Cardiff University	25	335	7%	5
Coventry University	18	125	14%	5
Newcastle University	57	280	20%	8
UCL	117	940	12%	84
University of Bath	63	245	26%	70
University of Cambridge	93	620	15%	20
University of Glasgow	73	290	25%	26
University of Manchester	93	680	14%	30
University of Sheffield	106	385	28%	30
Total	698	4050	17%	293

Student and graduate demographic characteristics show that:

- Just under a third of student and graduate respondents were from minority ethnic groups (this is comparable to the proportion in the aggregate 2012/13-2017/18 HESA dataset).
- There were more female respondents for both the current and graduate survey. (A comparison with the HESA data aggregated from 2012/13-2017/18 shows female survey respondents are over-represented.)
- The most common age category for both students and graduates was 26-40. (There is a higher proportion of older survey respondents compared to the HESA data.)
- There was good representation from EU and international students and graduates.

A detailed breakdown of the survey sample demographics is shown in Table 3.

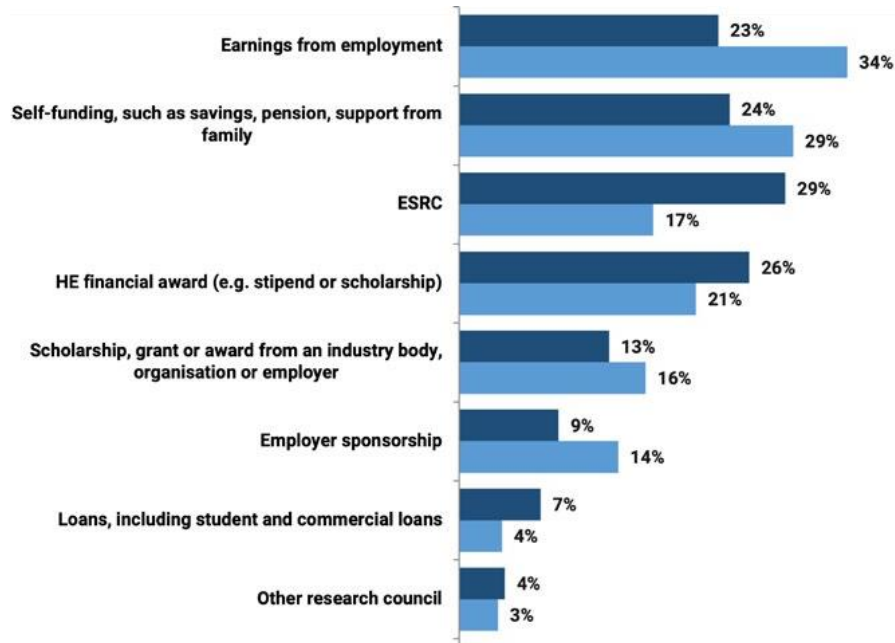
Table 3: Survey sample demographic characteristics

Demographic	Students	Graduates
Age		
25 and under	12%	17%
26-40	61%	55%
Over 40	27%	28%
Gender		
Male	30%	35%
Female	70%	65%
Ethnicity		
White	69%	69%
BAME	31%	32%
Student status		
UK	56%	47%
International	27%	36%
EU	17%	17%

Representation from all social science disciplines was achieved in the survey, with the highest representation from education. This was followed by business and management studies, other social science discipline and psychology (see Table 4). Just under a third (29%) of student respondents are funded by the ESRC and 17 percent of graduate respondents received ESRC funding. This is similar to the proportions of current students and graduates that were funded by their HEI. See Figure 18 below for a more detailed breakdown of the survey respondent funding profile.

Table 4: Representation of social science discipline in student/graduate survey

Social Science discipline	Students	Graduates
Education	154 (22.1%)	85 (29%)
Management and business studies	76 (10.9%)	33 (22.2%)
Other social science discipline	68 (9.7%)	30 (20%)
Psychology	63 (9%)	27 (9.2%)
Multi-disciplinary programme including a social science discipline	52 (7.4%)	19 (6.5%)
Economics	42 (6%)	15 (5.1%)
Sociology	44 (6.3%)	13 (4.4%)
Political science and international relations	34 (4.9%)	16 (5.5%)
Socio-legal studies (including law and criminology)	30 (4.3%)	15 (5.1%)
Human geography	36 (5.2%)	9 (3.1%)
Linguistics	18 (2.6%)	9 (3.1%)
Science and technology studies	20 (2.9%)	4 (1.4%)
Social anthropology	15 (2.1%)	6 (2%)
Area and development studies	14 (2%)	3 (1%)
Environmental planning	10 (1.4%)	3 (1%)
Social policy	9 (1.3%)	2 (0.7%)
Statistics, methods and computing	4 (0.6%)	3 (1%)
Economic and social history	6 (0.9%)	0 (0%)
Social work	3 (0.4%)	1 (0.3%)
Total	698	293

Figure 17: Source of doctorate funding for survey respondents

Student focus groups and graduate interviews

Three focus groups, involving 15 students, were conducted as part of the student consultation. These took place in August and September 2020. The sessions provided the opportunity to explore in more detail key themes that emerged from the survey. This included developing a fuller understanding of:

- Current doctoral skills training and identification of gaps in the current provision
- Learning and examples of best practice to inform future skills training provision
- The effectiveness of different doctoral teaching methods and modes of assessment
- Perceptions of the impact of completion time and rates on student satisfaction and wellbeing
- The extent to which social sciences doctoral programmes are inclusive and diverse

A copy of the student focus group topic guide can be found [here](#).

The ten HEIs that participated in the survey were approached to participate in the student focus groups. Students represented came from across social science disciplines, were in different years of study (from first to fifth year stage of study) and included those wanting to pursue an academic career, those who wanted non-academic role and those who were unsure about the type of career they wanted to pursue.

In addition, six individual interviews and eight paired interviews were carried out. Graduates interviewed had studied at University of Cambridge, University of Bath, University of Glasgow, UCL, University of Sheffield, University of Manchester and Canterbury Christ Church. Interview questions were designed to capture insights into:

- The relevance of doctoral skills training provision to employment and the identification of skills/capability gaps
- Ways to address skills/capability gaps through alternative training provision/models
- Supervision and doctoral assessment
- Student mental health and wellbeing

A copy of the graduate interview guide can be found [here](#).

Supervisor focus groups

Six focus groups were hosted between September and November 2020 as part of the initial supervisor consultation. A total of 33 supervisors from the University of Manchester, University of Sheffield, UCL, Coventry University, University of Bath and University of Glasgow participated, with representation from a range of different social science disciplines. The sessions were designed to explore the following themes:

- Current doctoral skills training and identification of gaps in provision
- Learning and examples of best practice to inform future training provision
- The effectiveness of different doctoral teaching methods and modes of assessment
- Perceptions of the impact of completion time and rates on student satisfaction and wellbeing
- The extent to which social sciences doctoral programmes are inclusive and diverse

A copy of the supervisor focus group guide can be found [here](#).

Employer consultation

The aim of the employer consultation was to develop a fuller understanding of the following:

- Existing skills base and skills/capability gaps within businesses and organisations
- Skills that doctoral graduates (and specifically social science graduates) bring and how these are beneficial to employers
- Future skills needs to ensure businesses and organisations can remain competitive within the UK/global economy
- Learning and examples of best practice to shape the future skills training model for social science doctoral students

The employer consultation involved a focus group with four employers from a range of sectors, organised with the support of the Scottish Knowledge Transfer Partnership (KTP), and 27 individual interviews. In recruiting employers, we sought to ensure good geographical representation, a range of organisation sizes and different sectors - see Table 5. Most of the employers consulted had experience of social scientists in some capacity, but the majority did not seek to directly recruit social scientists. A copy of the employer depth guide can be found [here](#).

Table 5: Employer consultation sample characteristics

Organisation type	Number of participants
Private sector business	17
Public sector body/department	9
Third sector organisation	5
Sector	
Government department / agency	8
Research consultancy / think tank	5
Financial/legal services	3
Technology	3
Construction	2
Education	2
Other (including communications, agriculture, food/drink)	8

International stakeholders

To complement the findings from the rapid evidence assessment, 14 international stakeholders from HE institutions in Australia (2), Canada (4), Germany (3), Sweden (1), South Africa (1), the USA (2) and The Netherlands (1) were interviewed.

The interviews explored stakeholders' perceptions of the strengths and limitations of doctoral training in their home nations and how provision could be optimised to ensure social sciences doctoral candidates are better equipped with the skills needed for academic and non-academic careers. The discussions encompassed a wide range of issues, including teaching and assessment methods, and the potential impact of different approaches on outcomes, such as completion times, student satisfaction, wellbeing, and equality, diversity and inclusion. Stakeholders' perceptions of doctoral programmes in the UK and how they compare in terms of quality and rigour with approaches in other countries were also discussed.

In addition to the international stakeholders, a further 4 interviews were conducted with HEI stakeholders in Northern Ireland and England who were unable to attend the workshops. A copy of the international stakeholder interview guide can be found [here](#).

Open consultation

To ensure as many stakeholders as possible had the opportunity to contribute their views to the review, a consultation exercise was carried out between 15th July and 16th September 2020. The consultation sought views on the strengths and limitations of current doctoral programmes and aimed to capture examples of good practice from within and outside the social sciences. Responses could be provided on behalf of individuals as well as organisation-wide responses. The consultation comprised six questions and respondents could answer as many or few as they chose. A word limit on responses was imposed to encourage respondents to provide succinct, relevant information and avoid repetition. The consultation document and guidance were disseminated by email to the ESRC's networks, via social media and hosted on the ESRC's website.

164 responses were received to the consultation. Details of respondent type are provided in Table 6.

A copy of the consultation questions and response guidance can be found [here](#) and [here](#).

Table 6: Open consultation response profile Secondary data analysis

Respondent type	Number of responses
Individuals	76
HEI or departments/teams within an HEI, including DTPs/CDT	60
Learned society/professional or membership body	30
Other	5

Analysis of the social science doctoral student population, its demographics and the outcomes of doctoral study are based on data obtained from the Higher Education Statistics Agency (HESA). HESA is the statutory body responsible for the collection, compilation and dissemination of statistical data about UK higher education institutions, students and staff. Higher education institutions provide HESA with data in standardised formats on a regular basis (typically annually). Data submissions are subject to considerable quality and consistency checks. Data is available for purchase from HESA for analysis. Data presented in this report are from two principal sources: the HESA Student Record; and the Destination of Leavers from Higher Education Survey (DLHE).

Doctoral students and continuation dataset

This dataset contains all first-year students who were aiming for a doctorate qualification in the academic years 2011/12 and 2012/13. A set of demographic and academic variables is included for each student, identifying their subject discipline, sex, domicile (UK or international), age, ethnicity, mode of study, parental education level, institution at which they were enrolled and the major source of funding for their tuition fees. Students in disciplines funded by the ESRC were flagged. We defined ESRC subjects as including the following HESA categories:

- (C8) Psychology
- (K4) Planning (urban, rural & regional)
- (L1) Economics
- (L2) Politics
- (L3) Sociology
- (L4) Social policy
- (L5) Social work

- (L6) Anthropology
- (L7) Human & social geography
- (L8) Development studies
- (M1) Law by area
- (M2) Law by topic
- (N1) Business studies
- (N2) Management studies
- (Q1) Linguistics
- (V3) History by topic
- (X3) Academic studies in education

In the field for 'major source of tuition fees' ('MSTUFEE'), HESA records sponsorship by individual research councils. However, independent reconciliation of ESRC records and HESA records undertaken by UKRI analysts indicates that there are some disparities between the two. The data provided to us by HESA indicates only whether a student's major source of tuition fees is one of the research councils, not the individual councils. We therefore report on students in ESRC disciplines who are research council funded. This may lead to some false positives (students in ESRC disciplines who are funded by other councils) and false negatives (students in disciplines not in the above list who are ESRC-funded). We have no grounds to believe that this will materially affect any conclusions as it is likely to affect only a small number of students.

Within the dataset, each of the included students is tracked forward into subsequent years' student records. In this way, it is possible to identify students' point of qualification, other reason for leaving the course (e.g. dropout, failure) or when last found in the data. Students are tracked through to the academic year 2018/19.

Doctoral outcomes dataset

This dataset combines records from the HESA Student Records and DLHE for doctoral graduates in the academic years 2012/13 – 2016/17. The latter is a survey of all higher education qualifiers – those who have successfully obtained a qualification in the previous academic year – taken approximately six months after the completion of their programme. Since it is a survey, rather than a census, coverage is not complete. However, for UK-domiciled students, response rates of over 80% are regularly obtained. Data from DLHE respondents is linked back to the Student Record data. In this dataset, all the fields from the doctoral continuation dataset are included. In addition, the DLHE variables include the main activity a graduate was engaged in (e.g. employment, further study, travel) and then further ancillary variables. Where they were in employment, the Standard Industrial Classification (SIC) and Standard Occupational Classification (SOC) of their job is recorded, together with their salary, the location of their employment (county or country), whether they considered this a postdoctoral contract, and whether they considered they needed their qualification for their job. Where there are three or more graduates employed by an individual employer the name of the employer is provided.

For a small subset of 2012/13 doctoral graduates (27.8%), variables from the Longitudinal DLHE are also included. This dataset follows up a proportion of DLHE respondents approximately three-and-a-half years after qualification. SIC and SOC are included, as are location of employment. Additionally, respondents were asked whether they had originally wanted an academic job.

Limitations with available doctoral data

To the best of our knowledge, the data we have utilised in this report are the best currently available about UK doctoral graduates and their outcomes. While population coverage is very good, in comparison to the depth of data available about doctoral graduates in some comparator countries, notably the USA and Germany, it is difficult to be confident about longer-term trajectories for doctoral graduates. This is particularly the case when tracing careers through the doctorate and into research. Furthermore, information about the background of students, especially EDI characteristics, are either not captured at all, or are considerably less detailed and robust than those recorded for first-degree students. We have made some recommendations in this report to help address these issues. Interested readers are referred to previous publications for further detail.⁶³

⁶³ See Hancock, S., Wakeling, P. and Chubb, J. (2019) 21st Century PhDs: Why we need better methods of tracking doctoral access, experiences and outcomes. London: Research on Research Institute; Hancock, S. (2021) What is known about doctoral employment? Reflections from a UK study and directions for future research. *Journal of Higher Education Policy and Management*, doi.org/10.1080/1360080X.2020.1870027; Wakeling, P. (2016) *Measuring Doctoral Student Diversity: Socio-economic Background*. Swindon: Research Councils UK.

HESA reporting conventions

The report follows HESA's reporting conventions which are designed to avoid disclosure. Full details are available at: <https://www.hesa.ac.uk/about/regulation/data-protection/rounding-and-suppression-anonymise-statistics>. Essentially, numbers are rounded to the nearest 5; numbers lower than 2.5 are reported as 0; and percentages are not reported where the total denominator is lower than 22.5.

Workshops

Stakeholder workshops were hosted between March and May 2021. Originally planned for earlier in the review process, they were delayed to increase the possibility of running them on a face-to-face basis. Unfortunately, COVID-19 restrictions remained in place, and all the workshops were undertaken online.

A total of five workshops were undertaken: one with students and graduates of social science doctoral programmes (recruited from survey respondents), one with supervisors (recruited with support from the ten sampled HEIs and UKCGE), one with employers (recruited through ESRC's network of contacts, steering group members and the research team) and two with senior stakeholders responsible for the strategic planning and management of postgraduate training within HEIs (recruited from the ten sampled HEIs and ESRC's wider networks, including DTPs).

The purpose of the workshops with students/graduates, supervisors and employers was to build on the emerging findings from the REA, primary research and open consultation and to begin testing out possible scenarios. Three core themes were explored at each workshop.

The student, graduate and supervisor workshops explored:

- content, timing and nature of skills training
- the value of placements
- the format and length of the PhD.

A total of 15 doctoral candidates and 7 recent graduates attended the student/graduate workshop from a range of disciplines including human geography, education, psychology, sociology, management and business studies and economics.

14 supervisors from 8 HEIs attended the supervisor workshop representing a range of disciplines including human geography, education, computational and social sciences, psychology, economics, law and criminology and sociology.

The **employer workshop** explored:

- the 'added value' of PhD graduates to employers' organisations over and above those with lower-level qualifications
- the range of skills that PhD graduates should be equipped with to succeed in employment and the ways in which employers could help to support their development
- the role of placements in equipping graduates with the skills and capabilities needed to be competitive and secure their chosen career.

A total of 7 employers from a range of public and private sector organisations that recruit social scientists attended the workshop.

Each theme was introduced by a member of the research team, and this provided a stimulus for discussions in small breakout groups facilitated by the research team.

Senior stakeholder workshops

The purpose of the workshops with senior stakeholders was to test out a potential vision for the PhD along with suggested changes to the structure, content and length of the PhD based on findings from the rest of the research and consultation. These workshops were chaired by a member of ESRC Council.

Ahead of the workshop a brief summary of the emerging findings from the research was shared with delegates, together with the proposed overarching vision and model for doctoral training. Delegates were also provided with information about current ESRC doctoral training provision. As with the other workshops, three broad themes were discussed in small breakout group facilitated by the research team,

- **Theme 1** considered the pros and cons of entry to doctoral training at the master's level without a specific research question, the role of training needs analysis and a core research methods programme for all students, irrespective of their chosen discipline within the social sciences.
- **Theme 2** focused on entry at doctoral level and considered options designed to introduce greater flexibility in the funding and duration of doctoral training and opportunities for students to apply their research in practice, including through an accredited module.
- **Theme 3** explored aspects of supervision, interdisciplinary and collaborative working along with careers and pastoral support to ensure student health and wellbeing.

A total of 53 stakeholders took part over the two workshops, including Pro-Vice Chancellors, DTP Directors, Directors of Graduate Schools and Deans of Social Science Faculties. The workshop powerpoint slides and facilitator guide can be found [here](#) and [here](#).

