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Has something got to give? Tensions and opportunities in achieving both a UK social science doctorate and ESRC-specified research and skills training

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PhD in Sociology

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Declaration

I declare that this thesis was composed by myself, that the work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or professional qualification.

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November 2019

Abstract

Social sciences research students in the UK have experienced major contextual changes to their doctoral studies over recent decades. Compared to minimal and piecemeal training received by doctoral students in the 1970s, doctoral students now undertake their studies in more highly structured and regulated institutional environments. Influencing such study environments, guidelines have been developed not only for doctoral training in qualitative and quantitative research methods but also career preparation within and beyond academia. The current structure of Doctoral Training Partnerships (DTPs), formerly Doctoral Training Centres (DTCs) and supported by universities and the Economic and Social Research Council (ESRC), is the outcome of a series of changes introduced over a long period intended to prepare researchers for modern employment conditions. The contemporary doctoral student is expected to graduate, not solely with a PhD thesis that contributes to knowledge in a particular field, but also with skills and competencies to enable a successful research career. Such abilities and aptitudes referenced in the guidelines include analytical, communication, leadership and teamwork skills and an ability to stimulate impact and change in the non-academic world. Curriculum extension for social science research students has some good arguments to support it, not least concerns to boost academic and non-academic employability among PhD graduates and to enhance the relevance of social science research. There are, however, some indications that students find the new training arrangements stretching to some degree. Moreover, it is suggested that universities also experience challenges in meeting the increased demands of providing specified training and the administration of doctorates. Against this backdrop of change to higher education, such as its massification and marketisation, moves to increased interdisciplinarity, paradigm shifts in employment, developments in the training infrastructure and the introduction of DTPs must be evaluated with reference to this wider picture.

Drawing on a social constructionist approach and with reference to the sociology of work, this study sets out to investigate the extent to which the new training arrangements have expanded opportunities open to social science research students and whether there are also tensions in the overall project. This thesis draws on original data collected through diaries, interviews and questionnaires with research students across a range of social science disciplines, interviews with key informants who have played roles in the introduction and assessment of the new training framework as it unfolded, and analysis of key documents. An argument is developed that extending

what was required of research students is placing them, their supervisors and potentially their institutions, under increasing and intense pressure. Within this climate where many feel ‘something has to give’, the goals that the new infrastructure seeks to secure may be challenging to achieve in their entirety. The question becomes, which goals will, or must, be sacrificed and what are the critical priorities? The thesis draws on the recognition that research students’ backgrounds, learning styles, motivations for doctoral study and ambitions are heterogeneous yet arguably ‘standardised’ doctoral and Masters degree training models assume student homogeneity. Within-group differences among postgraduate students underpin this thesis’ approach to evaluating the success of changes to the research student training landscape, and to identifying certain modifications offering potential to make its operation more effective. The thesis also develops an analysis of the perennial tension between the pursuit of ‘breadth’ and ‘depth’ of knowledge and skills in the curriculum. Concerns that training standardisation may result in loss of innovation and technical research depth, and the salience of individualisation versus standardisation, are foregrounded as fundamental issues and challenges.

Lay summary

This study investigated the social science PhD in the UK and how postgraduate social science students are taught to undertake research, their research methods training. I gathered views from current postgraduate (Masters and PhD) social science students, employed PhD graduates and some key academics / policymakers, 'key experts', on modifications to methods training provision, its effectiveness and whether improvements should be made. I used a combination of walking interviews (including pilot interviews) and video diaries to find out what 20 current postgraduate students thought of today's doctorate and its training and interviewed four 'key experts'. In addition, 79 current PhD students and 50 employed PhD graduates completed questionnaires. Although the study was focused around the University of Edinburgh, it extended to other Scottish and rest of UK universities as well as to specific organisations that employ researchers including Government and private research companies.

A PhD is the highest attainable qualification, typically taking 3 – 4 years of dedicated study and research. Up until the 1970s, the PhD was a passport to becoming an academic, the doctoral student a protégé learning the academic craft from their PhD supervisor. Focused around depth and specialisation, doctoral students assimilated exceptionally detailed understanding of one niche topic becoming experts. Broader societal and structural changes in work and the changing relationship between higher education and employment impacted upon the social science PhD and changed how people construct their views on what the PhD should ideally include and what its purpose should be. Doctoral student numbers increased as higher education became '*massified*' leading to proportionally fewer academic jobs and increased competition. Devoid of any guarantee to become an academic, doctorates were required to have wider usefulness and application in employment terms.

Initiated by a Thatcherite Government, social science PhDs' purpose and use have been scrutinised since the 1980s in publications such as Swinnerton-Dyer (1982) and the Winfield Report (1987) and found deficient. The Economic and Social Research Council (ESRC) instigated a set of changes to the PhD so that students learned the craft of research as well as specialisation in their topic and discipline. Modifications to the training infrastructure occurred with some learning, such as quantitative approaches that use questionnaires among other methods, becoming compulsory these being viewed essential in meeting today's employment market demands. As said by one of my expert interviewees, having both 'deep and nimble thinking' is the vision of

today's social science doctoral student, a highly skilled T-shaped person capable of turning their hand to any research question and able to use the correct tool for the task. This thesis conceptualises research methods knowledge as being akin to a toolbox, more tools in the box improves chances of the job being carried out well. Methods training is now arguably standardised with a '*one size fits all'* approach yet this assumes homogeneity among students, whom I argue are anything but homogeneous. Varying personal characteristics, capabilities, identities and preferences already exist among students upon commencing their postgraduate degrees. I argue the new training infrastructure does not sufficiently take that heterogeneity into account. Risks of standardised training indicated by my results are stifling innovation and the serendipitous possibility of trial and error leading to uncharted territories in discovery.

Results indicate widespread positive responses to the new training infrastructure and broad methods training in principle, including a recognition that the PhD and its training did need to change. This thesis, however, argues changes to the social science PhD and research training seeking breadth and depth in learning, yet expecting completion at the same rate, has led to *stretched students*. I developed the analogy of the *overloaded shopping basket*, whereby increasing numbers of items were added to social science PhD requirements with none removed. Results demonstrate that items are beginning to fall out of the shopping basket with some things being sacrificed, more advanced and specialised training among them, at the expense of achieving broader knowledge. I also propose that the quality of submitted PhD theses may suffer as students struggle to complete the required training, gain specialist knowledge and produce an original piece of research of sufficient quality in the timeframe. This thesis is entitled 'Has something got to give?' I argue that currently PhD students are giving, but that this cannot continue indefinitely without undue cost and severely negative effects. I suggest potential improvements to the current training infrastructure based on my research findings. For example, modifying training to better recognise student heterogeneity and needs, shifting the timing of particular training within degree programmes and not making any training compulsory within doctorates but instead taking individualised training decisions so training is tailored to PhD students' personal needs and gaps in knowledge.

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I would also like to thank my children, Lewis and Chris, for their forbearance in appreciating and understanding the competing pressures and demands that a PhD student, who is also a parent, can face whilst juggling academic, family and personal life responsibilities. Frequently, the question was heard in our household 'Have you not finished your PhD yet, Mum?' For young teenage boys, a period of 3 - 4 years must indeed seem a very long time. It is rather amazing to think that when I began this process, Lewis was aged 13 and Chris was 11 and have grown into fine young men aged 17 and 15 years respectively with deep voices, and both taller than their Mother. Now it would seem, the stage has ultimately been reached where Mum has hopefully completed her doctorate.

Lastly, but most certainly not least, I would like to express my sincere gratitude to my research participants, the postgraduate students, the senior academics and policymakers and the currently employed former PhD graduates. Their invaluable input has made this research possible and I thank them for giving up their time either in interviews, video diaries or to complete questionnaires and to share their views and experiences of the social science doctorate and research methods training with me.

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Glossary of key terms and acronyms

AQMeN Applied Quantitative Methods Network

CAQDAS Computer-Assisted Qualitative Data Analysis Software

CDTs Centres for Doctoral Training

CPD Continuous Personal Development

CQDA Core Quantitative Data Analysis (Methods Course)

DTC Doctoral Training Centre

DTP Doctoral Training Partnership

DTU Doctoral Training Unit

ESRC Economic and Social Research Council

HE Higher Education

HEI Higher Education Institution

HESA Higher Education Statistics Agency

HMSO Her Majesty's Stationery Office

M Masters

NCRM National Centre for Research Methods

Q-Step Programme to support 'step change in quantitative social science training and skills in the UK

RA Research Assistant

SGSSS Scottish Graduate School of Social Science

SSPS School of Social and Political Science (University of Edinburgh)

STEM Science, Technology, Engineering and Maths

STIS Science, Technology and Innovation Studies

TNA Training Needs Analysis

Key for qualitative participant identifiers

Pilot and walking interview participants

Penny, PhD = Penny, 2nd year Sociology PhD student, pilot interviews

Barry, PhD = Barry, 1st year Sociology PhD student, pilot interviews

Marion, PhD = Marion, 2nd year Sociology PhD, walking interviews

Phoebe, PhD = Phoebe, 2nd year Sociology PhD Student**,** walking interviews

Leah, PhD = Leah, 3rd year Social Anthropology PhD, walking interviews

Kenny, PhD = Kenny, 3rd year Canadian Studies PhD, walking interviews

Charlotte, PhD = Charlotte, 3rd year Sociology PhD student, walking interviews

Bella, PhD = Bella, 3rd year Social Work PhD, walking interviews

Megan, PhD = Megan, 3rd year Politics PhD, walking interviews

Aaron, PhD = Aaron, 3rd year Politics PhD, walking interviews

Sienna, PhD = Sienna, 3rd year STIS PhD, walking interviews

Denise, PhD = Denise, 3rd year South Asian Studies PhD, walking interviews

Jason, PhD = Jason, 3rd year STIS PhD, walking interviews

Video / written diary participants

Fiona, M = Fiona, Social Research Masters student, video diaries

Nathan, M = Nathan, Social Research Masters, video diaries

Aisha, PhD = Aisha, 1st year Sociology PhD, video diaries

Toni, PhD = Toni, 1st year Social Policy PhD, video diaries

Sasha, PhD = Sasha, 1st year Sociology PhD, video diaries

Sue, M = Sue, Science, Technology and Innovation Studies (STIS) Masters by Research, video diaries

Andrew, M = Andrew, STIS Masters by Research, video diaries

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1 Chapter 1: Introduction

1.1 Researching tensions and opportunities in UK social science doctorates and ESRC-specified research and skills training

This study investigates the expansion and standardisation of research methods training for UK social science postgraduates with a social constructionist framing. The study addresses the difficult questions of the social science PhD. What does today's social science doctorate look like? Who is it for and what is its purpose? Moreover, what does the generic training programme underpinning today's social science doctorate look like? How have new postgraduate training programmes developed, what intentions have informed these developments and which stakeholders have driven, and been involved, in this process? How effective have changes to methods training been?

A lengthy history underlies the doctorate in medieval Europe, with the aim of permitting teaching in academic institutions it became a research degree in 1800s Germany and then disseminated across Europe and beyond (Park, 2007). Introduced in 1917 in the UK by the University of Oxford, PhD structures have varied geographically since their inception with lengthier doctorates being typical in the USA and Europe than the British 3-4 year duration. Regarding the relative focus on research versus the pursuit of formalised learning within the PhD, the USA doctorate typically comprises both conducting research and undertaking advanced taught courses. By contrast the European model, including the UK and also Australia, was previously centred solely on conducting research via the 'apprenticeship model' of learning from the supervisor(s) (Park, 2007).

The social science doctorate has changed enormously since the 1980s and the Winfield Report (1987). The doctorate was formerly focused on generating new, specialised knowledge and research, with the intention of developing an expert academic in a particular niche field of study, "to master an arcane but well-bounded area of human knowledge such that she or he knew more about it than anyone else." (Luker, 2008, p. 11). However, although doctoral graduates knew much about their specialist subjects, whether or not they emerged with strong skills in conducting various types of research was largely serendipitous. This depended on factors such as whether their PhD supervisor(s) was familiar with a range of research methods and also on the knowledge base among the academic teaching staff at their higher education institution (Collinson and Hockey,

1997). Such an approach to doctoral learning, based around chance, became viewed as unsatisfactory (MacInnes, 2014). Moreover, as the employment landscape surrounding the doctorate altered, with increasing numbers of doctoral students and proportionally decreasing employment opportunities in the academy for those with doctorates, so too did the doctorate itself have to change. A student emerging with a PhD focused on one specialist topic and having particular 'expert' knowledge, yet limited cognisance on how to conduct research in general, was progressively viewed as an inadequate outcome (Deem and Brehony, 2000).

Thus, a more systematic approach to social science doctoral training was born, that was no longer piecemeal or dependent merely on local availability at particular universities. Prior to the creation of the DTCs, from the late 1980s the ESRC progressively considered what the social science doctorate should consist of, including the training it should optimally include and its overall purpose for students and for society more broadly. The ESRC circulated their the 'ESRC Discussion Paper for Research Training in the 1990s' (1989) to academics and relevant bodies and published their 'Postgraduate Training Guidelines' in 1991 responding to that feedback outlining their expectations for formal research training of up to 60% of total time in the 1st year of the PhD (McKendrick and McCormick, 1993). The ESRC 'Recognition Exercise' then took place whereby applications were invited from university departments to become ESRC recognised as providing appropriate doctoral research training and various institutions and departments were awarded that status.

The ESRC increased formalisation of doctoral training from 2005 by setting out requirements for PhD training that institutions taking on ESRC-funded students had to conform to (ESRC, 2005) in particular research methods, for example quantitative, in which a skills shortage had been identified, as well as subject-specific training. Thus, in 2010 a group of academic institutions offering ESRC-approved training programmes were established, initially termed Doctoral Training Centres (DTCs) and later supplanted by the Doctoral Training Partnerships (DTPs) in 2016 (ESRC, 2005; ESRC, 2009; ESRC, 2015). The DTCs and DTPs aimed to offer a more overarching approach to the provision and delivery of research methods training to social science PhD students. Consequently, responding to the ESRC Postgraduate Training and Development Guidelines 2015, as well as previous ones, many British universities have implemented a teaching programme that exposes social science postgraduate students to research methods beyond those typically associated with their discipline. The key impetus behind this policy change was to create a stronger link between postgraduate training and qualifications and employment skills.

Additionally, this policy was intended to provide an increased number of researchers, and future academic teaching staff, with quantitative research skills, due to a reported deficit in these.

However, although many would agree that knowing how to use a reasonably broad spectrum of methods to conduct research is seemingly a good thing, the question arises at what, if any, cost? Certain methods have long been associated with particular academic disciplines (Trowler, Saunders and Bamber, 2012). Economics, for example, typically uses rather complex and frequently advanced quantitative research methods, anthropology qualitative ones. Disciplines such as sociology can straddle both, with some sociologists tending to employ quantitative research designs, others qualitative and some a mix of the two. However, even within sociology the differing perspectives among those who have strong preferences for either qualitative or quantitative methods, that is 'methodological tribalism', can be as entrenched as between those with diametrically opposing views from completely different disciplines such as anthropology contrasted with economics (Murtonen, 2005). 'Academic tribalism', a term for this type of perspective which holds dear the particular elements of a specific discipline, is at odds with inter-disciplinarity and moves towards embracing breadth in social science knowledge and methods within contemporary research and education. Inevitable tensions arise between maintaining a sense of being an academic within a particular discipline, whichever discipline that is, and being a social scientist with a broad skill set, someone who can turn their hand to any research question and use the most appropriate methods to answer particular research questions (Orton-Johnson and Webb, 2011). This can be conceptualised as the friction between specialism versus generalism. If lacking broader methodological knowledge, however, researchers could be stymied into being able to use only one or two methods to attempt to answer research questions, yet these may not be the most appropriate ones. As Epstein meaningfully argues, the problem is 'if all you have is a hammer, everything looks like a nail' (Epstein 2019b: 11).

Consequently, the overarching question that this research study poses becomes, is it possible to learn a broad set of research methods that are useful for later employment without this being at a disproportionate cost? If so, what are the costs? Do these relate to losing specialisation in a particular method or methods? Do people lose sight of their own academic discipline? If they do, is this important? If it is important now, will it continue to be as the academic landscape evolves? Some have also argued that true scientific discovery occurs via trial and error and by means of

serendipity (Muller and Young, 2014; Luker, 2008). Merton characterises 'serendipity' as: "the discovery through chance by a prepared mind of new findings that were not looked for" (Merton cited in Sztompka, 1986, p. 98). However, there is a challenge to this type of serendipitous 'discovery' leading to ground-breaking thought and innovation being possible in a climate of intense learning crammed into an overloaded 'shopping basket' of research methods courses and other requirements within today's social science doctorate. Similarly to Merton's account of 'serendipity, others propose that it is when academic disciplines encounter each other that new ways of thinking and knowing can begin to emerge (Trowler, Saunders and Bamber, 2012). As Epstein reveals, being capable of 'ambidextrous thought', or 'deep and nimble thinking' as one of my expert research participants says, which employs different types of thinking using both 'standard practice' together with 'forces that pushed in the opposite direction' (Epstein 2019, p.257) illustrates the value of a breadth and depth perspective in academic (research methods) learning and how this could be advantageous. We could see here the 'standard practice' to which Epstein refers as being the specialised thinking and learning associated with a particular discipline or methods and 'ambidextrous thought' as being akin to inter-disciplinarity and breadth in methods learning and knowledge as well as ways of thinking.

Although some literature has explored perennial topics such as what the form and purpose of the social science PhD is, a small body of literature on students' views, both undergraduate and relatively less on postgraduate, of studying research methods also exists. Much literature, however, predates the more recent modifications to postgraduate study programmes. This study aims to address this gap in the literature by contextualising postgraduate students' views of research training within the overall expectations by the ESRC of what they will achieve during their doctorate. This study poses a multitude of questions. Investigating whether students perceive value in having training across a methodological spectrum and probing whether they have also undertaken more advanced training in specific methods is addressed within this study, for example. This questions whether the broader employment-relevant skills such as leadership, communication, making an impact with research and team-working are actually harnessed within the modern social science doctorate. This thesis asks, does training everyone to be in some sense the same, that is to have knowledge of, and competence in a broad range of research methods regardless of which academic discipline they are in and which research methods are typically utilised associated with their discipline, effectively stifle that sort of creativity and serendipity for original thought? Is there actually time and space in a highly compressed 3 – 4 year PhD for the

trial and error which can lead to ground-breaking knowledge? These are the myriad, challenging and complex questions that this study poses. It is clear that a top-down approach to change has occurred via the ESRC's requirements for UK social science doctorates and their associated training. Yet, are top-down approaches the best way of altering policy and practice in general and in these circumstances in particular?

Drawing on the literature, this thesis hypothesised that postgraduate students are likely to perceive research methods training differently dependent on their own backgrounds and characteristics. For example, international students may have differing views to UK domestic ones, part-time and full-time students and those with varying original motivations for their doctoral study are likely to view the training model PhD differently as argued by Deem & Brehony (2000). Of critical importance in this argument is whether a student's original impetus for doctoral study was to improve their subsequent employment prospects in research or academic teaching. Further hypotheses were that some particular resistance to, or difficulties in learning, quantitative methods training might be voiced among some students. I also anticipated that achieving all of the ESRC expectations within the 3-4 year timeframe would be perceived as challenging by students and that they would inevitably be faced with making difficult choices during their doctoral journey.

This thesis proposes an argument that top-down approaches to problem-solving are not necessarily optimal and that by approaching matters in this way, unintended consequences can result. Postgraduate students should be consulted about what they think their Masters and doctorates should look like, and what skills and research training they believed they are likely to need; it is they who are most affected by these changes in higher education policy and practice. Some may, and indeed do, argue that students do not necessarily know at the time of study what is 'best' for them. This view even emerges from some of the students in my research and is discussed in chapter 7 within the '*your future self will thank you'* theme.

I argue that postgraduate students are now stretched, some potentially to breaking point. The first part of the title of this thesis is crucial to the issues examined, the question 'has something got to give?' The study proposes that students, and arguably their academic institutions and potentially supervisors, are the ones who are giving. Consequences around potential impacts on the quality of submitted doctoral theses, students' capacity to actually undertake more advanced and subject and discipline specific training and that the identified quantitative skills deficit has not been

satisfactorily addressed are highlighted in this thesis as possible casualties of the standardised training PhD model of today.

1.2 Research aims, research questions and expected outcomes

1.2.1 Research aims and overall research questions

The key aims and overall research questions of this research are:

1. To establish what changes there have been in the structure and administration of UK PhDs and postgraduate social science research methods training and;

2. To investigate how postgraduate students, employed PhD graduates and some key academics / policymakers view such changes in methods training provision, how effective such changes have been and whether modifications to the current structure would be beneficial.

In this thesis I am most interested in methods training for doctoral students, however, training for Masters students could not be omitted from this research due to the 1+3 programme of postgraduate study[i]. Specifically, I have sought to investigate whether it is beneficial for Masters and doctoral degree programme to include prescribed methods training, in both qualitative and quantitative methods, as well as more advanced or specialised training in the particular methods a student requires to conduct their doctoral research project.

1.2.2 Research Questions

A. Was the UK social science doctorate of the 1980s and 1990s deficient and did it have to change?
B. If change was required, to what extent did the social science PhD need to alter and in what way(s)?
C. What does today's UK social science doctorate look like? Who is it for and what is its purpose? Should this purpose include preparation for employment?

D. What grounds are there for believing that changes made to training/ professional development will be effective in boosting research capacity / productivity?
E. What are the key features of the generic training programme underpinning today's social science doctorate?
F. What is the relationship between breadth and depth within such training programmes?
G. What factors underpin and influence how postgraduate students perceive and respond to methods training? Which inter- and intra-group differences are apparent and should these be taken into account in planning and delivering training?
H. Should any research training be compulsory for postgraduate students in the UK, and if so, which and for whom?
I. How have new postgraduate training programmes within universities developed, what intentions have informed these developments and which stakeholders have been involved in this process?
J. What is the rationale underpinning the development of the ESRC's evolving social science postgraduate methods training framework?
K. Is there a quantitative methods and skills deficit in the UK as has been identified in the literature and policy documents shaping the doctoral training agenda?
L. How effective have changes to methods training been? What are the strengths and weaknesses of the new PhD training model? Have there been disproportionate costs and, if so, to whom? Is achieving all of what is expected of doctoral students realistic and attainable? Does *something have to give*? If so, who or what has '*given*'?
M. If there are aspects in which the training model social science PhD is deficient, how might it be further modified to better achieve the intended objectives?

Proposals for recommended modifications to the current training provision structure are set out in the final chapter of this thesis.

1.3 Theoretical context and framing the research problem

The key theoretical framing of this thesis draws on perspectives on the relationship between education and the labour market and how these in turn connect more broadly to changes in the economy and society. This connects to the sociology of work. Drawing on a social constructionist perspective espoused by scholars such as Hacking (1999), Law (2004) and Abbott (2001), I argue

that perspectives on the purpose of the social science doctorate, and the ideal PhD student and postdoctoral researcher are constructed archetypes that have been subject to contextual and temporal variation. Core ideas within higher education vary contextually, that is in different locations and countries, within people and also across time. Today's prevailing perspectives on the doctorate and postgraduate education have altered substantially from those framing pre 1970s Britain. New labour market circumstances bring forth new ideals. Views on what constitutes appropriate research methods training, and the pedagogical principles which should underpin its teaching, are mutable and differentially constructed according to time and place. Decisions on appropriate methodological content, which methods should be taught and whether it is even desirable to include a methods training element within the doctorate have fluctuated. Disciplinary and methodological identities are heavily socially-constructed, and these frame personal attitudes to methods training.

The sociology of work, and evolution in the nature of work, bears broader contextual relevance to change in higher education and postgraduate degrees. Varying forms of work reigned supreme in each society from the hunter and gatherer society 40,000 years BP (Before Present Day), through manufacturing in the industrial society of the 19th and 20th centuries, to service provision and information/knowledge-related occupations in today's post-industrial / informational society (Edgell, 2006). This overall change is broadly rooted in the shift towards 'flexible specialisation' that is associated with the move from Fordism to post-Fordism. Societal-specific changing dimensions of work make separate discussion of education and employment from their socially constructed nature, arguably meaningless.

Boltanski and Chiapello (2018) portray 3 phases in the '*spirt of capitalism'*. The first spirt of capitalism was during the 19th century up until the inter-war period and characterised by innovative entrepreneurs who took risks yet saved and retained strong family values. The second spirt of capitalism was manifest from 1930 - 1960 and typified by the goal of becoming a powerful director of a large-scale bureaucracy with job security, rational planning and an easy transition from higher education into bountiful employment (Budgen, 2000). This 2nd spirit of capitalism was rejected in favour of increased flexibility in career biographies, championed within the 3rd spirt of capitalism, '*connexionist capitalism''* focused around forming and using networks which Boltanski and Chiapello (2018) argue existed from approximately 1968 onwards until the present time. This 3rd phase, '*the new spirit of capitalism'* showcases the ideal modern worker as versatile, generalist and T-shaped. "Charisma, vision, gifts of communication, intuition, mobility and generalism

become the ideal traits of the new leaders." (Budgen, 2000)[ii]. A different type of ethical and adaptable capitalist is applauded, the "dressed-down, cool capitalists like Bill Gates…who refuse to surround themselves with the formal trappings of bureaucratic authority" (Budgen, 2000). Old ways of working within Boltanski and Chiapello's (2018) 2nd spirit of capitalism, are demonised as being evil, hierarchical and overly restraining (Sennett, 1998).

Such a degree of flexibility both in careers and desired employee characteristics, however, leads to uncertainty and tension operating at two key levels. First, uncertainty within employment and overall career trajectories and second, lack of clarity around what skills and attributes students will need in order to successfully enter postgraduate employment (Sennett, 1998; Tomlinson, 2012). Graduates can feel they must gain a range of skills unable to predict what employers will require or precisely which occupation they will gain. Thus, freedom comes at a cost of job insecurity: "the downside of this utopian vision…that the freedoms of this new organization of labour come at the expense of the sense of security offered by the more fixed career paths of the second spirit of capitalism" (Budgen, 2000). Thus, a tension exists in the directional pulls experienced by students of being a generalist versus a specialist.

T-shaped has previously been most typically used in the field of employment and recruitment to describe someone who is versatile and possesses both depth and breadth in abilities, knowledge and skills (Demirkan, Spohrer and Moghaddam, 2018) although the principles surrounding this are spreading into academia and educational and curriculum planning. One of the earliest references to the term T-shaped (specifically 'the T-shaped man') was in 1978 by Johnston in an academic engineering journal debating how scientists become managers. As discussed by (Demirkan, Spohrer and Moghaddam), the vertical part of the 'T' represents the depth of knowledge and skills whilst the horizontal part indicates the ability to be cross- and interdisciplinary and collaborative, as well as being able to apply knowledge to areas outside of the person's own expertise. Additionally, T-shaped skills, as well as T-shaped people, are outlined in employment and recruitment literature, again reflecting the breadth and depth characteristics within such skills.

Even when people are successful in gaining a particular occupation, this can be subject to sudden change as there are no longer 'jobs for life' and most careers are instead fluid and dynamic with individuals typically working for several different employers over their life course. "Workers are asked to behave nimbly, to be open to change on short notice, to take risks continually, to become ever less dependent on regulations and formal procedures." However, this plethora of flexibility

whilst seemingly attractive on the surface due to autonomy as individuals have the “chance of becoming a ‘visionary’ of their own dreams” (Budgen 2000) comes at the cost of anxiety as “people do not know what risks will pay off, what paths to pursue...’ (Sennett 1998, p. 9). A more detailed discussion of historical changes in work is presented in chapter 2.

1.3.1 Contextualising social science doctorates and research training

Higher education (HE) policy and practice have been shaped by wider structural changes in the UK, including those in the economy, the ‘massification’ of HE (the increasing student numbers since the 1990s) arising from Governmental policy and the shift towards marketisation of universities. The remarkable increase in student numbers since the 1990s was driven by the goal of half of a cohort having attended HE. The ‘marketisation’ of academic degrees creates a relationship between what is learned at university and the goal of gaining employment-relevant skills, which will be discussed further in chapter 2. Many students now pay for their education via tuition fees[iii], and must support themselves financially via paid employment whilst studying, thus there has been a paradigm shift conceptualising students as university ‘customers’ (Earley, 2013), expecting a return on their financial investment and value for money (Tomlinson, 2012). Universities are now arguably constructed as education businesses dealing in the output of an academic degree associated with potentially increased economic rewards in the form of better quality and more highly remunerated postgraduate employment (Muller and Young, 2014). Within this changed scenario, research skills learned at university can be socially-constructed as ‘commodities’, marketable assets for increased employment opportunities (Orton-Johnson and Webb, 2011).

With a competitive and flexible labour market, higher education’s ability to meet the needs of both employers and graduates was scrutinised. In the 1990s, the economy became constructed as requiring a ‘more highly educated and flexible workforce’ DfES (2003) to meet its demands, there was increased global competition for employment-relevant skills (Tomlinson, 2012) and thus new types of undergraduate and postgraduate degrees were created. A reshaping of the doctorate occurred around questions of its fitness for purpose as preparation for employment led to change in how the doctorate was conceptualised. Additionally, there were demands for innovation in research and degrees that are useful for society (Tomlinson, 2012) as well as postgraduate training that improves PhD graduates’ impact in non-academic settings. Arrangements in universities

around PhD supervision and completion rates became more closely monitored and regulated by research councils such as the ESRC (Budd *et al.*, 2018), which although Government-independent must nevertheless account for their budgets and activities.

Higher education expansion was intended to be socially-inclusive, yet some scholars express concern that HE massification and marketisation could actually increase class-based inequalities in HE access (Archer, Hutchens and Ross, 2003). Perceptions of variation in institution quality and reputation among employers could also result in occupation and salary differences dependent on the perceived status of the university a graduate attended (Archer, Hutchens and Ross, 2003; Furlong and Cartmel, 2005; Tomlinson, 2012). Paradoxically, HE massification could inadvertently be enabling the structural inequalities it was originally created to assuage (Tomlinson, 2012, p. 411). It should be noted, however, that general arguments about the transformation of universities are dominated by changes at undergraduate level and developments at postgraduate level are distinct in some particular ways. One such difference is that research councils fund a number of 1+3 and +3 studentships at postgraduate level, thereby arguably widening participation regardless of social demographics.

1.4 Study methods and research setting

Although a small number of views were gathered from postgraduate students and experts in academic institutions around the UK, the bulk of the research data is focused around the University of Edinburgh. The University of Edinburgh was selected as it is a pre-92, Russell Group university and part of a DTC (at the time that the fieldwork commenced) and is now a DTP. A key way in which the University of Edinburgh differs from other Scottish universities, is that it has a higher proportion of international students than some other universities and perhaps also a larger proportion of students from elsewhere in the UK, for example England. These differences do not present problems, however, for my research, if anything they enhance it as literature indicates some differential views among international and domestic students. Therefore, an increased possibility to probe the views of the international student community is a positive element.

It should be stated that I am a Sociology doctoral student in the University of Edinburgh and my PhD was funded by the ESRC through a linked studentship associated with the National Centre for Research Methods award.

A mix of qualitative and quantitative methods has been used, including some less 'tried and tested' methods, for example walking interviews and video diaries. The overall set of methods comprised:

- *Documentary analysis*: of key documents such as the ESRC postgraduate research and training guidelines and the DTC/DTP frameworks
- *Information gathering*: on what methods training provision will include from 2017-2018 onwards in DTC/DTP universities
- *Walking interviews*: with postgraduate social science students at the University of Edinburgh
- *Video diaries*: created by social science postgraduate students undertaking mandatory methods training at the University of Edinburgh in 2016-17
- *Telephone, video and face-to-face interviews*: with a sample of experts from academic institutions and a higher education policy organisation
- *Online questionnaires*: with postgraduate social science students at the University of Edinburgh; postgraduate students of the Scottish Graduate School and employed doctoral graduate researchers / academics

The research design being reported on in this thesis and greater detail of the methods used will be given in Chapter 3.

1.5 Thesis structure: chapter by chapter outline

Chapter 2 'Literature Review' presents a detailed account of the contextual theoretical framing of this research study and the relevant concepts operationalised within this thesis. I draw on perspectives theorising the relationship between education and the labour market and how these connect to changes in the economy and society more broadly.

The sociology of work, and the evolution in the nature of work over time is of critical importance to this thesis. I provide a consideration of the employment-relevance and employment-focus of the social science doctorate and literature providing accounts of this, and of historical change in work, is discussed during chapter 2. The massification and marketisation of higher education in terms of degrees and educational learning becoming skills-focused and commodity-based together with

change in the purpose and form of the social science doctorate in terms of the move towards the training model PhD from the apprenticeship model in the 1980s, and before, is assessed.

Some comparison between the UK PhD and those in other countries such as the rest of Europe, the USA and Australia is made. Key ESRC policy documents and the shift towards the current model of DTCs and DTPs whereby academic institutions administer doctoral studentships are described and examined in detail. I highlight challenges in this devolved doctoral studentship system and the new postgraduate training regime that are identified in the literature. Literature discussing factors underpinning differences between PhD and taught postgraduate students is deliberated, including their varying motivations for doctoral study as well as their postdoctoral aspirations. An analysis of how these variations as well as the effect of personal demographic characteristics such as being an international or domestic student and being a mature and / or part-time student is presented in relation to how these may influence students' responses to broad methods training and the new doctoral training model. The PhD student and supervisor relationship and pedagogical principles in higher education are also considered. A body of literature on quantitative skills and the argued deficit in these together with conceptions of statistics anxiety is examined. I also assess potential tensions described in the literature between being a T-shaped, generalist researcher and student and one who is specialised and explicitly tied to a narrow range of methods and thoroughly grounded in a particular discipline. Moreover, possible frictions arising from methodological and disciplinary tribalism, contrasted with methodological pluralism and interdisciplinarity, are examined.

Chapter 3 'Research Methods and Design' begins by presenting the methodological choices underpinning this study's mixed methodological design and the rationale for these, followed by the research questions guiding this thesis. The key participant groupings of Masters and PhD students and also a small number of those termed 'experts' who were senior academics and policymakers involved in the doctoral training programme planning and delivery and the reasons for consulting these participants are outlined.

The study's overall methods as well as a detailed account of the more innovative methodological choices is given. For example, walking interviews were conducted near, and around, the university area and research training rooms with primarily later year (3rd and 4th year) doctoral students in order to encourage space and place reflections on their doctoral and methods training experiences. The use of video diaries with Masters and 1st year PhD students studying broad and compulsory

methods courses as their experiences of the course unfolded is described. Specific decisions were made regarding the year of study of the student participant groups for each methods; later year doctoral students were chosen for the walking interview as some literature had indicated that students tend not to perceive the value of things such as methods training at the time, and it is only later that the benefit becomes apparent as the prospect of postdoctoral employment is on the horizon. Possibly this benefit does not become fully apparent until a former student is in postdoctoral employment. Additionally, Masters and 1st year PhD students were selected for the video diaries as it is these students who most typically study broad and compulsory methods courses, and I sought to capture reactions at the time of study. The concentration of broad methods course study among earlier year students is largely due to the way that the training infrastructure is organised and delivered, as it takes into account that the ESRC encourages that up to 60% of the Masters and 1st year of PhD is dedicated to training.

Accounts of the quantitative method of online questionnaires with current PhD students and telephone and face-to-face interviews with the experts are also discussed in chapter 3 on methods. I also outline the process for participant recruitment as well as a defence of the selection of the University of Edinburgh as the key study site. I engage in a personal reflection on my status as an 'insider' researcher, a current social science doctoral student who is examining the topic of social science PhD study, the arguably navel-gazing nature of this and how this specific research status can be a double-edged sword is explored. The methodological approaches underpinning my analysis of the qualitative research data are also made explicit, as well as how data were coded using a combination of a priori and inductive codes arising from the data. I document my approach to the qualitative data analysis, which partly drew on grounded theory, but did not use this in the purist sense of a completely inductive approach developing theory from the data and having no prior hypotheses or deductive elements (Corbin and Strauss, 2008). I then combined this approach that was influenced by grounded theory with content analysis both in its 'conventional' and 'directed' forms. A brief account of the quantitative data analysis process is also presented.

The findings from my research are presented across four data chapters, chapters 4 -7. Each of these chapters deals with a different, but related, analytical topic(s) from my research findings. Chapters 4 and 5 tackle whether postgraduate students should study broad methods courses and whether these should be compulsory, presenting relevant qualitative and quantitative data. Chapter 4 outlines some key benefits of having broad methodological training and knowledge**.** Findings from the various participant groups, current PhD students, employed PhD graduates and

experts are portrayed. Chapter 4 primarily focuses on the 'quick wins' that is what has worked well in terms of the new training postgraduate structure by comparing the research findings according to some of the ESRC training outcomes proposed in their guidelines.

Chapter 5 reports the quantitative and qualitative findings on whether broad methods training overall should be compulsory for *all* social science postgraduate students, that is both Masters and PhD students, and whether each of quantitative and qualitative methods training specifically should be compulsory. Contrasting with findings presented in chapter 4 documenting increasing enthusiasm for methods courses over time, this chapter examines the building negativity in some students' views as their course unfolded. Motivations for PhD study (and whether this was primarily intrinsic or instrumental) as an influence upon broad methods training opinions is probed. I appraise other key factors that can influence students' views of broad research training, such as external factors including class size and characteristics of the teaching space, teacher effects and tutorial group dynamics.

In chapter 6 I assess data on advanced methods training and whether students are being able to undertake this, as was one of the ESRC's core ambitions for doctorates. Issues of the available timeframe of 3-4 years for the current PhD, in tandem with the expectation and requirements of what is expected to be achieved and the feasibility of this for students, are considered. The chapter also reflects upon the ways in which current postgraduate methods training at universities may not be working optimally, presenting my analytical theme, '*one size fits some but not all'*.

I also elucidate in chapter 6, some internal (i.e. within-person) factors impacting on methods course experiences, such as: students' year of study, their age, their gender and which methods they favour and are using for their own doctoral research on their views of broad research methods training. The concepts of statistics ability and anxiety and 'academic tribalism' in relation to internal factors such as disciplinary identity and methodological identity that may shape people's views and research findings on these are discussed. Finally, views on problems with methods courses and suggestions for improvements are described as well as an argument indicating my own proposals for change to current arrangements.

Chapter 7, the final data analysis and results chapter, presents findings on the overall purpose of a social science PhD together with whether this has changed over time. I also provide an account of the effectiveness of doctoral methods training for research / teaching employment (both academic and non-academic) from the views of students and experts. I pose and seek to answer

the questions '*should* one of the doctorate's fundamental purposes be to prepare students for employment? and '*does* it *successfully* achieve this?' Probing into potential effects between students' postdoctoral career aspirations and views of broad methods training, I unpack whether seeking a research and/or teaching career is associated with a more positive view of broader research training. The hypothesis underpinning this is that students would seek an increased value in having broader training if they perceived its use to them for postdoctoral employment. Views from experts on establishing the DTCs and DTPs are also described, setting out their position on what they felt worked well in the process and presenting arguments on the issues they saw such as some institutions being casualties of the process. This clearly linked with findings in the literature from Budd et al (2018) of some universities being left 'outside the golden circle'.

Finally, chapter 8 provides a discussion of the findings, taking the results to a deeper level in linking material across the data and contextualising how this relates back to the literature and also to the original impetus for change in the UK social science doctorate. Limitations of this study are discussed as well as some conclusions. Due to the nature of this topic, recommendations are presented on some possible modifications to the current doctoral training system for consideration by policymakers, that I argue are likely to improve doctoral students' experiences based on my findings in this research.

2 Chapter 2: Literature Review

2.1 Introduction

This research asks difficult questions of the social science PhD itself today in the UK. In the broad sense, it examines social constructions of what today's social science doctorate looks like, who it is for and what its purpose is. The thesis involves a specific focus on research methods training within the social science doctorate, seeking to provide contextual information and original research data on the generic training programme underpinning today's social science doctorate. However, relating to this inquiry into research methods training a number of questions are pertinent, questions such as, is it possible to learn a broad set of research methods that are useful for later employment without this being at a disproportionate cost? If there are costs, what are these? Could costs relate to loss of specialisation in a particular method or methods or losing sight of the single academic discipline? If people do lose a degree of specialisation or disciplinary focus, is this important? Even if this is important now, will it continue to have salience as the academic landscape continues to evolve? Does training everyone to be in some sense the same, that is to learn similar sorts of methods with an emphasis on breadth as well as depth, stifle the opportunity for trial and error that can lead to serendipitous discovery and innovation? Is there even time and space for trial and error in the highly compressed 3–4 year UK PhD?

This thesis of the literature also examines the purposes which have informed developments in training provision in recent decades, and how constructions of the doctorate have changed over time leading to today's training model PhD, and sought to identify which stakeholders have been involved in this process. This chapter reviews and analytically draws together relevant literature to inform and begin to tease out the potential contextual information to answer these research questions. Chapters 4-7 that follow will outline the findings of this study and how these connect with the existing literature.

Before examining the relevant bodies of literature and research evidence in some detail, the contextual theoretical framing of a social constructionist approach and the sociology of work and relevant concepts for this thesis will be outlined.

2.2 Theoretical framing

The key theoretical framing of this thesis, employing a social constructionist approach and with reference to the sociology of work, draws on perspectives on the relationship between education and the labour market and how these in turn connect to broad structural changes in the economy and society. I argue that conceptualisations of higher education, the social science PhD, work and skills are socially constructed and vary contextually and temporally. I draw on a qualified form of social constructionism. Social constructionism has been criticised as denying reality insofar as it can result in lack of action to solve social problems (Peterson, 1999). This, however, misunderstands the premise of qualified social constructionism which instead of seeking to deny the existence of reality, proposes there are manifold understandings and interpretations of things and concepts which are constructed by people as opposed to objectively existing (Cronon, 1996). I apply the epistemological perspective of social constructionism to varying perspectives of what the social science doctorate means and views on its purpose, as well as to interpretations of how higher education and its relationship to work and skills has altered temporally and contextually.

Sociology of work, and the evolution in the nature of work over time, bears broader contextual relevance to change in higher education and postgraduate degrees. Essential varying forms of work reigned supreme in each society from the hunter and gatherer society 40,000 years BP (Before Present), manufacturing in the industrial society of the 19th and 20th centuries to service provision and information/knowledge-related occupations in today's post-industrial / informational society (Edgell, 2006). A more detailed discussion of historical changes in work is presented later in this chapter.

2.2.1 Massification and marketisation of HE

Higher education (HE) policy and practice have been shaped by wider structural changes in the UK, including those in the economy, the 'massification' of HE (the remarkable increase in student numbers since the 1990s driven by the government goal of half of a cohort having attended HE) and the shift towards marketisation of university degrees. The construction of the 'marketisation' of academic degrees creates a relationship between what is learned at university and the goal of gaining employment-relevant skills. Many students now pay for their own education, and there was a paradigm shift from students to 'customers' of the university, expecting a return on their financial investment. Students arguably expect value for money from their university degree as opposed to being solely thirsty for knowledge. Connections between university degrees and constructions

around the importance of getting value from these were further intensified via the introduction of student tuition fees, making students engage in personal expenditure upon education (Tomlinson, 2012). Moreover, with students frequently undertaking paid employment to support themselves during their studies as well as some paying tuition fees, a desire for financial investment 'return' by gaining relevant skills in order to secure quality post-degree employment is understandable. Driven by an intense economic focus and 'marketisation' of degrees, the way higher education is constructed in society has arguably moved away from a purist thirst for knowledge to universities as businesses that peddle degrees (Trowler et al 2012), buttressed by 'market demands' (Muller and Young, 2014) and 'academic capitalism' (Slaughter and Rhoades, 2004). Research skills become reconstructed as marketable 'commodities' for employment (Orton-Johnson and Webb, 2011).

As HE expanded, new types of degrees were created leading to increased variety in resulting graduates. This was against a backdrop of a more flexible labour market, and intensified globalised competitiveness for employment-relevant skills (Tomlinson, 2012). The rationale underpinning the 1990s and 2000s was that the contemporary economy necessitated a 'more highly educated and flexible workforce' (DfES, 2003) and graduate-level employment was predicted to increase. However, within a tight fiscal environment earlier goals of expansion have subsequently becoming more qualified, as graduate-level employment growth has not continued as forecast (Tomlinson, 2012).

In such a flexible and competitive labour market environment, questions were inevitably posed regarding the level to which HE meets employers' requirements, as well graduates' needs. Additionally, there have been demands for innovation in research or those with degrees that increases value for society (Tomlinson, 2012). Moreover, the so-called 'impact agenda' whereby research is expected to extend its impact into non-academic settings is also part of the broadening of postgraduate training. In tandem, there has existed a lack of clarity on the relationship between HE and employment. Park (2007) avers that the reshaping of the doctorate arose as people had begun to question what purpose it was actually for and ontological questions as to whether it was fit for purpose. Did it prepare those with doctoral degrees for employment, and was that employment only suitable within the academy, or could it be beyond that? With ever-increasing numbers of postgraduate students, was employment within the academy for all even realistic anymore? The answer to that is no, as there were far more people with PhDs seeking academic employment than available academic teaching or research roles. If people with doctorates wished

to gain employment in other sectors such as government/policy research roles, what skills did they need to have? Posing this question leads us on to a consideration of the ESRC's modifications to postgraduate social science research and development training provision intended to enable students with a British social science doctorate to have broader application in terms of employment. The ESRC postgraduate training and development guidelines and associated HE policy changes will be considered in detail during this review.

During this time of massification and marketisation, changes in PhD arrangements in institutions such as closer monitoring of supervision and seeking to improve doctoral completion rates have occurred on the part of research councils such as the ESRC, which although independent of the state, nevertheless have to justify the appropriateness of their budgets and activities (ESRC, 2009; ESRC, 2015). Yet overall there has paradoxically been a reduction in public funding to universities.

The expansion of higher education for all who would benefit was intended to be inclusive across social class groups and the range of demographic profiles of students. Some scholars, such as (Archer, Hutchens and Ross, 2003) express disquiet however, that the massification and increasingly market-led nature of HE is likely to increase class divisions in HE access. Moreover, disparity could occur in resulting occupation types and salary levels attainable by individual graduates dependent on the perceived status of the university they attended (Furlong and Cartmel, 2005; Tomlinson, 2012; Power and Whitty, 2006). Thus paradoxically, massification of HE may inadvertently be enabling the structural inequalities it was originally created to assuage (Tomlinson, 2012, p. 411).

2.3 Change in the purpose and form of the social science doctorate - move to training model PhD

Much has been written about changes to the social science doctorate elsewhere, which this thesis will endeavor to summarise here. It is important to set out some key points relating to changes in higher education policy and how these have constructions around what is important and of value in the doctorate which have influenced the training model social science doctorate now in place, which is the key topic of this thesis.

2.3.1 Historical changes in UK social science doctorate from 1980s

2.3.1.1 Scrutiny of the social science PhD

Since the 1980s the UK doctorate, in particular the social science PhD, has been under scrutiny and various reports were published investigating this (Swinnerton-Dyer, 1982; Rothschild, 1982; Winfield, 1987). As noted in the introduction, the British Government in the 1980s, led by the Conservative party and headed by Prime Minister Margaret Thatcher, was extremely critical of the social science PhD. The impetus for the review of the social science doctorate largely arose as it was unflatteringly measured against the natural sciences and engineering PhD model and decreed sub-standard by comparison, particularly in relation to completion rates (Rothschild, 1982; Swinnerton-Dyer, 1982). It is important to note, however, that the methodological basis of this comparison was hotly contested.

2.3.1.2 Massification of HE

As previously mentioned, in the 1980s and 90s the UK student numbers in higher education, both at undergraduate and postgraduate level and particularly on Masters degrees, increased rapidly (Burgess, 1996). This was the 'massification' of higher education. Accompanying this 'massification' was an overall higher degree of scrutiny relating to higher education costs and benefits. The Government Cabinet Office Paper (1993) 'Realising our Potential: a strategy for science, engineering and technology' stated that research training should: 'meet demands of wider economy, be relevant to business and industry and be 'cost effective' (cited in Collinson & Hockey 1997: 373). The underpinning logic of this policy was that in a situation of insufficient academic posts for all PhD graduates, then doctorates and accompanying research training should prepare students for employment beyond the academy. Although this Government Paper was about those subjects which are broadly speaking the Science, Technology, Engineering and Maths (STEM) subjects, its focus on linking academic learning to wider employment bore relevance to the social science doctorate and the new 'market focus' of higher education (Trowler, Saunders and Bamber, 2012, p. 1).

Funding of higher education institutions was used as leverage for higher education policy changes to be shaped in the desired manner. Swinnerton-Dyer (1982) recommended that Research Councils direct funding towards those universities who met the criterion of a 3-year (maximum 4-year) period for doctoral thesis submission, and advocated sanctioning institutions that did not. A maximum of 4 years remains the expected PhD thesis submission timeframe in place today. In

direct contrast with the past when universities were almost entirely publicly funded, Government funding drastically reduced and as a result universities increasingly relied upon private funding from charging students tuition fees and also on money brought in from research and consultancy, termed 'third leg' funding (Trowler et al 2012). International students are charged the highest tuition fees and the 1990s saw a large increase in their numbers to provide a university funding bonanza (Deem & Brehony 2000).

2.4 European level changes to the doctorate

At a wider European level there was also a desire to have greater harmonisation internationally between doctoral degrees. This would in turn enhance students' geographical mobility and make PhDs at particular institutions attractive to students internationally, ultimately increasing competition between institutions to attract overseas candidates who provide a valuable source of funding via their tuition fees (Park 2007). The Bologna Declaration 1999 was signed by 29 European countries, including the UK whereby they promised to reform their higher education systems in a sympathetic way, to provide greater convergence and harmonisation although being careful to state it was not providing standardisation of degrees across the countries. The Bologna Declaration was originally for undergraduate degrees but was extended to postgraduate degrees at the 2003 Berlin conference. A key aim of the Bologna Declaration was to increase "the international competitiveness of the European system of higher education" (Bologna Declaration 1999 cited in Leonard et al 2006, p. 4) by making degrees more harmonised across Europe, therefore, more attractive to other students worldwide by making what they delivered more of a known quantity.

> **'**Reforms in the UK form part of a wider European trend of policy changes in the direction of greater centralized control of postgraduate education (Gellert, 1993). They are geared toward the increased vocationalism of postgraduate education and situated within a discourse which emphasizes labour force targets, cost effectiveness and labour market need.' (Blume 1986 in Collinson & Hockey 1997 p. 378)

It is clear that broad structural changes in society of moving towards increased privatisation of public services and an intensified focus on value for money together with improving effectiveness and efficiency initiated by Government and responded to by research councils, shaped education

policy and how research methods are conceptualised as well as taught. Luker makes the general observation that:

> ‘The political, social, and historical context in which specific ‘research methods’ grew up, as well as the power relations among different kinds of stakeholders, have indelibly shaped what we have come to think of as ‘‘scientific” and “rigorous” research.’ (Luker 2008, p. 3).

Extending Luker’s (2008) view on research methods, I would argue that the ‘political, social and historical context’ of the doctorate has also shaped it, together with conceptions of what constitutes appropriate research methods training and how this should be delivered, as Luker identifies. As she notes regarding research methods, the views and ‘power relations’ between various stakeholders is also a highly influential part of shaping the social science doctorate. The various stakeholders, as shall be considered later in this chapter, are: universities and their staff, employers, Government, research councils / public bodies, the economy and indeed students / university graduates themselves both at undergraduate and postgraduate level and how these groupings interplay. The current form of the doctorate, and the formation of the DTCs and DTPs, are a crucial part of this ‘political, social and historical’ context.

2.5 Historical changes in work

I now turn to a consideration of the social construction of work, historical changes in work and its relationship to education. Principal types of work characterised each phase in society (Edgell, 2006) and our conceptualisations of work must be understood within the societal context of the time. Manufacturing and factory work typified the industrial capitalist society, whilst in the late modern period, the service industry is the flagship working sector based around providing services and exchanging information, knowledge and using technology with Bell’s (1974 [1973]) seminal work shaping understandings of this. This is now a post-industrial or informational society contextualised by global capitalism (Edgell, 2006) emphasising skills. This skills and qualifications-based recruitment agenda has gathered momentum over time, resulting in the present-day circumstances of higher education that needs to ensure employability. I shall briefly discuss Bell’s (1974 [1973]) theory of upskilling in post-industrial society, as this provides some key context for employment today.

2.5.1 Post-industrial society, Bell and employee upskilling

In essence Bell's (1974 [1973]) ideas on 'upskilling' were that theoretical knowledge, education and the possession of technical skill were central in post-industrial society. Bell conceptualised theoretical knowledge as leading to 'innovation and policy formation' (1974 [1973], p. 14). Bell's view of post-industrial society is characterised by: service provision with most employees working in the service sector; key skillsets being crucially located within scientific, technical and professional occupations; information generated via computers and technology as a fundamental resource; gaining 'capital' (resources / money) through education (Bell, 1974 [1973] cited in Edgell, 2006). Bell identifies that the service industry largely involves communicating and interacting with humans rather than human-machine interaction (ibid). The overall, guiding principle of Bell's upskilling thesis is the essentiality of theoretical knowledge and information within the service industry, as opposed to manufacturing goods which dominated in the industrial era (ibid) and that the professional, white-collar employee is of pivotal importance as they have the correct education levels and skill types for post-industrial society accessed via higher education. Bell's ideas are clearly significant to this thesis' topic due to my focus on the link between higher education and workplace skills. However, society has altered somewhat since Bell's writings as technology and more applied knowledge, as opposed to solely theoretical forms, and empirical research are of crucial importance within workplace skills and experiences and human-machine interaction is arguably just as important as human-human interaction within today's service industry.

2.6 Education, employability and skills

Constructions of the purpose of a PhD inevitably guide perspectives on what it should include and what the student experience of learning and conducting research should be like. Reviews of the British doctorate and resulting reforms (which sought to improve PhD completion rates, employability and the kind of training provided) were responding to fears regarding over-specialisation and whether the doctorate and its associated learning is relevant and whether PhD students gain sufficient 'skills' (Park 2007). The essence of this argument is that if postgraduates learn useful skills (including a range of research methods) then they will be more attractive to a wider spectrum of employers once they have graduated.

The skills-gaining agenda is not confined exclusively to postgraduate degrees, undergraduate students are also preoccupied with employability. Following their degree, students are thrust into

a highly-competitive labour market demanding more from employees such as increasingly sophisticated and wide-ranging workplace skills (Hassard, McCann and Morris, 2009). Yet contemporary society is characterised by job insecurity and requirements of flexibility. As Sennett (1998) argues, past ways of working were fixed, rigid, hierarchical and bureaucratic which is now constructed as being negative, 'rigid forms of bureaucracy are under attack, as are the evils of blind routine' (Sennett 1998, p. 9). Workplace rigidity is being replaced by new ways of working under '*flexible capitalism'* requiring adaptability as essential characteristics of the modern employee (ibid). This is a new dynamic working climate with 'choose your own adventure' style career biographies, of which the individual is seemingly master of their own destiny (Boltanski and Chiapello, 2018). However, concomitantly workers are expected by their employer to exhibit openness to change and risk-taking, 'Workers are asked to behave nimbly, to be open to change on short notice, to take risks continually, to become ever less dependent on regulations and formal procedures' (Sennett 1998, p. 9). With manifold and at times impromptu career changes during one's lifetime, uncertainty and employment insecurity inevitably arise.

> "Flexible capitalism has blocked the straight roadway of career, diverting employees suddenly from one kind of work into another…It is quite natural that flexibility should arouse anxiety: people do not know what risks will pay off, what paths to pursue….." (Sennett 1998, p.9)

Historically, higher education imbued students with prized levels of knowledge previously directly resulting in well-paid, post-degree professional employment, assuming this was indeed the student's desired outcome. Today the association between knowledge, HE and skills is less clear-cut, with some graduates employed in areas not specifically relevant to their degree. 'The decline of the established graduate career trajectory has somewhat disrupted the traditional link between HE, graduate credentials and occupational rewards.' (Brown and Hesketh, 2004 cited in Tomlinson, 2012, p. 421). The Dearing Report (1997) probed the association between university education and skills with critiques of the system being levied that HE institutions have failed to inculcate necessary employment skills (Archer and Davison, 2008 cited in Tomlinson, 2012). Yet there is a lack of agreement on exactly what constitutes appropriate employment skills across employers and graduates themselves (Tomlinson, 2012). As opposed to theoretical and highly academic disciplinary knowledge, 'applied learning and functional skills' (Tomlinson, 2012) tend to be championed. As is evident in the ESRC postgraduate guidelines (2005; 2009; 2015) more

generic work skills such ‘communication, teamworking, ICT and self-management’ are now expected to be gained during a university degree (Tomlinson, 2012), as well as discipline-specific ones, especially at postgraduate level.

Yet to what extent are university graduates experiencing improved employment-related economic rewards compared with non-graduates? Research provides mixed evidence to answer that question. Much of the research is on undergraduate outcomes. Some discussion of undergraduates in relation to employment prospects and salaries is presented here and a fuller discussion of undergraduates is provided on p. 78 – 85 regarding quantitative methods training, quantitative employment skills and deficits in these. Some, such as Elias and Purcell (2004) present largely good outcomes for undergraduates in relation to gaining employment and attracting higher salaries. They also note that graduates did utlilise ‘graduate skill sets occupation-specific expertise, managerial decision-making skills, and interactive, communication-based competences’ (Elias and Purcell, 2004 cited in Tomlinson, 2012, p.416). Elias and Purcell (2004) report one negative finding that female graduates tended to have lower salaries and a narrower range of occupational prospects, working primarily in the public sector. Overall, undergraduates tend to gain employment in a wide variety of occupations, and their career paths are flexible and diverse, thus as a result so are their experiences and outcomes (Tomlinson, 2012; Elias and Purcell, 2004).

Other research evidence indicates a gloomier prospect for undergraduates with many not achieving higher salaries than non-graduates (Green and Zhu, 2010). Over-education and under-employment, whereby an employee is more highly qualified and skilled than is actually needed to perform a particular job that strictly speaking does not actually require a university degree (Chevalier and Lindley, 2009), also figures substantially within this debate. Moreover, undergraduates’ socio-economic status determines job outcomes as those within higher socio-economic classes who attended elite universities typically enjoy larger salaries and loftier employment status (Green and Zhu, 2010). This is partly a factor of employers’ prejudices whereby they favour graduates from particular, typically elite, highly-regarded universities with ‘reputational capital’ (Brown and Hesketh, 2004) as well as the elevated social and cultural capital those graduates tend to possess (Tomlinson, 2012). Research indicates that the matching of graduates to graduate-appropriate jobs is especially deficient in the UK, USA and Australia compared with other European countries that control this considerably more (Hansen, 2011). In the UK, with its ‘intensive competition, deregulation and lower employment tenure’ (Tomlinson, 2012, p. 417) graduates have a higher propensity to be under-employed. Tomlinson (2012) projects that this

situation will persist if employment structures are not 'upgraded' (p 417) to accommodate the expansion of graduate numbers and improve the fit between education levels and the level of job challenge and fulfilment.

Graduates are painfully aware that their occupational futures are unlikely to be struggle-free after leaving university. No longer are degrees sufficient to ensure well-remunerated employment as numerous others also possess them, thereby diluting what was previously a strong 'intellectual and academic capital' (Bourdieu, 1990).

> 'For graduates, the inflation of HE qualifications has resulted in a gradual downturn in their value: UK graduates are aware of competing in relative terms for sought-after jobs, and with increasing employer demands.' (Tomlinson, 2012, p.420)

Undergraduates also accept personal responsibility for attempting to gain appropriate employment via 'astute planning, preparation and foresight' (Tomlinson, 2012, p. 419) and ensuring ongoing continued professional development throughout their working lives in an effort to elevate themselves above the masses and gain 'positional advantage' (Tomlinson, 2012, p. 420). Thus, accountability for ensuring a suitable career is transferred to the individual rather than employment organisations, linking strongly with Beck's theoretical concepts of 'individualized institutional situations' and a 'self-reflexive' (Beck, 1992, p. 135; 137) or 'do-it-yourself' biography (Gross 1985 cited in Beck, 1992, p. 135). University graduates perceive any successful job outcomes as at least partly due to their personal characteristics, internalising their 'individualised discourses' (Moreau and Leathwood, 2006). Graduates facilitating their own career and employability is seen as part of 'discourses of self-responsibilisation' (Tomlinson, 2007 cited in Tomlinson, 2012, p. 420), even whilst cognisant of the potential effects of inequalities conferred by demographic differences such as social class. Yet Moreau and Leathwood (2006) contend that structural factors and demographic social inequalities relating to class, gender, age, race as well as the perceived status of the university attended remain influencing factors for job outcomes. Ignoring such social inequalities in the 'discourse of employability' in favour of solely personal responsibility is likely to mislead (Moreau and Leathwood, 2006). Some research drawing on Bourdieusian ideas indicates that working-class graduates acknowledge they may not hold the standard cultural and social capital to gain entry to particular job positions and that class inequalities exist in this (Greenbank, 2007) and are aware that employers make judgements regarding 'appearance, accent and cultural code' (Smart et al 2009 cited in Tomlinson, 2012, p. 424).

Within such a climate of fierce competition and the need to ensure personal employability, how might graduates surmount these obstacles to a successful career? Brown and Hesketh (2004) propose that graduates seek to possess and utlilise both 'hard currencies' such as their academic qualifications and 'soft currencies', interpersonal and cultural characteristics. Bourdieu's human and cultural capital has arguably become only part of the jigsaw puzzle for career success, 'personal capital' comprising individual, conduct-related and relational qualities is now seen as significant (Tomlinson, 2012; Brown and Hesketh, 2004). Not all graduates are imbued with the requisite personal capital to efficaciously counter the current challenging economic climate. '*Players'* have strengths in reacting competitively and flexibly and turning the situation to their advantage, whereas '*purists*', who cling more intensely to academic qualifications as the main source of success, typically fare less well (Brown and Hesketh, 2004). Graduate students' identities envisaging themselves as a future employee are frequently shaped by how their experiences unfold at various study and career stages. Positive or negative experiences can bolster or unsettle evolving workplace identities and resilience to 'potentially destabilising experiences' feature as important in acquiring the 'affirmed and legitimated' identity associated with success throughout one's career (Tomlinson, 2012).

Many graduates realise that they must offer something extra to shine among a sea of people with university degrees. Pursuits beyond solely academic learning such as internships and voluntary/community work are frequently engaged in to demonstrate leadership, teamworking and communication skills to prospective employers (Brooks and Everett, 2009). 'Careerist' students typically gain individual satisfaction from work-related successes and proactively seek to improve their employability, other graduates position this as relatively less important in their lives (Tomlinson, 2007). Congruence between the concepts of 'careerists' and 'instrumentalist' motivations for PhD study is clear.

Research examining the issues of graduate skills sometimes focuses on 'supply-side' perspectives that is on the HE institutions being tasked with inculcating students with employment-relevant skills. The skills and abilities learned at university, even if endeavouring to be appropriate for later employment, do not necessarily map directly onto what employers seek for each job and what graduates experience in the workplace (Tomlinson, 2012, p. 424) especially regarding quantitative methods skills (MacInnes, 2009; Byrne, 2012). There can be a role for employers also to facilitate graduates' transition into the workplace by providing the opportunities for them to hone the skills they learned at university (Tomlinson, 2012). Yet although employers state they seek graduates

who possess certain skills, within a context of an over-supply of graduates in general, they are in a position to be highly selective. However, this selectivity is not the case regarding all types of skills as there remains a quantitative skills deficit among graduates. Consequently, candidates possessing high levels in quantitative skills are rarer and more highly sought after. Thus, the principle of employer selectivity does not apply regarding graduates with quantitative skills. However, regarding the overall graduate pool, the debate returns to employers' preferences for graduates who exhibit certain cultural behaviours and those who have particular 'values, social awareness and generic intellectuality' cited in (Hinchcliffe and Jolly 2011 cited in Tomlinson, 2012, p. 425) and who attended elite institutions.

2.7 ESRC's social science PhD and research training vision – scholarship to training model doctorates 1990s

From the late 1980s the ESRC progressively considered what the social science doctorate should consist of and what its overall intention should be both for students and for society more broadly. The learning content within doctorates was increasingly spotlighted and the ESRC organised a two-stage process to decide how doctorates should ideally be structured. Stage 1 of the process consulted academic specialists, relevant societies and bodies via circulating the 'ESRC Discussion Paper for Research Training in the 1990s' (1989) and inviting feedback on what social science PhD training should optimally include. Taking academics' and relevant bodies' comments into account, the ESRC published their 'Postgraduate Training Guidelines' in 1991 communicating their perspective on appropriate content and level of doctoral research training and the requisite skills and competencies for students to become 'professionally (research) trained' (McKendrick and McCormick, 1993). A key element in those guidelines included the ESRC's expectations for formal research training with a significant proportion being frontloaded within year 1 of the PhD (up to 60% of the total time) and 10% in each of years 2 and 3 thereafter. Yet, the ESRC maintained that each university could exercise judgement on individual students' existing levels of knowledge and skills, granting training exemptions where considered appropriate. Some degree of formal assessment of students' research methods abilities by universities was expected to occur. Another key component in the guidelines was increasing the possible maximum funding period from 4 to 5 years (1-year Masters and 3-year PhD plus 1 additional year) to provide flexibility for second language training and/or international fieldwork, where required.

In stage 2, University departments were then invited to apply to become ESRC recognised as

providing appropriate research training for doctoral students. Seventy-nine percent of university departments were successful in their applications in the 1992 ESRC 'Recognition Exercise', with 69% of these deemed suitable to provide appropriate research training for the full thesis period[iv] (termed Mode A), not solely years 2 and 3 of the PhD (termed Mode B) (McKendrick and McCormick, 1993).

Further sets of guidelines from the ESRC were produced in 1993 and 1996. Similarly, to the 1991 guidelines, the ESRC again stipulated that up to 60% of the 1st year of the PhD provided research methods training for their funded social science doctorates (ESRC 1993a; 1996). Yet the focus extended beyond solely ESRC-funded students with the ESRC's expectation that *all students* would engage in research training (ESRC 1996) as well as endorsing that training should be both compulsory and formally assessed (Collinson & Hockey 1997). This signalled the move from the scholarship model to a training model PhD (Deem & Brehony 2000). As MacInnes argues, "doctorates were mainly artisanal affairs with little attention to systematic training until the reforms of the 1990s" (2014, p. 1). There was an increased professionalisation, formalisation and vocationalisation of the doctorate with changes intended to: mitigate postgraduate students' isolation; offer a broader range of postgraduate courses; improve submission times and completion rates and more tightly organise how research methods training was planned and delivered (Burgess, 1996). Additionally, institutions and supervisors were more closely monitored, and quality assurance frameworks were put in place. For example, the Quality Assurance Agency for UK Higher Education in 1999 code of practice was introduced for research degrees and a consultation on national qualifications framework for postgraduate work took place (Deem & Brehony 2000).

2.7.1 Establishing Doctoral Training Centres (DTCs), Doctoral Training Partnerships (DTPs) and Centres for Doctoral Training (CDTs) – 2011 to present day

It is apparent that the ESRC had been increasingly concerned about postgraduate research training since the 1980s and has produced various sets of guidelines and publications outlining their vision for the formalisation of doctoral research training. From 2005, however, the guidelines mark a move towards the ESRC delegating increased responsibility for training delivery (although not the overall training framework) and later doctorate administration from 2011 when the DTCs were established to those higher education institutions (termed outlets) that met research training

criteria and thus gain ESRC recognition (2005, p. 9). Each higher education institution could contain several training outlets, frequently at university departments, school or centres level. Postgraduate funding was offered in 3 key ways up until 2010: 1. recognised outlets were granted a fixed number of ESRC nominated studentships which they then awarded to students, 2. a national open competition whereby universities proposed additional scholarship candidates whose applications were assessed by the ESRC and 3. CASE studentships with co-funding by non-academic institutions and the ESRC. Representing a major shift from this funding structure, the 2009 training guidelines invited universities' bids to become part of DTCs and Doctoral Training Units (DTUs) initially, and more recently in the 2015 guidelines DTPs. Funding and decision-making around awarding studentships was devolved completely to the recognised centres, units and later partnerships. In the 2009 guidelines, potential DTC candidates were invited to outline their proposals to meet the training guidelines framework, what they could offer as an institution, as well as identifying any areas they needed support and setting out an action plan to address these. However, the DTCs were established during lean economic times, therefore, some argue this may have affected how fully they were able to realise all of their aims and intended outcomes (Budd *et al.*, 2018). The ESRC had experienced Governmental cuts to their budget, thus discharging the administrative workload of doctoral studentships to universities whilst continuing to solely provide PhD funding offered a potential economic solution (Lunt *et al* 2014 cited in Budd *et al* 2018, p. 19).

The ESRC outlined the criteria by which applications to become a DTC would be judged, in section D of the guidelines. Twenty-one DTCs were set up. In practice, no Doctoral Training Units (DTUs) were awarded funding as the ESRC stated that the applications were judged not to meet the required standard. Some, however, view the non-funding of the DTUs rather differently and believe it was more due to the unanticipated decrease in available funding that the ESRC had between inviting the DTC and DTU proposals and these being created (Budd *et al.*, 2018). Whatever the reason, the outcome of the DTUs ultimately not being established was that substantially fewer post-92 universities were successful in becoming ESRC recognised training centres than if the DTUs had been developed, as the DTU applications contained many post-92 institutions. As shall be discussed in the thesis results chapter reporting on interviews with experts, there were, however, some casualties of the establishment of DTCs. Inevitably selection had to be made by the ESRC as to which academic institutions were successful in becoming DTCs, according to the quality of the research training provision and resources that they could offer to prospective doctoral

students. Especially interesting, however, is that DTC establishment in 2011 cut the number of universities eligible to host ESRC-funded PhD students from 86 to approximately half (Budd *et al.*, 2018; Bartholomew *et al.*, 2015). When examined in relation to the above point about lean economic times, this is perhaps hardly surprising. It is worth noting, however, that not all types of universities were equally among those chosen to become DTCs. Post-92, newer universities, which tend to have a larger demographic of students from less advantaged backgrounds, were far less represented among DTCs (Budd *et al.*, 2018). According to Deem's foreword in (Budd *et al.*, 2018) non-DTC universities perceive themselves as being 'outside the golden circle' (p.2).

> 'Further concentrating research in elite universities may, therefore, have the ongoing effect of making (social science) doctoral study more socially exclusive.' (Budd *et al.*, 2018)

Bartholomew (2015) similarly notes that the barriers between DTC and non DTC universities are not easily overcome and that this prevents the initiative from being as successful as it otherwise might have been, especially in terms of collaboration and consortia building. As will be discussed further below, establishing the DTPs has sought to address what was seen by some as some failings of the DTC initiative, in particular the lack of a wide reach that included post-92 universities and the challenges of fostering collaboration between institutions. Budd *et al* (2018) present a fourfold typology of academic institutions according to the ESRC DTC and DTP establishment policy. Firstly, 'insiders' (in-in-in) who remained ESRC doctoral studentship funded throughout all policies and time periods (for example the University of Edinburgh, the research study site for this thesis), secondly, 'returners' (in-out-in) who were not ESRC funded under DTC policy but became part of a DTP and regained this, thirdly 'leavers' (in-out-out) whose doctoral funding eligibility was withdrawn in 2011 and not reinstated and fourthly, 'outsiders' (out-out-out) whose ESRC eligibility was removed from at least 2010. As highlighted above, stark differences in pre and post-92 institution representation in both the DTCs and being within the 'insider' or 'returner' category is manifest. 90% of pre-92 universities were either 'insiders' or 'returners' and only 2 Russell group elite universities did not become part of a DTC. The size and age of pre-92 universities is important; older institutions from before 1960s are approximately 3 times as likely to be within the 'insider' category than their younger and smaller pre-92 counterparts.

Once the DTCs were established, bids were invited from academic institutions to form DTPs that were to commence in 2017, 6 years following the creation of the DTCs. Budd *et al.* (2018) propose that some of the omission of post-92 institutions in creating DTCs highlighted above, was partly

addressed by establishing DTPs which had a broader scope and the number of ESRC eligible universities increased by more than 50% to 73 (p. 20). As DTP policy is dynamic, in that more institutions can join if judged to be appropriate, then this number may increase. However, Budd *et al.* (2018) argue that post-92 universities remain largely excluded by the overall move to DTCs and DTPs.

> "Although the DTP policy allowed a broadening of the ESRC-eligible HEIs (indeed the ESRC explicitly encouraged it), we have not seen a recovery to the levels of 2010. It is also evident that this loss of eligibility overall has been felt far more acutely in the post-92 group" (Budd *et al.*, 2018, p. 21)

Relating to the above, it is imperative to note that smaller, less well-resourced and newer HEIs can as a result find themselves unable to compete with larger, older established and better-resourced HEIs. The ESRC have greatly encouraged having a 'critical mass' of postgraduate and doctoral students, which means that there is a sufficient number of students to network, facilitate peer support and engage in 'cohort building' in an effort to mitigate the previously identified problem of doctoral student isolation. Thus, the larger HEIs which have tended to be more successful in becoming DTCs, have been able to offer a critical mass, with comparatively larger postgraduate student numbers including some funded studentships. This set of circumstances, of course, develops into a vicious circle; as fewer students attend a particular HEI there is a diminishing 'critical mass' and thus the institution becomes increasingly less likely to become a DTC or equivalent in the future. This echoes Budd *et al's* (2018) 'outside the golden circle' perspective which they argue is experienced by the excluded post-92 HEIs. Notwithstanding this, the ESRC had to make decisions of either spreading their studentships thinly across all HEIs or instead opting for with a degree of concentration. It is understandable that in circumstances where achieving a critical mass and reducing student isolation are desired outcomes that they have decided upon the latter.

The successful DTPs were announced on the ESRC website, and 14 DTPs across the UK were formed in 2016/17. These offered places for postgraduate students from October 2017 and a total of 500 ESRC funded studentships were offered via the DTPs per year (representing a reduction from the previous 600 studentships per annum).

2.7.2 ESRC funding and research training guidelines: 2005, 2009 and 2015

The section below will provide an overview of the key points of the 2005, 2009 and 2015 ESRC Guidelines looking across the guidelines as well as highlighting any major differences between them and commenting on each publication individually, where appropriate.

After the foreword, all 3 sets of recent guidelines (2005, 2009, 2015) contain relatively similar sections. The location of specific content varies across guidelines, yet certain elements are common to all. Each publication typically begins by outlining the aim and purpose of the guidelines overall which is to communicate the ESRC's vision for postgraduate training and guide 'Research Organisations' (ROs) in training requirements. The ESRC expectations for training provision outcomes, that is to produce professional postgraduate researchers who are 'fully trained and competent' (2015, p. 4) and can have research careers or contribute to society in a different manner, is delineated. Flexibility in postgraduate programmes such as funding periods and whether a postgraduate degree is the more standard 1+3 (1-year Master and 3 year PhD) or for example newer packages such as 2+2 (2-year extended Masters and a shorter 2 year PhD) or +4 (up to 4 years PhD), part-time or full-time, the timing of training, flexibility in modes of training delivery including online and collaboration between universities and non-academic organisations in training provision are all sketched out. The largest component of each guidelines' publication discusses expected training content. This typically focuses around: core qualitative and quantitative research methods training in research design, collection and data analysis; core subject-specific training; advanced training; transferable skills such as communication, networking, leadership and research/relationship management; generic research skills for example bibliographic and computing, teaching, language, user engagement and research impact, understanding of ethics, legal issues and research and intellectual property rights (IPR).

All guidelines also tend to discuss anticipated research training delivery, any specific organisational and working arrangements for new bodies (such as Doctoral Training Centres in the 2009 and Doctoral Training Partnerships in the 2015 guidelines), how studentship funding is managed and administered, standards, facilities and resources for students, postgraduate student supervision arrangements and finally monitoring by the ESRC of arrangements with Research Organisations (ROs).

Figure 1 below presents a summary of the key topics covered across most of the ESRC guidelines.

Figure 1: Summary of key content in ESRC Training Guidelines 2005, 2009 and 2015
Chief Executive's Foreword (2005 and 2009 only)
Guidelines' Purpose: set out ESRC expectations of institutions regarding postgraduate training, ESRC mission statement / strategy
Training Provision: outcomes, flexibility in training delivery and postgraduate 'packages' / degree types; training content (see detail below)
Training Content:
• **Research Training:** core qualitative and quantitative research methods training in research design, collection and data analysis; core subject-specific training; advanced training
• **Other Training:** 1. Transferable skills such as communication, networking, leadership and research / relationship management; 2. Generic research skills for example bibliographic and computing, teaching, language, user engagement and research impact, understanding of ethics, legal issues and research and intellectual property rights (IPR)
Training Delivery: organisational working arrangements collaboration; funding / studentships allocation; supervision; facilities / resources expectations
Monitoring Arrangements: of ROs by ESRC including - widening participation and submission rates

The section below charts a few areas in which each set of guidelines differs on some specific content.

2.7.2.1 ESRC Guidelines 2005

These guidelines applied from summer 2005 regarding ESRC recognition and from October 2006 for new studentships.

The publication specifically discusses the term research training outlet which is: "collections of people and facilities brought together to deliver the research training specified in the Guidelines."

(2005: 8). As mentioned above in the section on the ESRC studentship funding process, outlets could be at university school, department or centre level.

Section C outlines the ESRC's 'criteria for recognition' for higher education institutions to become ESRC recognised at providing appropriate postgraduate research training, facilities and provision for students. Key criteria of appropriate training are: "adequacy of provision of formal, broadly-based and subject-specific training for students in research methodologies and transferable employment-related skills, and the arrangements for the provision of advanced training." (2005: 12). In terms of facilities and provision this comprises: suitable study spaces, internet, computing and library access, suitable technology and IT support, locations for networking and meeting peers. Appropriate provision for students with disabilities is also stipulated. High-quality postgraduate supervision is also highlighted as a fundamental requirement.

The final key point of difference in the 2005 publication compared with the others is that guidelines for specific subjects and disciplines are provided in Section F, on the kinds of topics covered by that discipline, anticipated prior background knowledge and qualifications of prospective postgraduate students and appropriate research training for that discipline. Appendix 1 offers information on supporting part-time and distance learning students, Appendix 2 discusses professional doctorates and Appendix 3 provides the joint statement of research councils / AHRB skills training requirements for research students.

2.7.2.2 ESRC Guidelines 2009

The requirements and changes to postgraduate programmes outlined in the guidelines applied from September 2009 for applications for ESRC DTC accreditation, and from October 2011 for new ESRC postgraduate studentships.

Three key differences in the 2009 guidelines compared with the others are the inclusion of sections on the ESRC Strategy for the Social Sciences, the ESRC 'Framework for Postgraduate Training and Development' and the 'Criteria for Doctoral Training Centres and Units' in sections B and D respectively.

2.7.2.2.1 ESRC Strategy for the Social Sciences 2009

Some key points of the 'ESRC Strategy for the Social Sciences' are: that the ESRC conducted a 'demographic review' of the social sciences and found that 6 disciplines (Language Based Area

Studies, Economics, Education, Management and Business Studies, Social Work, Empirical Studies in Law) needed enhanced research capacity [v]although other disciplines will also be assisted in this way. The ESRC also detected a deficit in quantitative methods skills. The ESRC strategy also highlighted the importance both of inter-disciplinarity and the provision of research training that is relevant across a range of disciplines as well as discipline-specific training and also the ESRC's commitment to investing in 'high quality data sources' such as longitudinal and big data.

Finally, a fundamental singular point in the 2009 guidelines compared with the others is stated in the overall aim of the ESRC via the postgraduate training framework and creating the new infrastructure of university Doctoral Training Centres. The purpose was to prevent stifling training innovation and enhance 'good practice in core skills and methods training within and across institutions, and the deeper vertical integration of such skills and methods training with subject-specific training' (2009: 4). As such a solid basis of quality methods training would be offered by universities which would also be combined with that relevant to particular subjects.

2.7.2.2.2 ESRC Framework for Postgraduate Training and Development 2009

This was a framework for accrediting research postgraduate training at higher education institutions. On pages 5-9 of the 2009 guidelines, the framework set out the process for establishing ESRC Doctoral Training Centres (DTCs) and Doctoral Training Units in HEIs, although as outlined earlier ultimately only the DTCs were created. The process for inviting applications from prospective DTCs and for establishing these was already presented above and shall not be outlined again here.

The overall purpose of the ESRC framework for accrediting postgraduate training and creating DTCs was to develop a 'national training infrastructure' (p. 5) that would communally provide required training for social scientists whilst harnessing inter-disciplinarity to solve 'key social and economic challenges' (p. 5). A large emphasis in the framework is placed on the collaborative aspect of postgraduate training delivery. Although academic institutions were expected to demonstrate their competence in providing high quality training on an individual basis, offering training more widely to students in other universities was also a central aspect of the creation of the training infrastructure, especially regarding training in more specialised or innovative methods. Institutions that wished to become DTCs would be required to offer postgraduate training that enhanced 'national capacity building priorities (p. 5), for example in individual disciplines, inter-

disciplinary or ameliorating national shortage areas such as quantitative skills. The ESRC agreed to have a facilitatory role in identifying where institutions could collaborate, forge link and impart training information. All institutions in the UK excepting Northern Ireland (whose students should apply to the 'Department for Employment and Learning) were entitled to submit a DTC application.

2.7.2.2.3 Criteria for assessing ESRC DTC / DTU applications: 2009 guidelines

The framework set out the rationale behind creating a new postgraduate training infrastructure comprised of collaboration between individual-level universities becoming DTCs, but how were applications to become a DTC to be evaluated? DTC application assessment was according to meeting the following criteria (outlined in section D pages 14–18 of the 2009 guidelines): demonstrating a transparent strategy for postgraduate training focused around meeting the ESRC's objectives (such as quantitative skills shortages and enhancing the identified disciplines in need of capacity building for example, economics; building diversity in postgraduate degree access; providing appropriate and quality training in terms of content, range, level including inter-disciplinarity and innovation; providing suitable resources and supervision and ensuring meeting submission rate targets (60% of students submitting their PhD within 4 years).

As shown in Table 1 below, 21 DTCs were established in 2010, which comprised 45 institutions.

Table 1: Doctoral Training Centres (DTCs) - established 2010

	Name of Doctoral Training Centre / Consortium	**Lead Institution**	**Collaborating Institution(s)**
1.	Birmingham	University of Birmingham	-
2.	Bloomsbury Consortium	Institute of Education	Birkbeck College University College London, School of Oriental and African Studies
3.	Cambridge	University of Cambridge	-
4.	Essex	University of Essex	-
5.	Kings College London	Kings College London	-
6.	London Business School	London Business School	-

7.	London School of Economics and Political Science	London School of Economics and Political Science	-
8.	North East Consortium	Durham University	Newcastle University
9.	North West Consortium	University of Liverpool	Lancaster University University of Manchester
10.	Nottingham	University of Nottingham	-
11.	Oxford	University of Oxford	-
12.	Queen Mary and Goldsmiths	Queen Mary and Goldsmiths	-
13.	Scottish Consortium	University of Edinburgh	Edinburgh Napier University Heriott-Watt University Robert Gordon University University of Aberdeen University of Dundee University of Glasgow University of St Andrews University of Stirling University of Strathclyde
14.	South East Consortium	University of Surrey	Royal Holloway University of Kent University of Reading
15.	South West Consortium	University of Bristol	University of Bath University of Exeter
16.	Southampton	University of Southampton	-
17.	Sussex	University of Sussex	-
18.	University College London	University College London	-
19.	Wales Consortium	Cardiff University	Aberystwyth University Bangor University Swansea University
20.	Warwick	University of Warwick	-
21.	White Rose Consortium	University of Sheffield	University of Leeds University of York

2.7.2.3 ESRC Guidelines 2015

The requirements in the 2015 guidelines applied from September 2015 for proposals for ESRC Doctoral Training Partnerships (DTPs) and Centres for Doctoral Training (CDT) and from October 2017 for all new ESRC-funded studentships.

Key differences in the 2015 guidelines compared to its predecessors are that although the information on core research skills is similar it is more detailed and specific on the kinds of capabilities that the ESRC feels should be gained by students. For example, regarding research design the 2009 guidelines state that postgraduate students should have 'comprehension of basic principles of research design' (p.18) as part of their training. The 2015 guidelines, however, specifically set out the kinds of capabilities that the ESRC feels should be gained in learning research design. For example, to 'understand the relationship between empirical research and theory generation and testing' (p. 8) and 'understand and apply the concepts of generalisability, validity and replicability' (p.8) as well as different forms of 'sampling, sampling error and case selection' (p. 8). Specific ESRC expectations around 'the principles of research design' and 'data collection, analysis and management' are set out on pages 8–10 of the 2015 publication. Additionally, there is a new ESRC 'Postgraduate Training Strategy' for 2017–23. The guidelines invited proposals for the establishment of Doctoral Training Partnerships (DTPs) and Centres for Doctoral Training (CDTs) which would 'deliver specialist training in focused thematic interdisciplinary research areas' (p. 20) with a non-academic organisation, which are different from DTCs and DTPs and CDTs replaced the DTCs.

Section C of the guidelines presented expectations for DTPs and CDTs on pages 17 – 22 which included that although research training accreditation would continue to be at Research Organisation (RO) level, again collaboration between institutions on training delivery was expected. Institutions that wished to be ESRC accredited needed to satisfy criteria of the base threshold levels (of at least 50% 3*+4* REF output, environment and impact) from the Research Excellence Framework 2014 (REF). It was also imperative that DTP proposals were multi-disciplinary, collaborative between academic organisations and also encourage non-academic collaboration.

As shown in Table 2 below, 14 DTPs were established in 2016, which comprised 73 institutions.

Table 2: Doctoral Training Partnerships (DTPs) - established 2016			
	Name of Doctoral Training Partnership	**Lead Research Institution**	**Collaborating Research Institution(s)**
1.	Cambridge Social Science Doctoral Training Partnership	University of Cambridge	-
2.	Grand Union Doctoral Training Partnership	University of Oxford	Open University Brunel University London
3.	The London Interdisciplinary Social Science Doctoral Training Partnership	King's College London	Queen Mary, University of London Imperial College London
4.	LSE Doctoral Training Partnership	London School of Economics & Political Science	-
5.	Midlands Graduate School Doctoral Training Partnership	University of Warwick	University of Nottingham University of Birmingham Loughborough University Aston University University of Leicester
6.	Northern Ireland and North East Doctoral Training Partnership	Durham University	Newcastle University Queen's University of Belfast University of Ulster Northumbria University Teesside University University of Sunderland
7.	North West Social Science Doctoral Training Partnership	University of Liverpool	The University of Manchester Lancaster University Keele University
8.	Scottish Graduate School of Social Science (SGSSS) Doctoral Training Partnership	University of Edinburgh	University of St Andrews University of Dundee Glasgow Caledonian University Edinburgh Napier University Heriot-Watt University Queen Margaret University Edinburgh University of Aberdeen University of Stirling University of Strathclyde University of Glasgow SRUC

9.	The South Coast ESRC Doctoral Training Partnership	University of Southampton	University of Portsmouth University of Brighton
10.	The South East Network for Social Sciences (SeNSS) Doctoral Training Partnership	University of Essex	City University London University of East Anglia Goldsmiths College University of Kent University of Reading Roehampton University Royal Holloway, University of London University of Surrey University of Sussex
11.	South West Doctoral Training Partnership	University of Bristol	University of Bath University of Exeter University of Plymouth University of the West of England
12.	University College London, Bloomsbury and East London Doctoral Training Partnership	University College London	School of Oriental & African Studies Birkbeck College London School of Hygiene and Tropical Medicine University of East London
13.	ESRC Wales Doctoral Training Partnership	Cardiff University	Swansea University Bangor University Cardiff Metropolitan University University of Gloucestershire Aberystwyth University
14.	White Rose Social Sciences Doctoral Training Partnership	University of Sheffield	University of Leeds University of York University of Bradford University of Hull Manchester Metropolitan University Sheffield Hallam University

The sections above have detailed the key differences in the process, training infrastructure and application process and expectations for the DTCs, DTPs, CDTs etc. One such difference that it is important to highlight is that under the DTP training provision arrangements, postgraduate social science students are required to study both quantitative and qualitative methods. Under the DTC training arrangements, whilst this was encouraged and deemed desirable it was not stipulated as

being required. Consequently the creation of the DTPs and their associated training infrastructure involve a marked expansion of what a student is required to do, especially in disciplines such as economics and social anthropology whose students must now study some level of qualitative methods regarding the former and quantitative methods regarding the latter, even when these methods sit outside of the usual methodological spectrum of these disciplines. It is important to recognise that some argue this places an unnecessary burden on 'stretched' students, a concept which I shall further elucidate later in this thesis.

For ease of reference, Table 3 below summarises the key similarities and differences between the DTCs and DTPs that have been described in the above sections.

Table 3: Key similarities and differences between Doctoral Training Centres (DTCs) and Doctoral Training Partnerships (DTPs)

DTCs (formed 2010, ESRC training guidelines 2009)	**DTPs (formed 2016, ESRC training guidelines 2015)**
Postgraduate Training Agenda	
Purpose: to create and develop a national postgraduate training infrastructure	Same
Offer training in innovative or specialised methods to students in other institutions	Same
Address quantitative skills gaps	Same
All postgraduate social science students encouraged to study both qualitative and quantitative methods	All postgraduate social science students required to study both qualitative and quantitative methods (e.g. economists study some qualitative methods, social anthropologists study some quantitative methods)
Build capacity and enhance training in particular disciplines ESRC identified as requiring input (Language based area studies, economics, education, management and business studies, social work and empirical studies in law)	Same

Encourage innovation in training content and delivery	Same
Enhance 'good practice in core skills and methods training within and across institutions	Same
Improved integration of core skills and methods training with subject-specific training	Same
Training Centre Formation Policy	
Formed from several academic institutions with a lead university [1]	Comprise not only academic institutions but also non-academic organisations
Static policy – once DTC formed cannot change	Dynamic policy – once DTP formed other institutions can join
Limited inclusion of post-92 newer universities	Widened participation and more inclusion of post-92 universities
Emphasis on collaboration and interdisciplinarity	Same
PhD studentships administration primarily devolved to institutions from ESRC[2]	Same

To also assist the reader in gaining an appreciation of the principal training expectations content of each set of guidelines at a glance, a table comparing ESRC requirements for core research, subject-specific, and advanced training, as well as those for general and transferable skills in the 2005, 2009 and 2015 guidelines is provided in Appendix 3**.**

Highly relevant to this thesis, is Budd *et al.* (2018's) recent study into the impact of the DTCs in the UK comprising 60 qualitative interviews (30 senior academics / management staff / 30 PhD students) involving 30 different universities across all 4 countries in the UK (Scotland, England, Northern Ireland and Wales) and secondary data analysis on PhD completion rates and student populations. Eight of the institutions were part of DTCs, 10 were non-DTC pre-92 and 10 post-92

[1] Although the ESRC intended collaborative DTCs (made up of more than one academic institution) in practice there were some single institution DTCs, in the first round of DTC formation in 2010.
[2] Although the administration of ESRC PhD studentships was largely devolved to the universities, the ESRC maintained an active monitoring role via mid-term reviews.

universities[vi] (Budd *et al.*, 2018). The fieldwork with staff was carried out in two phases, summer 2016 when the DTP applications were being submitted and in early 2017 when the successful DTPs had been announced and were being created.

2.8 DTCs' impacts and creation of DTPs – Budd et al (2018)

Having examined the rationale underpinning the creation of the DTCs and DTPs and the process of establishing these, there will be an examination of the assessed impact of DTCs both positive and negative. Some of these have already been mentioned earlier such as arguments made that DTC policy favours pre-92 institutions over post-92 and thus inadvertently excluding postgraduate students from lower socioeconomic groupings from being part of a DTC. Budd *et al* (2018) endeavored to investigate whether establishing DTCs had impacted upon PhD awards. They attempted to do this by scrutinising HESA (Higher Education Statistics Agency) statistics on PhD awards 2008-2017 data, however, this means of analysis was potentially flawed as shall be outlined below. According to HESA data, nearly 35,000 social science PhDs (in Social studies; Law; Business and Administrative Studies and Education subject areas) were awarded 2008-2017, 83% of these were from pre-92 universities (over 29,000) and only 17% from post-92 ones. There has also been an increase overall in the number of PhDs awarded in the UK (not just social science ones) from 17,425 in 2008/09 to just under 24,000 in 2016/17 (Budd *et al.*, 2018). Budd *et al* (2018) acknowledge that the HESA social science subject areas do not map exactly onto the potential ESRC PhD funding disciplines and subjects, although they argue these provide a reasonable proxy. The validity of this analysis is debatable however, as firstly HESA statistics do not identify which of the PhD awards were to ESRC funded students and secondly, Budd et al (2018) did not examine PhD awards by institutions within DTCs or DTPs within the time period, to see whether these had increased. Thus, I would argue that the results discussed by Budd *et al* (2018) on PhD awards do not reveal very much regarding the impact of DTCs. Budd et al (2018) also acknowledge that it is difficult for them to actually demonstrate any DTC effect from HESA figures.

An important aspect to take account of when evaluating the introduction of any new service or policy, is that this must be conducted at a timing that is meaningful for showing any potential impact or change. In the case of the DTCs, these were created in 2011, therefore the first possible intake of postgraduate students exposed to the new DTC training regime was also in 2011. PhD students commencing in 2011 would complete their degree either in 2014, if completing in 3 years, or 2015

(if they required a further writing up year). 1+3 Masters and PhD students would not complete until 2015 or 2016 (again if a further writing up year was needed). In addition to this, some students study part-time, others go on 3-month work placements and some require suspensions to studies due to ill health, parental leave, unexpected circumstances etc. Taking all of this into account, the numbers of completing PhD students for whom there would have been meaningful data to assess for DTC training impact would have been rather small. DTCs were, therefore, succeeded by DTPs in 2017 before any reasonable assessment of their effectiveness, at least in terms of potential impacts on completion rates, was possible.

2.8.1 Academic staff views on DTCs

From qualitative interviews with 30 academic staff in DTCs, Budd et al (2018) found that they were overall supportive of idea of the DTCs in principle. Potential benefits included that DTCs could increase collaboration, enhance networks as well as facilitate good practice and knowledge sharing in teaching and training (p. 13). The DTCs were created in tight economic times in 2011, although the ESRC had invited bids to become part of a DTC in 2010 when things were more buoyant financially. The tight purse strings, however, are argued to have affected what DTCs could actually achieve in relation to the original intentions (Budd *et al.*, 2018).

Budd *et al* (2018) argue that ESRC DTC policy helped solve their Governmental budget cuts problem by delegating administration of PhD studentships to the universities themselves (p 19). This represented a cost and staff resources saving for the ESRC which was passed on to academic institutions (Budd *et al.*, 2018). The administrative burden on academic and administrative staff's workload of being part of a DTC and organising their own doctoral studentships was raised as a serious concern and problem. "These costs and tensions, alongside geographical barriers, can make the potential benefits of a DTC harder to realise" (Budd *et al.*, 2018, p. 13).

Paradoxically, although DTCs represented lower budgetary investment by the state and the ESRC this was simultaneously during a time of greater monitoring and control. Thus, some of the money was withdrawn yet increased control was sought, which may seem contradictory but can be seen as an expression of the contradictions inherent in neoliberalism. Indeed, staff participants in Budd et al's (2018) study complained about the 'micro-management' of their DTCs by the ESRC. Deem cautions on this in her foreword, with a situation whereby institutions must provide comparable funding to that provided by the ESRC and run the studentships themselves, being part of a DTC

and ESRC recognised may become tantamount to having: ‘an ESRC kitemark alongside a good deal of bureaucracy but no money’ (p. 5).

In terms of the impetus for the DTC policy, their creation was also viewed by staff as part of larger move towards interdisciplinary research, demonstrated by the kinds of research grant bids that are most desired and have greater chance of successfully being funded by research councils (Budd *et al.*, 2018). Moreover, the direction of change of research councils in general had been to create DTC-like hubs. For example, similar training centres organised around themes had already been established by the Engineering and Physical Sciences Research Council. Other research councils soon followed suit, thus it can be seen that the ESRC did not move in isolation on this shift in doctoral training and studentship administration (Budd *et al.*, 2018).

Problems and negative effects of DTC policy have been identified by academic staff. For example, new tensions being created, or prior ones exacerbated, within individual DTCs between departments, schools and institutions and across different DTCs, termed ‘horizontal tensions’ (ibid p. 28). DTCs may be somewhat ‘forced partnerships’ (Deem et al 2015 cited in Budd *et al.*, 2018, p. 19). The much-anticipated inter-institutional collaboration is felt by many not to have occurred in practice, perhaps due to the tensions between institutions. Indeed, DTC policy led to a competitiveness between academic institutions who may otherwise have worked together had they not been part of different DTCs (ibid p. 28).

Those universities who did not become part of a DTC or later DTP, and were ‘outside the golden circle’, were forced to find another way of surviving and attracting PhD students. As such some have joined the ‘University Alliance’ doctoral training system whereby institutions fund themselves and can provide PhD supervisors cross-nationally (‘co-tutelles’), although again supervision from academics in different institutions has not actually happened in practice. Criticism has also been levelled at the decision to have made DTC membership static once DTCs were formed. This was rectified with the DTPs which have a more dynamic membership policy whereby appropriate institutions can join an existing DTP prior to a forthcoming restructuring. Complaints were also made regarding DTC policy in relation to the REF classifications that subject areas at institutions must attain 3* in all three REF criteria, even if the institution did well overall in the REF exercise.

2.8.2 DTC impacts on students and students’ views

Budd *et al.* (2018) highlight a lack of student mobility from undergraduate to postgraduate among pre and post-92 universities; undergraduate students from pre-92 and post-92 institutions each tended to remain in those same groupings for doctoral study. 26 out of the 30 PhD students who participated in their study studied for their taught postgraduate degree at a pre-92 university (p 34). Approaches to university selection was more 'strategic' among 'insider' university PhD students who frequently contacted prospective supervisors before applying and selected especially topical areas for their doctoral research (ibid p. 34). Perceptions of an institutions' 'status' measured by league tables and REF performance etc. and the academic reputation of staff were cited as being of critical importance in choosing a university, among 'insider' students. By contrast, PhD students at 'returner' and 'outsider' universities experienced a more opportunistic path to doctoral study such as being encouraged by their Masters degree supervisor or by academics they met at conferences or by choosing a scholarship according to location or convenience.

A university offering an institutionally-funded funded doctoral place was also important to students. Instrumental decision-making of enhancing their CV and employment prospects by studying at a prestigious university on a funded PhD place operated (Budd *et al.*, 2018). This could give rise to an intensifying situation whereby increasing numbers of students are attracted to institutions within DTPs, as these offer competitive funded ESRC studentships, and those universities 'outside the golden circle' will find it progressively more challenging to recruit PhD students. A vicious circle would then ensue, as universities with fewer students on postgraduate Masters and doctorate programmes, are less likely to be able to demonstrate the necessary criteria to become part of a DTP (or any subsequent training structure incarnations developed by the ESRC in future), falling further and further outside the 'golden circle' with little chance of ever successfully re-entering. The appropriateness of the institution's location in terms of personal convenience was also taken into account in university selection (Budd *et al.*, 2018). Universities that were able to offer internships with external organisations were also preferred, again due to the likely improvement of students' job sector marketability highlighted above.

In Budd *et al's* study knowledge of what a DTC is, and does, was variable among students. The majority of the 30 students consulted were aware of the doctoral allocation process and some of process issues such as studentship administration being delegated to universities and DTCs being more likely to include particular kinds of institutions (Budd *et al.*, 2018). Other students had very limited knowledge of the DTCs and for many 'their function and practice was not clear'. Most students supported DTCs in principle especially in relation to potential advantages around

collaboration. Connection with DTCs and a feeling of belonging, however, may not be the case for many recent doctoral students. (Budd *et al.*, 2018) argue that the ESRC students in their research study did not feel part of a DTC either locally at their individual institution or the DTC more widely. Where students did feel a sense of membership, this was more frequently only to their university or a PhD student community, however, such groupings were scarce (Budd *et al.*, 2018).

Budd *et al*'s research highlighted potential areas of interest for me to explore. For example, the point about some post-92 institutions feeling 'left outside the golden circle' was one such area (and indeed was raised by one of my expert interviewees). Another such theme is whether postgraduate students were aware of DTCs and what they do and also whether they felt part of a peer network either locally at their institution or more broadly among a wider national doctoral community or instead relatively isolated as a PhD student. My data offered some relevant findings in these areas, not least by the absence of any mention of the DTCs as well as some specific mentions of isolation and perceiving a lack of opportunities to engage with peers.

2.9 Typologies of PhD study motivations and academic researchers

I shall now consider why people decide to study for a PhD in the first place. Students elect to undertake doctoral study for varying reasons, some are primarily goal-orientated with the PhD being a means to an end; obtaining the qualification they require for later employment. Others have a very different purpose in mind, they are impassioned by a particular research topic or, or perhaps additionally, they wish to learn more and challenge themselves intellectually. It is clear that these varying drivers for doctoral study will shape how a student perceives their PhD studies, as well as any research methods training recommended that they should undertake. The issue of how PhD study motivation influences reactions to methods training is a fundamental one within my thesis and is explored following the discussion of the literature on doctoral study motivations below.

Collinson & Hockey's (1997) 3 categories for doctoral study motivations are: 1. employment related; 2. 'intellectual' characterised by passion for a specific topic that predated the doctorate and consequently led them to wish to study for a PhD; 3. personal 'self-development' with the PhD being akin to an (extremely challenging and stimulating) hobby that improves the individual. 'Personal development' is also part of being an academic researcher in employment (Akerlind, 2008 cited in Elizabeth and Grant, 2013). Akerlind 2008 also proposed a 'fulfilment of academic

requirements' element of being an academic researcher with which a parallel can be drawn with Collinson & Hockey's (1997) employment and skills PhD study motivation.

Orton-Johnson & Webb (2011), drawing on Collinson & Hockey (1997), present a very similar threefold classification of students' motivations for doctoral study: 1. 'instrumental'; 2. 'intrinsic' and 3. 'opportunistic'. 'Instrumental' largely maps on to Collinson & Hockey's (1997) employment-related category and is outward-focused with the intention of gaining skills necessary for later employment. Orton-Johnson & Webb's (2011), 'intrinsic' motivation is internally-focused and due to passion for the subject and discipline; in essence the same as Collinson & Hockey's (1997) intellectual motivation. The main contribution to the debate made by Orton-Johnson & Webb (2011) is with their 3rd category, 'opportunistic'. They characterise this as comprising two parts; the first is similar to Collinson & Hockey's (1997) self-development motivation but the second broadens out the category to also include 'opportunistic' motivations as arising from the serendipitous outcome of an endeavour, such as gaining PhD funding or being accepted for a doctorate (when not expecting to be successful), i.e. an opportunity presenting itself which is then taken.

2.10 Research methods training and skills agenda

Having an understanding of research methods is crucial for students both as consumers and producers of research (Earley, 2013). Students are research consumers in that they must read empirical research publications in their own topic field, and as such they need to understand how that research was conducted, whether the design was robust and be able to interpret the results (ibid). Students are also producers of research in that they are frequently required to conduct their own research studies at either / at one or more of undergraduate, Masters and PhD degree levels (Gunn, 2017; Earley, 2013). Moreover, after gaining their undergraduate or postgraduate university degree(s), many students need to understand and utilise the findings of research data (research consumers in subsequent paid employment, thus an understanding of research methods is imperative (Gunn, 2017). Even if they do not use research methods skills directly, numeracy and an ability to use and understand research data, are valuable skills in many employment roles and sectors (ibid). With the growth of transactional and 'big data' and the rise of inter-disciplinary research, sociology and other social science undergraduates and postgraduates need to have good quantitative skills to be employable in many sectors of today's society.

Quantitative methods will later be discussed more fully. Numeracy skills and knowledge relating to this set of methods have been especially identified as desired by employers, both within and outside of the academy (The British Academy, 2012; MacInnes, 2014; Chamberlain, Hillier and Signoretta, 2015). Yet a deficiency in quantitative skills has been identified in social science graduates (MacInnes, 2014; Byrne, 2012). Employers are now seeking skills over and above basic numeracy, and thus there have been various moves to reinforce links between numeracy training in social science degrees and employment opportunities (The British Academy, 2012; Williams, Payne and Sloan, 2016a; Lenihan and Witherspoon, 2018). Funding for quantitative teaching and learning improvement has also increased e.g. £19.5 million from the ESRC, the Nuffield Foundation and the Higher Education Funding Council for England to fund Q-Step (an intervention in 15 higher education institutions which strives to improve the overall level students' of quantitative skills and produce a small number of advanced skills students).

2.10.1 Students' views of research methods training

Despite knowledge of research methods and skills in research being important for enabling a better understanding of a student's own discipline subject matter and future employability (Gunn, 2017), as outlined above, there are a number of problems regarding university research methods training in general at both undergraduate and postgraduate levels. Students typically respond negatively to research methods courses as they tend to perceive them as irrelevant to the rest of their university studies (Earley, 2013). This issue is exacerbated by research methods frequently being taught as separate modules from other courses rather than embedded within substantive topic or theory courses (Buckley *et al.*, 2015; MacInnes, 2014). Students can often fail to see the appeal of research methods and therefore do not possess the drive to learn about them (Earley, 2013) and can hold negative perceptions of research methods as well as misunderstandings about the concept of empirical research (Murtonen, 2015). Moreover, statistics anxiety, that is actual worries about studying statistics that can affect engagement with quantitative course material, can be present (Lin, Durbin and Rancer, 2016; Williams, Payne and Sloan, 2016a). These issues are the case for research methods, in general, yet are frequently more pronounced for quantitative methods (Murtonen, 2005; Williams *et al.*, 2008), which will be discussed in more detail later.

The literature identifies 3 key, and at times inter-related, specific factors which influence how postgraduate students react to core research methods training: 1. perceived degree of relevance to their own research (Collinson and Hockey, 1997; Parry, Atkinson and Delamont, 1994), 2.

original motivations to study for a PhD (and whether these are external and employment-focused or internal and passion for topic / self-development focused drivers) (Collinson and Hockey 1997; Orton-Johnson and Webb 2011) and 3. the student's profile, for example whether a domestic or international student and whether they study full or part-time (Deem and Brehony 2000). Moreover those who truly personally connect with an academic existence will view a PhD differently to those who do not: "Those who identify with academic life are likely to attach different meanings to the process than those who see a research degree as a means to a different job or just enjoy studying for its own sake" (Deem and Brehony 2000: 153).

Firstly, regarding perceived relevance, postgraduate students' views of research methods training are bound up with how useful, and applicable, they feel the content is for their own Masters or doctoral research projects: 'Again we found that relevance to their own particular practical work was the yardstick which students primarily used to assess the appropriateness of their methods training' (Parry, Atkinson and Delamont, 1994, p. 48 cited in Collinson and Hockey, 1997, p. 376). Where methods training was viewed as deficient in usefulness this was because of inappropriate fit for the student's research, the level of difficulty (too high or too low) or the amount students respond negatively to it (Collinson and Hockey 1997; Parry, Atkinson and Delamont, 1994; Hill *et al* 1994; McKendrick and McCormick 1993).

Differing motivations for doctoral study influence PhD students' perceptions of, and engagement with, research methods training (Orton-Johnson and Webb 2011; Collinson and Hockey 1997). Typologies of PhD study motivations will later be used as a basis for analysis of my results in chapter 5. Doctoral study motivations and the practical circumstances of how an individual studies for their PhD degree, i.e. full or part-time, are interwoven and discussed below in tandem.

Apropos the influence of postgraduate students' personal profiles and characteristics, in some studies part-time students have been found to be less engaged with research methods training than full-timers (Deem and Brehony 2000). Moreover, international students are typically more supportive of core training than their UK domestic counterparts (Deem and Brehony 2000). Whether someone studies part-time or full-time, is frequently linked with PhD study motivations, with part-timers tending to be internally driven to study rather than pursuing a PhD qualification to ultimately obtain an academic job (Deem and Brehony 2000). The literature indicates that often, although not always, full-time and international students tend to be more instrumentally motivated and more supportive of methods training (Deem and Brehony 2000). Part-time students are also

typically more mature and have competing responsibilities in their lives, such as caring and / or financial responsibilities, than younger students. Sometimes part-timers will have decided to study for a doctorate as a self-improvement hobby which must fit in with the patchwork quilt of their lives, rather than the doctorate taking precedence over all else in their existence. It is perhaps unsurprising that time-consuming and not directly useful research training is perceived as an inconvenience in such circumstances, where the student is motivated by a passion for the research topic or to self-improve and is less likely to need research methods skills for later employment. Consequently, the learning of broad skills or those not directly relevant to undertake their own doctoral project are seen to be of limited value. Thus, it is not actually the part-time status that affects the student's perception of methods training, more their fundamental reasons for doing a PhD and whether or not undertaking methods training resonates with that.

Source of doctoral funding is also important in students' responses to broad methods training, especially when compulsory. Those who are not funded by research councils, such as the ESRC, arguably wish to focus only on those methods that are specifically useful for them rather than broad methods courses which they may resent (Deem and Brehony 2000). It seems reasonable at least to some degree, that they might question why they must study something that they are not interested in, and do not perceive as relevant, when they are paying for their own PhD. However, a potential counterpoint to this is serendipity which I highlight in this thesis, that you do not always know what knowledge / information might be useful until you discover it by chance or good fortune. This is part of why the National Centre for Research Methods (NCRM) identifies trying new research methods as potentially important in their core mission. The NCRM was established by the ESRC in 2004 and was originally coordinated from the University of Southampton. The NCRM has been a partnership between the University of Southampton, University of Manchester and University of Edinburgh since 2014 as these three universities have international reputations of excellence in methodological research and training in the social sciences (NCRM, 2020). The NCRM delivers a programme of research, both in-house and commissioned projects. The in-house research was initially across 6 work packages centred around methodological pedagogy in qualitative and quantitative methods, qualitative longitudinal studies and improving data quality and data collection and reducing the risk of data disclosure in linked population data (NCRM, 2020). More recently work package 7 was introduced in January 2016 on 'Changing patterns of social science data usage' and includes varied cutting edge research projects on topics such as innovation in small area estimation methods and participatory arts and social action in research,

among others (NCRM, 2020). The NCRM also aims to improve methods knowledge among the academic and other communities and provides training programmes both face-to-face and online as well as publications and training videos on research methods.

Training being compulsory can cause negative responses and refusal due to feeling compelled: 'Because they were compulsory, I resisted doing them simply because I was told I had to' Deem and Brehony 2000, p. 157 – domestic student). Compulsory training also reduced individual autonomy which contradicted expectations of independence and self-directed learning at doctoral level: "when you get to PhD level I did not expect so many courses…you get overwhelmed with ridiculous courses…" Deem and Brehony 2000, p. 157 – domestic student).

A point that will be revisited emphatically in the results chapters of this thesis, is the theme of whether there is sufficient time within the 3-4 year doctorate to undertake all that is expected of UK PhD students, completing their doctoral research study, submitting a high quality thesis, undertaking research training and professional development activities such as teaching, publishing and presenting. Students are patently aware of the pressure to complete within this time frame (Budd *et al.*, 2018). In a context of competing demands, training and conferences were perceived as disruptive and 'time away from the thesis' (Budd *et al.*, 2018).

A contradictory picture emerges in terms of doctoral students' view of broad methods training, being seen simultaneously as both 'too generic and too specific' (Wiles *et al.*, 2009, p. 3). This is likely to be reflective of the fact, however, that doctoral students are not a homogeneous group and have differing backgrounds, viewpoints and needs (Collinson and Hockey, 1997). Moreover, even though some students fear that they may not have sufficient methods skills they can also be 'unaware or uninterested' in learning more about research methods (Chamberlain, Hillier and Signoretta, 2015; Earley, 2013; Wiles *et al.*, 2009). Students' concerns about whether research methods training occurs at the right stage for them, is at the appropriate level and includes relevant content for their personal needs all emerge strongly as key issues on this learning (Spencer et al, 2007, p. 40 cited in Orton-Johnson and Webb, 2011).

Issues around the consistency in the amount and perceived quality of research training provision can also vary across British DTC and DTP universities. Although most PhD students in (Budd *et al.*, 2018) described training being available during the 1st year of their PhD, one at an 'outsider' institution reported a complete lack of training and many felt the quality was poor with it being a 'tick box exercise' (ibid p. 36). Other practical factors can also influence doctoral students'

experiences at university. As shall be discussed in the results chapter, access to suitable study space, which is actually a stipulated requirement of the ESRC guidelines, is frequently lacking (Budd *et al.*, 2018).

Clearly the lack of consistency in the views of doctoral students themselves present a challenge for higher education policymakers and deliverers in constructing an 'ideal model' (Orton-Johnson and Webb, 2011) of research methods training. The perennial challenge of defining what is 'ideal' training and how this varies for different people, i.e. what is ideal for one person is not ideal for another, will be revisited later in this literature review.

2.11 Undergraduates views' quantitative methods training and statistics / maths anxiety

There is also variation among students in their attitudes to particular types of research methods courses, in particular quantitative methods seem to provoke strong reactions among some students. Although this PhD is about postgraduate research methods training, social science students' exposure to research methods typically begins at undergraduate degree level. Consequently, the literature on undergraduates and research methods has relevance here. Statistics or maths anxiety are also both relevant concepts in framing responses to learning about statistics and will be discussed below. Bessant (1995) defines 'maths anxiety' as "debilitating test stress, low self-confidence, fear of failure, and negative attitudes toward mathematics learning" (p. 327). Quantitative methods and numerical skills are increasingly sought after by employers (The British Academy, 2012). Despite recognising this, students often still exhibit negative framings towards learning quantitative methods at university (Chamberlain, Hillier and Signoretta, 2015). As shall be presented below, this negative disposition begins for many at school before the student commences their university studies (Williams, Payne and Sloan, 2016a).

2.11.1 Views of quantitative skills for employment / quantitative skills deficit

It has been argued that those with sociology undergraduate degrees were frequently recruited into variety of occupations (such as teaching, the police force, the caring professions, local government and the private sector) due to strong communication and interpersonal skills, despite many of them being deficient in quantitative skills (Williams, Payne and Sloan, 2016a; MacInnes, 2014). This deficiency in quantitative skills is no longer appropriate, even for students in discipline such as

sociology which historically have operated with fewer requirements for quantitative competence than disciplines such as economics. Employers are now seeking quantitative skills exceeding basic numeracy, and thus there have been various moves to reinforce links between numeracy training in social science degrees and employment opportunities for example, the British Academy's Position Statement (2012) 'Society Counts' (cited in Williams *et al.,* 2016b). Funding for quantitative teaching and learning improvements has increased for example to establish Q-Step, an intervention in 15 higher education institutions which strives to improve the overall level students' quantitative skills and produce a small number of advanced skills students. With the growth of transactional and 'big data', and the rise of inter-disciplinary research, sociology graduates need solid quantitative skills be employable in many sectors of today's society (Lenihan and Witherspoon, 2018).

Despite the importance of quantitative skills, it has been argued that many undergraduate social science students devalue research methods skills, in particular quantitative ones, with regard to their own higher education studies (Chamberlain, Hillier and Signoretta, 2015). Chamberlain, Hillier and Signoretta (2015) report findings that undergraduate students judged numeric subject skills, such as statistical analysis, to be the least important out of a set of 6 skills and 80% considered these less significant than other 'transferable skills' (p. 158). Yet just over half of students in this study (52%) deem that employers seek such skills and just under a tenth (8%) that having statistical analysis skills will likely improve their job prospects (Chamberlain, Hillier and Signoretta, 2015). The percentage of students agreeing 'good numeric skills will help me get a job' in Williams' 2013 study was even higher at 80% (Williams, Payne and Sloan, 2016a). Therefore, a contradictory picture of downgrading quantitative skills for their higher education whilst nonetheless recognising their importance for future employment emerges among undergraduate students.

2.11.2 Attitudes to undergraduate quantitative methods training

Williams, Payne and Sloan (2016a) and Chamberlain, Hillier and Signoretta (2015) studies on undergraduates offer detailed analysis of their views of quantitative methods courses and asked some similar questions, thereby potentially providing comparative data. Williams, Payne and Sloan (2016a) conducted two studies in 2006-07 and 2012-13[vii], using surveys / surveys plus focus groups with sociology / social science undergraduates in English and Welsh universities investigating their attitudes to studying quantitative methods. Chamberlain, Hillier and Signoretta (2015) conducted a small study with 44 1st year undergraduate sociology, social policy and

criminology students at Loughborough university in England who were studying an introductory quantitative methods statistics course. Chamberlain, Hillier and Signoretta (2015) presents pre and post course results on students' statistical anxiety and confidence in learning and using quantitative methods. Williams, Payne and Sloan (2016a) compare data from their two surveys in an attempt to track change over time, although such comparison may be questionable due to differences in the two surveys' samples, reach and changes of wording in the questionnaires.[viii] In both studies, respondents clearly favoured carrying out their university work using words rather than numbers / data analysis. Williams, Payne and Sloan (2016a) claim an increase in 'antipathy towards doing numeric work' (p. 178) with with 64% in their 2007 sample compared with 77% of students in their 2013 sample saying that they would prefer to write an essay than analyse data (wording in 2007) / use statistics (wording in 2013) (Williams, Payne and Sloan, 2016, p. 174a). Relatively similarly, Chamberlain, Hillier and Signoretta (2015) found that 65% expressed a preference for writing essays over analysing numbers.

The two studies show rather large differences on whether sociology / social science students should study statistics, although variations between the studies' methodologies should be borne in mind when making comparisons. A key disparity is that Williams, Payne and Sloan (2016a) study asked whether sociology / social science students in general should have to study statistics and Chamberlain, Hillier and Signoretta (2015) asked their sample whether they personally should have to study topics including statistics. Twenty-two percent in 2007 and 6.5% in 2013 in Williams, Payne and Sloan (2016a) studies agreed that sociology / social science students should <u>not</u> have to study statistics. By contrast a much higher percentage (71%) in the Chamberlain, Hillier and Signoretta (2015) study disagreed that they <u>should</u> have to study statistical topics. Williams, Payne and Sloan (2016a) suggest their finding of a decreasing percentage agreeing with not studying statistics may indicate undergraduate students' reactions to studying statistics becoming more positive in recent years. Again, however, it should be noted that the two questions do not measure exactly the same thing due to changes in the question wording making this claim open to question.

There may also be a mismatch between some sociology / social science students' expectations of what they will study in their degree and the actual content, with 44% of sociology undergraduates in the 2007 study not anticipating carrying out as much 'number work' as they had been required to do (Williams, Payne and Sloan, 2016, p. 174a). This was even higher in Chamberlain, Hillier and Signoretta (2015) with 60% not anticipating they would be required to do a great deal of study that included maths. Self-reported trust in statistics can also be an important marker of attitudes to

this type of data. In Williams, Payne and Sloan (2016a) study, 44% in 2007 and 17% in 2013 agreed that on the whole statistics cannot be trusted yet a far lower percentage of 10% in Chamberlain, Hillier and Signoretta's (2015) study felt this.

2.11.3 Statistics / maths anxiety

Anxiety about the prospect, and reality, of studying statistics termed 'statistical anxiety' or 'maths anxiety' has been highlighted in a plethora of literature as a serious issue for many students which presents an obstacle to fully engaging with quantitative (Slootmaeckers, Kerremans and Adriaensen, 2014). Incidence of statistics anxiety can be prevalent among students with some studies suggesting that approximately half of students feel anxious about learning statistics. For example, Williams, Payne and Sloan (2016a) found in their 2007 study that just over half (52%) of undergraduate student respondents felt anxious about learning statistics and similarly Chamberlain, Hillier and Signoretta (2015) note that 55% reported this at the start of a statistics course, although this reduced to 43% at the end. This is important as maths and statistics anxiety can be associated with negative learning effects. Lin, Durbin and Rancer (2016) found students with increased maths anxiety were more likely to believe that learning research methods was difficult and had diminished understanding of the course content.

The story of a negative attitude to maths and 'number work' begins earlier, however, when pupils studied maths at secondary / high school. Their experiences of studying maths, and then subsequent decision whether to continue studying the subject for Higher level (in Scotland) and A'Level in England and Wales leads to 'early specialisation' (MacInnes, 2014) before they have set foot in a university. These earlier experiences of maths study are important for two key reasons: firstly, that they may colour students' views of the subject once they are at university and secondly, that some university students may have last studied maths when they were 16. When aged 18+ at university this is at least a 2-year gap, although it could be longer as many social science, especially sociology, undergraduate degree programmes do not teach statistics until the 2nd (Williams, Payne and Sloan, 2016a) or even 3rd year of university, thus it could be as much as 4 years since the student did any maths. Certain subjects if not practised regularly are less likely to be remembered and Williams, Payne and Sloan (2016a) caution that maths is one of these with a 'use it or lose it' characteristic (ibid p. 177). Williams, Payne and Sloan (2016a) propose relevant findings on this, 43% of the 2007 sample agreed that they 'had a bad experience' of studying maths at school and 47% of the 2013 sample disagreed that they 'had enjoyed' maths at school. As stated

previously, modification to question wording may make direct comparison between survey years problematic; not having actively enjoyed maths and having a bad experience of studying maths are not necessarily the same thing. Yet Williams, Payne and Sloan (2016a) suggest these findings may indicate a possible slight increase in negative views on having studied maths at school. In Chamberlain, Hillier and Signoretta (2015) 49% specifically selected their course on the basis of not wishing to study much maths. This was lower in Williams, Payne and Sloan (2016a) with 19% in 2007 and 14% in 2013 agreeing that a reason behind their degree selection was not liking maths.

Variation in sociology undergraduates school subject choices, and associated differences how much maths had been studied and numeracy levels, is a perennial challenge for developing introductory quantitative methods course content at an appropriate level for all (Williams, Payne and Sloan, 2016a).

In their comparison of 24 countries internationally, Hodgen *et al.* (2010) find that only the UK, Ireland and Australia do not have compulsory maths education in schools post-age 16 and that less than 20% of that age group in England, Wales and Northern Ireland study maths. This compares with 21-50% of pupils in Scotland, Hong Kong and Spain and over 50% studying maths post-age 16 in the other 18 countries (with 8 of these countries having 95-100% of pupils studying maths, as it is compulsory) (Hodgen *et al.*, 2010). It is clear that a lack of studying maths to a more advanced level, and large time gaps between this and higher education at university in the UK, do not bode well for readying students for statistical learning. Although Buckley *et al.* (2015) question whether maths teaching to an older age would truly impact upon students' responses to quantitative research methods, as critical and conceptual methodological thinking are important here as opposed to mere numeracy and making calculations.

A general disposition away from using quantitative methods may be observable among some social science students and even those in an academic career. This is indicated in the literature via 3 key elements: 1. a lack of quantitative methods being personally used in students' own research studies; 2. a general favouring of qualitative methods and 3. a smaller number of journal article publications from studies using quantitative methods than qualitative ones. Regarding the first point, relatively small proportions of students in some social science disciplines use quantitative methods in their research projects; only 10% of social science undergraduate students at Cardiff University (Williams, Payne and Sloan, 2016, p. 178a) and less than 25% of sociology and politics doctoral students (Wiles *et al.*, 2009). Secondly, Williams, Payne and Sloan (2016a)

observed a preference for qualitative methods and theory among the social science undergraduate students during focus groups in their study. They describe these responses to quantitative methods as a "can do, won't do attitude" (ibid p. 178). Thirdly, research has found a bias towards research and publications in journals on studies using qualitative methods. Payne, Williams and Chamberlain (2004, cited in Williams, Payne and Sloan, 2016a, p. 178) found that only 14.3% of articles 'in leading UK sociology journals' (ibid p. 173) report on research using quantitative methods and their own review in 2013-14 uncovered a similar picture. Favouring qualitative methods over quantitative may be more exaggerated among sociologists who are earlier on in their careers, with more than twice the percentage of qualitative compared with quantitative publications among that group (51% qualitative versus 20.5% quantitative) (Williams, Payne and Sloan 2016a, p. 173). This difference in qualitative and quantitative research publications, however, largely disappears among sociologists of the more senior cohort, perhaps reflecting a shift in the discipline between the periods when the two cohorts were trained (30% qualitative versus 25% quantitative) (Williams, Payne and Sloan 2016, p. 173).

Williams, Payne and Sloan (2016a) conclude their chapter with a cautionary tale. They aver that being educated in sociology "is less fit for purpose than it was half a century ago" (ibid p. 184) as many sociology graduates do not have the required quantitative skills to be fully employable in a climate of austerity-restricted public services and rising big data and transactional data analysis. They ponder that there may be a problem that is deep-rooted and centred in the ethos and philosophical view of the discipline that leads to the ''can do, won't do' attitude among many of the students. Such a problem may not be easily resolvable by simply improving maths and statistics training at school and university levels. Williams, Payne and Sloan (2016a) urge that "to thrive, we need a methodologically pluralistic discipline…", meaning that both qualitative and quantitative methods must be used where they are appropriate and that students need to have skills at the appropriate level in both (Crow, 2018). They conclude by saying, "We do not need more hard sums, but we do need to change the way we think about sociology and the social world, and how we engage with it as researchers." (ibid p. 185).

How might such issues of negative responses to quantitative methods and a deficit in such skills among some social science undergraduates begin to be resolved? Firstly, embedding quantitative methods within substantive topic or theory courses so that they do not become something that students perceive as unlinked and isolated from the broader context of their learning is a key potential solution championed by much literature (MacInnes, 2014; Parker, 2011; Gunn, 2017).

Falkingham and McGowan (2011) advocate integrating quantitative methods as when universities fail to do this, students perceive quantitative methods and statistics as lacking relevance and importance. Diminished relevance perceptions are, in turn, associated with a lack of enthusiasm for learning quantitative methods (ibid). The British Academy (2012) recommends such integration of quantitative methods in their 'Society Counts' report on quantitative skills in the social sciences and humanities so that quantitative methods are contextualised for students. This reduces the likelihood of them being perceived as an inconvenient add-on to be endured (Buckley *et al.*, 2015). Moreover, using statistics and quantitative examples within the teaching of substantive topic courses rather than the more typically used qualitative evidence, can improve student perceptions of quantitative methods, although some lecturing staff have been fearful to do so due to perceptions of their own lack of competence and understanding of quantitative methods (Falkingham and McGowan, 2011). Improving communication between course conveners as to the timing of content in different modules in order to achieve greater co-ordination and maximise the most beneficial timing of using quantitative examples would also be a positive step (Falkingham and McGowan, 2011). The evidence on the effectiveness of embedding quantitative methods in students' overall curriculum is not, however, unequivocally positive. Williams *et al.* (2016b) found some positive impacts of embedding as it increased students' trust in statistics and imbued them with a better understanding of the part that quantitative methods can play in research so that these methods were more contextualised. They also, however, discovered a negative effect of embedding whereby some students on such courses experienced decreased faith in their own quantitative abilities (ibid). However, on balance the overall message from the literature is that embedding quantitative methods is a good thing.

Secondly, seeking to alleviate some students' aforementioned statistics anxiety is another important possible answer in addressing the quantitative skills deficit and negativity among some students regarding quantitative methods (MacInnes, 2014). Thirdly, MacInnes also advocates the critical importance of enthusiastic quantitative teachers to enhance students' learning experiences of, and responses to, quantitative methods (2014). Moreover providing quantitative teaching in such a way that begins at a very basic level and does not assume any previous quantitative experience is important (Chamberlain, Hillier and Signoretta, 2015). Yet the aforementioned negative disposition towards quantitative methods among some students may mean that even when sound pedagogical practices are followed, problems with a lack of openness to learning about quantitative methods may persist as it 'is perhaps less to do with numeric deficit and more

to do with lack of student interest in the use of quantitative methods' (Williams *et al.*, 2008, p. 1003).

2.12 Tensions between discipline (specialism) versus generalism

Epistemological questions of the relative importance of individual disciplines and their associated theories, methods and practices compared with a more general social science category and inter-disciplinary work comprising a broader perspective, frequently arises in the literature. Here 'academic tribalism' and the 'singular' forms of knowledge of tightly bounded disciplines battles against a more comprehensive picture and desire to acquire broader methods skills and learning (Muller and Young, 2014). Questions of 'relevance' and 'usefulness' of knowledge become of primary importance (Muller and Young, 2014; Orton-Johnson and Webb, 2011). Gibbons *et al*'s (1994) proposal of mode 1, that is disciplinary-based, and mode 2, which is cross-disciplinary knowledge became a much-discussed concept. According to (Gibbons *et al.*, 1994) mode 2 knowledge involves a two-way relationship or 'contextualisation' (Nowotny, Scott and Gibbons, 2001) between knowledge and society whereby information stakeholders not only digest, but also influence, how knowledge is generated. (Gibbons *et al.*, 1994) averred that mode 2 knowledge is actually supplanting mode 1 knowledge, as the former is more appropriate for our contemporary 'knowledge-based economy' (Muller and Young, 2014) being 'problem-centred, relevant and useful' (ibid p. 133). Luker (2008) is also a champion of the inter-disciplinary approach to knowledge: 'knowledge comes not from mastering esoteric facts or techniques, but in making connections *across* traditional boundaries - going wide rather than deep. It means mixing an insight from economics with one from history.' (p. 13). This new focus on knowledge becoming more practical and applied threatens the traditional disciplines, the pertinent question being whether this is a good or a bad thing. Some argue that such a move would not come without cost, as the 'conceptual breakthroughs' (Muller and Young, 2014) and pushing at the boundaries, leading to innovation and new knowledge, which are part of the 'singulars',' mode 1' or disciplines would potentially be lost.

Debates around whether generalism or specialism is more valuable are not confined solely to academic literature. Initially discussing breadth versus specialism via the example of professional sport, Epstein (2019) presents how originally embarking upon a range of different sports becoming specialised in one particular sport can be advantageous. He uses the example of Roger Federer,

the tennis champion, and Tiger Woods the golf champion, to illustrate his point. According to Epstein (2019), Federer participated in a large range of sports during his childhood such as: skiing, wrestling, swimming, basketball, table tennis, badminton and football, before ultimately settling on pursuing tennis and becoming specialised, advanced and extremely successful in it. By contrast, Woods took a very different path golf being the only real sport he played from a very young age, approximately age 2, and engaging in hyper-specialisation from the outset. The general belief regarding sport is that to attain top success, ultimate dedication and specialisation in it from infancy is the only way. Epstein (Friday 12th July 2019) questions this and posits that both approaches can be successful and that the passage of time can sometimes be necessary to 'acquire personal and professional range', (ibid p. 11) which can be highly beneficial. A 'sampling period' of experimenting with different sports (p. 7), applicable to the topic of breadth in research methods training in this thesis, helps to harness a range of abilities which can then be more sharply focused to better result later on. 'We know that early sampling is key, as is diversity (Tucker no date, cited in (Epstein, 2019). Indeed, he cautions if experts become very narrow in their approach and their views then they are less effective, they 'actually get worse with experience' (Epstein, Friday 12th July 2019, p. 11). Moreover, he states that learning is most successful in terms of long-term retention and acquisition of real knowledge when is carried out gradually, 'deep learning' (Epstein, 2019, p. 91). 'The most effective learning looks inefficient – it looks like falling behind' (Epstein, Friday 12th July 2019, p. 11). Epstein concludes that engaging in breadth, inter-disciplinarity and slower, deep learning is demanding when society seems to prize specialism, yet both range and specialism have value in our very complex society today:

> 'While it is true that there are areas that require individuals with Tiger's precocity and clarity of purpose, as complexity increases – as technology spins the world into vaster webs of interconnected systems in which each individual only sees a small part – we also need more Rogers: people who start broad and embrace diverse experiences and perspectives while they progress. *People with range*.' [Emphasis added]. (Epstein, Friday 12th July 2019, p. 11)

2.13 Tensions in identities – disciplinary and methodological 'tribalism'

A recurring theme within the literature is tensions between identities and the ways these can conflict. Differences among students in several types of identity are important for a consideration

of their responses to research methods training. The two key arenas for identity differentials are disciplinary identity versus a more generalist social science identity and also methodological identities, whereby students may situate themselves more within the qualitative or quantitative 'camp, the so-called 'qualitative-quantitative divide' (Murtonen, 2005; Byrne, 2012).

2.13.1 Methodological identity

Methodological tribalism such as this is counterproductive for students in being responsive to learning about all types of research methods and can result in them framing a particular set, frequently quantitative methods, negatively (Murtonen, 2005). Luker (2008) also cautions against a perceived divide between quantitative and qualitative methods arguing that there simply exist methods to answer research questions and postulates an over-focus on their form, and on classifying types, as being unhelpful:

> 'I hope to convince you that the dichotomy between qualitative and quantitative methods is simply silly, and that a good… social scientist should be open to whatever methods will help you understand that part of the social world that challenges and intrigues you.' (Luker 2008, p. 5).

2.13.2 Disciplinary identity

Regarding disciplinary identity, the previous social science doctorate model was that the student was to provide an original contribution to knowledge and become the expert in a specialised topic within their discipline: "The path to success for an up-and-coming young scholar was to master an arcane but well-bounded area of human knowledge such that she or he knew more about it than anyone else." (Luker 2008, p. 11). Orton-Johnson and Webb (2011) discuss conflict between doctoral students' identities as 'disciplinary specialist' versus general 'social scientist' (p. 9). For some students' perceptions of a PhD as providing "a unique academic and intellectual 'rite de passage'" (p. 16), whereby students' motivation of intellectual passion for a particular discipline and subject is at odds with the need to learn a broad set of methods. 'There is an uneasy relationship between understandings of doctoral research as the pursuit of a personal passion and intellectual specialism and as a process of acquiring generic research skills perceived to be relevant to subsequent labour market opportunities' (Orton-Johnson and Webb, 2011). This may even go a stage further with some students viewing 'taught courses as an infringement on their

identity as an independent researcher' (Orton-Johnson and Webb, 2011). At the very least challenges emerge in the need to balance what are often seen as the 'competing demands' (Orton-Johnson and Webb, 2011) of carrying out the individual PhD research project and studying broad methods courses. Methods courses were viewed by some doctoral students as a 'distraction' from actual purpose of doing a PhD, they were seen as 'stealing time' (p. 14) and there was a feeling of being patronised by having to study courses and being 'treated like an undergraduate' (Orton-Johnson and Webb, 2011, p. 13). Tensions emerge between academic freedom / independence juxtaposed against a feeling of being managed and elements of study being prescribed.

Commonality can be seen in the tensions and frustrations described in Orton-Johnson and Webb's (2011) study of Edinburgh University doctoral students and Elizabeth and Grant's (2013) study of South African academics. Initial emotions of 'excitement' at commencing research on the part of university academics soon give way to feelings of 'being disciplined' (Elizabeth and Grant, 2013, p. 127) and 'pressured' combined with 'resentment' (p. 127) regarding the university's focus on measurable outputs and having to write up publications (Elizabeth and Grant, 2013). Elizabeth and Grant (2013) postulate that higher education has shifted to outputs-focused culture of 'research productivity' (p. 124) measured by research publications and gaining research funding awards, whereby one must 'publish or perish' (p. 123). affects the 'academic self' (p. 124) and their view of themselves as a researcher.

How students frame their own discipline within a broader disciplinary context can also be important in how they respond to research methods training, especially particular methods courses such as quantitative. For example, Williams, Payne and Sloan (2016a) report on their 2008 study of social science undergraduates that 71% view sociology as being closer to an arts / humanities subject than a science one which they argue indicates a 'strong, in-built aversion to numeric data' (ibid p. 174).

2.14 PhD student and supervisor relationship

Another key aspect which affects doctoral students' experiences of their PhD studies, and sometimes their perspective on particular research methods, is their relationship with their PhD supervisor(s).

PhD supervisors are extremely important for doctoral students' time at university. According to the ESRC, the PhD supervisor is 'the single most important variable affecting the success of the research process' (ESRC 1991, p. 8). Both students and supervisors have expectations of one another. Supervisors expect students to be able to 'develop intellectually' and be sufficiently self-directed in their doctoral studies (Hockey, 1994). Students tend to expect someone who is a 'guide' and a sounding board but who performs this role with empathy (Hockey, 1994) and helps the student foster belief in themselves and gain increasing confidence in themselves as a competent academic researcher (Deem and Brehony, 2000). When the student-supervisor relationship works well it can ease the transition into being a doctoral student and the PhD tends to progress better overall than if it does not (Hockey, 1994). As stated earlier, however, students are not a homogeneous group and not all agree on what they desire from supervisors. Some students, although enjoying the personal dynamic with their supervisor, find them too informal akin to a friend dynamic, and not sufficiently strong on eliciting effective work from them (Deem and Brehony, 2000). Budd *et al.* (2018) report from their interviews with 30 social science UK doctoral students, that relationships with supervisors are good underpinned by 'regular and supportive meetings' (p 35). Other students report that their supervisor does not have sufficient time to support them and feels 'distant' (Deem and Brehony, 2000). Notwithstanding this lack of complete consensus, a large proportion of the literature on supervisors indicates that good planning and clear communication as well as an ability to be attuned to students' needs are essential qualities in supervisors, and that the student-supervisor relationship should be founded on mutability (Hockey, 1991). Gender can also play a role with same gender students and supervisors tending to experience more personal camaraderie and compatibility in their working student-supervisor relationship than opposite sex students and supervisors (Deem and Brehony, 2000). PhD Students can vary in their levels of personal confidence in their abilities and some literature reports that males tend to be more confident than females (Deem and Brehony, 2000). Students of either gender can also fear seeming to lack intellectual abilities in front of their supervisor, both in supervision meetings and if giving a presentation in front of them, for example, at a departmental seminar (Hockey, 1994). This can result in students either avoiding giving presentations when their supervisor would be present or inhibit students' expression in such situations whereby they err on the side of caution in what they say in order to avoid appearing deficient in any way (Hockey, 1994).

As well as the student-supervisor relationship being fundamentally important in how the doctorate proceeds it can also affect the students' perspective on particular research methods. Students can

be influenced by their supervisors' opinion, especially their view of quantitative methods. Issues of the qualitative-quantitative divide come into play here with students at times allying themselves with whichever camp their supervisor places themselves in. Not all students and supervisors fully embrace broad methods training (Deem and Brehony, 2000; Parry, Atkinson and Delamont, 1994) nor do all university lecturers have a positive view of quantitative methods, lacking quantitative skills themselves (Byrne, 2012). This can lead to an unwillingness from some lecturers to embed quantitative methods and quantitative data within their substantive and theory social science courses (Chamberlain, Hillier and Signoretta, 2015). Moreover, many supervisors and lecturers currently working in universities experienced piecemeal methods training themselves during their doctorate and can recall this being sparse and dependent on the knowledge locally available within their own institution and on the part of their personal PhD supervisor(s) (Deem and Brehony, 2000).

Not only are students' relationships with their supervisor important but feeling accepted by other academic staff, valued and integrated within the department is critical to doctoral students' experiences and how well they adjust to university life (Hockey, 1994). (Deem and Brehony, 2000) characterise this as being part of access to 'academic research cultures' (p. 158). This can be well achieved or virtually non-existent depending on the institution, its ethos and the characteristics of individual academic staff. For example, some students feel included in, and part of, departmental research seminars, others largely excluded (Budd *et al.*, 2018; Becher, 1989; Becher, Henkel and Kogan, 1994). Again, many students reported feeling excluded from the academic research environment in Budd *et al*'s (2018) interviews with 30 social science PhD students and a notable absence of institutional effort in fostering a doctoral community' (ibid p. 14). Where doctoral communities did exist these had been created by the students themselves, rather than by academics at their institution. A general picture of doctoral students' isolation and lacking feeling truly valued sadly emerges in much of the evidence.

2.15 Brief history of academic disciplines and universities

Academic disciplines can be charted back to the birth of universities in the 13th and 14th centuries. The humanities, specifically theology, were viewed as the crucial disciplines best able to provide a privileged education for males to gain top employment (Muller and Young, 2014). These original academic disciplines harnessed concepts of 'academic freedom' and knowledge and learning 'for its own sake' (Muller and Young, 2014, p. 129) whereby innovation could be pursued and

boundaries of disciplinary rules pushed. If mistakes were made this did not matter, what was important was endeavouring to discover more. Lakatos (2015) terms this the 'stretchability of concepts' and (Muller, 2000) proposes that this is how disciplines evolve.

The prizing of the humanities changed in the early 19th century with 'German reforms' (ibid p. 128) making universities increasingly research-based to prepare students for the 'knowledge economy' (ibid p. 129). This is when STEM (science, technology, engineering and maths) subjects then became paramount, supplanting the humanities as the most appropriate disciplines for inculcating employing-preparation knowledge (ibid p. 129). Durkheim's writings on disciplines and the distinction between 'the sacred' and 'the profane' are important here (Durkheim, 1912). The 'sacred' being linked to the high level, philosophical questions such as what characterises the human race and what happens after death? 'The profane', however, relates to practical questions and motivations such as those guiding basic survival (Durkheim, 2012 cited in Muller and Young, 2014). Muller and Young (2014) contend that the sacred was especially crucial in forming the social and natural sciences disciplines, characterised as it was by moving beyond the here and now, lifting out of the local context and instead offering a way of 'generalising about the world and our experience' (ibid p. 130) to form more collective understandings. 'Disciplines, as an expression of Durkheim's collective representations, have been preserved and developed by specialist communities.' (Muller and Young, 2014, p. 130).

In terms of the social science discipline and methods Luker defines these as: 'a set of guidelines about how to conceptualize and execute a systematic and rigorous intellectual inquiry into something that lets you get as close to the "truth" as possible.' Luker 2008, p. 5-6). The discipline of sociology has grown enormously in popularity over time. Prior to World War II in the UK there were only 33 annual sociology graduates and very few sociology lecturers to teach them, merely 60-100 (Williams *et al*, 2016b). A 'Great Expansion' occurred in British sociology in the 1960s, as the principles of sociology synergised with the ideals of the 1960s. By early 1970s, there were 1200 sociology lecturers and a further 900 researchers in the subject (Williams *et al*, 2016b).

Turning to relatively recent changes in academia in the UK and discipline evolution more broadly, Trowler *et al* (2012) outline what they see as 3 key periods in British academia**:** period 1 (1960s – 70s) characterised by domain-based studies, those which involved a wider subject which had not yet become a discipline such a women's studies (some effort to be interdisciplinary); period 2 (1980s – early 90s): whereby a neo-liberal war was launched on academic 'tribes' within the

context of a rigid UK Tory Government and a societal shift from public to private ownership and funding. As such university curriculums were developed with the economy and the marketisation of education within a 'triple helix of the state, business and academia' (ibid p. 15) and there was an embracing of multi-disciplinarity both in universities and the employment sector. Multi-disciplinarity 'involves conjoining 2 or more disciplines…using aggregative knowledge…from each' (ibid p. 14). Period 3 in the late 90s – 2000s involved a move to interdisciplinarity and was focused on mode 2 knowledge, aimed at solving real-world problems, and discussed further below. Academics were encouraged to become more interdisciplinary, to 'be more urban and less rural' (Becher and Trowler, 2001). There are, however, critics as well as champions of interdisciplinarity and multi-disciplinarity. Some say interdisciplinarity and multi-disciplinarity are good as they embrace the collective and are 'integrationist and consultative' (Ellis, 2009, p.7 cited in Trowler *et al* 2012, p.14), others critique them as failing to avoid the traps of elitism of disciplinarity (Muller and Subotzky 2001, p. 68 cited in Trowler *et al*, 2012, p.14) and ultimately becoming too cautious and conservative as they are structured around solving problems rather than maintaining a critical and questioning perspective on society. Krishnan (2009) also claims that interdisciplinarity is poorly defined.

2.16 Pedagogy and higher education curriculum literature

Pondering best practice in teaching research methods is also a perennial issue and a great deal has been written about pedagogy. Although the focus of this PhD is on postgraduate research methods training, there is also a large body of literature on undergraduate methods teaching and curricula, therefore, it is also useful to briefly consider some of this as what is learned at undergraduate level effectively prepares for the postgraduate level. Any major gaps in knowledge from the undergraduate degree, must then be addressed during the postgraduate programme. Furthermore, social science students' time at university can be thought of as a journey, typically beginning with undergraduate study and then progressing to postgraduate education although many other paths and formulations are also possible, for example, transferring to social science study from a different disciplinary background and thereby having little or no social science methods training. Moreover, although the journey to postgraduate study may be seen as beginning with undergraduate education, it can arguably be conceptualised as beginning even earlier, with school education and the content of the curriculum at that level. Students' readiness and abilities

to learn particular things at university are likely to be affected by what the content and level of what they studied at school, as well as the latter affecting which degree subject(s) they will have the opportunity to choose from in higher education.

Wagner, Garner and Kawulich (2011) reviewed journal articles on research methods teaching in higher education and found limited literature on how to teach research methods and proposed curriculum content. A key question that Wagner, Garner and Kawulich (2011) pose in their examination of this literature is whether there is the potential for an overarching pedagogical approach to teaching research methods in the social sciences and whether people see a common approach as useful i.e. should the boundaries between disciplines be blurred for the purposes of teaching? Wagner, Garner and Kawulich (2011) found that most articles were divided by social science discipline, rather than indicating a desire for commonality in methods teaching approaches across disciplines. However, some disciplines have reported teaching methods not typically associated with them. For example, psychology, which typically focuses on quantitative methods, has on occasion discussed the benefit for psychology students of learning qualitative methods e.g. for counselling (Morrow, 2007; Barak, 1998).

Luker (2008) identifies problems with the way that research methods are typically taught. She argues that methods teaching practices have not altered in-step with the changing social world and shifting ideas about methods and instead methods pedagogy has remained similar over time replicating the same problems:

> "Watching my students over the years, and watching the same problems crop up again and again, I've come to believe that there is something wrong—in fact, insane — with the way we teach "methods." To be blunt, we keep teaching methods in the same old ways, and students keep getting stuck in the same new ways —new, that is, in terms of the kinds of problems my generation of researchers faced." (Luker, 2008, p. 7).

One of the key issues that Luker (2008) highlights is teaching the research process as though it unfolds in a direct line rather than as a dynamic one, where aspects must be revisited in light of others (such as theory informing research findings but as results become available the researcher may wish to modify their theories):

> "This notion of linearity not only underlies our notion of how traditional social scientists think the world works, but also it understructures, without our ever noticing it, our practices about how we should go about doing research in and on that world. Not only does A cause B, which

means that in even good research project we must set up an independent and a dependent variable beforehand, but it also means that the actual process of doing research is usually taught as a linear one." (Luker, 2008, p. 10).

2.16.1 Undergraduate research methods training

Welch and Panelli (2003) discuss the effectiveness of an integrated methods course i.e. teaching the entire research process rather than a single method, including how theory and methodology connect, as well as data collection and analysis to human geography students in New Zealand. They propose that this integrated approach to teaching the research process was very well received by students, who found it challenging but very useful and felt that it really taught them how to do research and all the aspects that they need to consider when doing a piece of research.

2.16.1.1 Mixed methods

Mixed methods teaching and learning can present particular challenges as those who teach mixed methods (i.e. both qualitative and quantitative) are typically not sufficiently well-versed in both method types to be able teach them effectively and students tend not to have prior training in both (Hesse-Biber, 2015). Frequently teachers have never studied a mixed methods course themselves and must simultaneously fathom the 'how-to's' (Cresswell *et al.,* 2003, p. 620) of mixed methods as well as strategies for teaching them (Earley, 2007).

2.16.1.2 Quantitative methods training

Truly embracing the importance of quantitative approaches is argued to be lacking in many UK universities, even though the methods are taught there (Payne, Williams and Chamberlain, 2004; MacInnes, 2014). Identified deficits in quantitative skills among some social science undergraduates have remained insufficiently addressed because many students and academic staff do not view this as a failure (MacInnes, 2014).

What possible explanations are there for this deficit in, and even arguably hostility towards, quantitative knowledge and methodologies? Origins are arguably due to shifting epistemological fashions with quantitative methods being demonised at various points historically. One of the problems was that there was limited sociological research methods training in the 1950s and that which did exist was mainly on quantitative surveys. Thus, sociological methods became conflated

with survey methods and there was a lack of connection made between theory, methods and topics (Williams *et al.*, 2016b). MacInnes (2014, p.1) notes that founding father sociologist C. Wright Mills (1959) held an unfavourable view of the quantitative approach as not only: "'positivist' or 'empiricist'… in its application, but as implying an 'uncritical' attitude, indifference or even hostility to social change and a focus on trivial or piecemeal substantive issues." This was further compounded by insufficient sociology lecturers, as sociology was still in its infancy and did not yet have enough graduates to become lecturers to teach the next cohort, consequently sociology methods were often taught by statisticians (Williams *et al.,* 2016b; MacInnes, 2014). Although British sociology as a discipline expanded in the 1960s, there were still problems in the teaching of methods such as a lack of bespoke quantitative methods lecturers, and quantitative methods were often taught by a qualitative lecturer with limited experience of the former and methods being typically divorced from the rest of the degree programme and delivered as a single module, as opposed to being integrated in a cohesive way (Williams *et al.*, 2016b). New waves of sociological thinking and theoretical perspectives evolved such as ethnomethodology, postmodernism, feminism which new sociology students took on board and began to reject quantitative sociological thinking: "Whether or not intentionally, an anti-quantitative mythology was rapidly invented, devaluing quantitative methods even further." (Williams *et al.,* 2016b, p. 183).

This literature review has presented the epistemological approach underpinning this study of social constructionism with reference to the sociology of work and how the economy, education, employment and skills have mutually influenced and shaped one another. The changing nature of work, and how this has been differentially constructed at various periods in time, has been discussed as well as the evolution of higher education, the social science PhD and the creation of the DTCs and DTPs as a new research method training infrastructure was born. Key policy documents and policy related decisions in higher education have been summarised. Scholarly literature on the marketisation and massification of higher education has been analysed as well as conceptualising how such changes have led to the impetus of gaining employment relevant skills that we now see in higher education and the doctorate. Chapter 3, which follows, presents the research design and methodology for this study.

3 Chapter 3: Methodology Chapter

3.1 Introduction

This chapter presents the methodology adopted for the research, outlining the rationale behind methodological choices, making it explicit how each was selected to endeavour to most effectively answer the study's research questions. A mixed methodological approach comprising qualitative and quantitative was utilised. Walking interviews and video diaries, as well as more standard telephone / video and face-to-face qualitative interviews were undertaken. Quantitative research was in the form of online and hard copy questionnaires. I commence by defining my overall research questions, before outlining the sub-research questions. Key decisions involved in situating the study in Edinburgh are described, then I demarcate the different sets of people consulted by the research, the reasons why these groups were chosen and the processes for recruitment to the study as well as some obstacles encountered in conducting the fieldwork. A table setting out the characteristics of the qualitative research participants is provided. Additionally, I consider my hypothesis of factors potentially influencing how students perceive and experience their postgraduate research methods training, such as disciplinary and methodological identities and preferences, their personal demographics such as gender and age and their stage of study.

The way in which I conducted the interviews as semi-structured is elucidated as well as my engagement with the nature of interviews as co-constructive between the interviewee and interviewer within the 'active interview' approach. A highly detailed account of the stages of my qualitative data analysis is portrayed, commencing with data familiarisation, coding and my use of a combination of non-purist elements of grounded theory, and content analysis (both directed and conventional) in order to generate codes. A brief description of the key processes within the quantitative data analysis is also provided.

I present a reflection on my researcher identity as being similar to that of my participants as a peer postgraduate student and consider the possible impacts of my 'insider' status with reference to some relevant methods literature. The chapter concludes with a contemplation of the ethical considerations of this doctoral research study including procedures common to most research studies such as gaining informed consent and gaining ethical approval from committees and ethical considerations for my participants as well as myself as the researcher.

3.2 Study aims and research questions

The study's aims and research questions were previously outlined in full in the Introduction chapter on p. 28-29.

In this thesis I am most interested in methods training for *doctoral students*, however, training for Masters students could not be omitted from this research due to the 1+3 programme of postgraduate study. Specifically, I have sought to investigate whether it is beneficial for masters and doctoral degree programme to undertake prescribed methods training, in both qualitative and quantitative methods, as well as more advanced or specialised training in the particular methods a student requires to conduct their doctoral research project.

3.3 Research Design

3.3.1 Research site

The research was conducted primarily in Edinburgh, although the reach extended to other Scottish universities via the questionnaires for current PhD students (who are part of the Scottish Graduate School of Social Science). The focus was primarily on Edinburgh, in terms of the university there. The University of Edinburgh is a logical choice of research site, as it hosts a DTC / DTP which delivers the new programme of ESRC core and advanced research methods training to postgraduate social scientists. Additionally, it is the lead of the Scottish Consortium of collaborating institutions in the Doctoral Training Partnership. It is also what can be called a 'traditional' pre-92 university, as opposed to a post-1992 university, which makes it similar to many of the other DTCs / DTPs in this respect. Additionally, the PhD candidate has existing networks and connections in the University of Edinburgh, on a personal level and also indirectly through others, such as doctoral supervisors. These connections were utilised to facilitate the recruitment of research participants.

3.3.2 Participants

Research participants included:

- Current social science postgraduate students at Edinburgh University (both PhD students and Masters students)
- PhD students within the Scottish Graduate School of Social Science (SGSSS) (via the questionnaires distributed at the SGSSS summer school)
- Postdoctoral employed researchers
- Key 'experts' involved in various relevant organisations such as: ESRC committee members, AQMeN and Q-Step

3.3.3 Methods

A range of methods was used to gather research data for this study, employing both qualitative and quantitative approaches, and utilising more innovative methods such as walking interviews and video diaries.

The methods were as follows:

- Documentary analysis of key documents and key information gathering (e.g. on postgraduate research methods training provision)
- Online and hard copy questionnaires with current doctoral students and postdoctoral employed researchers
- Qualitative walking / place-based interviews with University of Edinburgh PhD students (including a small number of pilot interviews)
- Video diaries by current University of Edinburgh PhD and Masters students studying a core methods course
- Telephone / video and face-to-face interview with 'experts'

Table 4 below provides a summary of the various participant groups, the methods that were used to consult them, as well as which of the study research questions their views helped to answer.

Table 4: Research Participant Groups by Methods and Research Questions		
Participant Group	**Methods (number of people consulted)**	**Research Questions Addressed**

Postgraduate Students (Edinburgh University)	Walking Interviews (11), Pilot Interviews (2) Online Questionnaires and Video Diaries (7)	2, C, E – H, L & M
Scottish Graduate School Funded Postgraduates	Hard Copy Questionnaires	As above
Postdoctoral Employed Researchers	Online Questionnaires	As above
Key Academic and Policymaking Experts (involved in the ESRC, AQMen and Q-Step.)	Telephone, Video and Face-to-face Interviews (4)	1, 2, A – F, H - M

Quantitative methods, such as surveys, were selected as they potentially enable a greater number of participants to be consulted and for participants to be consulted who may have been inaccessible via face-to-face methods. Qualitative methods, such as video diaries and depth interviews, were also selected as they typically allow for greater detail to be gathered on participants' views and for their responses to be probed and clarification / elaboration sought where required.

3.3.4 Influential factors on views

Key aspects that I hypothesised as being likely to influence how postgraduate students perceive and experience their doctoral research methods training were, partly based around key findings from reviewing the relevant literature and empirical research evidence:

1. Which discipline they are situated in and their disciplinary identity;
2. Prior experiences of, and exposure to, methods training and whether this was positive or negative in relation to individual methods;
3. Research methods preferences and which methods were being used in their Masters / doctoral research project;
4. Methodological identity (Elizabeth and Grant, 2013) i.e. whether they envisage themselves as primarily a qualitative, quantitative or mixed methods researcher
5. Gender;

6. Year of study, and specifically whether they are nearing the completion of their studies, and at the stage of reflection on the fit between themselves and potential post-doctoral employment, or whether they are far earlier on in their study journey and not yet thinking about occupations
7. Student status attributes such as whether they were a domestic or international student and whether they were studying full or part-time.

Drawing on these hypotheses of aspects that may influence attitudes towards core and mandatory methods training, the relevant characteristics of the study participants, in relation to these were considered (see Table 8, appendix 2 for a summary of these characteristics for my research participants).

3.3.5 Rationale for methods' choices

3.3.5.1 Pilot postgraduate student interviews: Rationale

During semester 1 of 2015-16, I conducted a small exploratory, qualitative study with 2 postgraduate students at the University of Edinburgh. This study formed part of the 'Data Collection' course that I undertook. The 2 students were both doing their doctorates, one was in their 1st year of study and the other was in their 2nd year. Both were in the School of Social and Political Science and doing a PhD in Sociology. I carried out in-depth, semi-structured qualitative interviews with the students and transcribed the interviews in full. I analysed the results using the qualitative data analysis software package NVivo 11 and employed a combination of conventional and directed content analysis (Hsieh and Shannon, 2005) as my theoretical approach to the coding and analysis.

During the exploratory study, I wished to unpack how the doctoral students had responded to prior exposure to research methods and the potential influence of these experiences on their attitudes to these methods, in general, and to learning them at postgraduate level. I hypothesised that these previous experiences, and how the students framed these experiences, were likely to have a role in shaping a student's research identity. This, in turn, could influence whether the students feel that breadth or depth is more important in how postgraduate social research methods are taught. Moreover, transferable skills and enhancing employability are emphasised in the ESRC and other policy literature, as key justifications for the shift to learning generalist methods' skills (ESRC, 2009;

ESRC, 2015; Park, 2007). As such, I also wished to explore whether interviewees envisaged a link between choosing to do their doctorate, studying research methods courses and their future employability. The 3 key areas from the literature that I wished to investigate were: 1. the influence of factors (such as maths / statistics anxiety and prior quantitative methods learning experiences) on the students' attitudes to quantitative methods, 2. students' views on compulsory methods courses and 3. students' views on any link between doing a PhD and employability.

3.3.5.2 Walking and place-based interviews: Rationale

The potential significance of interviewing whilst walking is that there may be a "relationship between what people say and where they say it" (Evans and Jones, 2011, p. 851). Although walking interviews have been most typically used in the field of (human) geography to explore people's narratives and experiences of particular places and landscapes (Holton and Riley, 2014), I felt that this method offered great potential for application to my study and participant group. Walking interviews can be thought of as 'walking probes' (Holton and Riley, 2014) as they offer an opportunity to stimulate an interviewee's thoughts and memories on a topic depending on where the interview is taking place at the time.

I chose a combination of walking outside and place-based interviewing. Place-based interviews occurred in the lecture theatres / seminar rooms in which students had studied their particular methods courses, where this was possible and desirable. For example, on occasions when the room(s) were unoccupied at the time of the interview, and when visiting that room fitted with the flow of interview, dependent on whether we walking near the location at the time of that particular section of the interview. In practice only 3 out of the 11 PhD students were interviewed partly walking and partly in a lecture theatre. This was in fact attempted several more times, however, the room was unavailable at the time of interview. Drawing on the work of Housley and Smith (2010) I considered that place-based interviews may evoke additional, or different, feelings / memories about that learning experience, as a result of being in the actual room where students had studied particular research method(s), than being a 'neutral' room. Kilburn, Nind and Wiles (2014) discuss students' experiences of learning during methods training courses using video taken during the training sessions as a stimulation for focus group discussion following the training. Parallels can be drawn between potential effects of the stimulus of place-based video footage in Kilburn, Nind and Wiles' (2014) study and my research participants' stimulus of returning to lecture theatres where they had originally undertaken their methods training.

Mobile methods can confer particular advantages over static methods. Being interviewed whilst moving can be relaxing for both the interviewee and interviewer and can help to break through the potential awkwardness of the interview situation (Riley, 2010). It can also help to mitigate against many interviewees' desire to please the interviewer, by giving what they think is the 'right' answer (Evans and Jones, 2011). Moreover, it avoids the need for continual and direct eye contact, which some can find unnerving, as the interviewer and interviewee walk alongside one another, rather than facing each other directly. These advantages of walking interviews were fundamental in my choice to use the method, as I wanted the students to feel relaxed and able to express their true and situated feelings about the mandatory methods courses they had studied at the university whilst being in the university space. Walking interviews also have the benefit of being a potentially empowering method for interviewees, as they can be more in control of the interview process (Riley, 2010), another element of appeal in my methodological decision-making. As is the case with any research method, however, walking interviews also present some challenges and disadvantages. I noted particular technical challenges in conducting walking interviews, for example there is a need to have especially high quality and bespoke audio recording devices with additional equipment such as 'wind-jammers' to reduce background noise from wind etc and a clip on microphone in order to hear both the interviewer and interviewee's voices outside. Loud background noise such as emergency vehicle sirens can be a distraction and a challenge (Dubé *et al.*, 2014) as well as having to navigate the physical space whilst avoiding potential hazards such as animal faeces on the ground and circumventing other pavement / path users.

3.3.5.2.1 Walking interviews: recruitment

Walking interview participants were recruited by sending an email about my research around the University of Edinburgh's social science postgraduate student distribution list. In total, three trawls for participants took place, the first yielded 3 students, followed by a second email which attracted a further 5 participants, yet all were female from both rounds of invitation emails. I then sent out a further email in an effort to recruit some males for the walking interviews, as none had come forward. This was successful in gaining 3 males to join the study participants, making the total of 11 participants for the walking interviews and a further two who took part in the pilot study (with interviews in university meeting rooms), thus 13 walking interviews / interviews with students.

Appendix 2 displays the key characteristics of the 20 qualitative research participants for both the walking interviews (13) and the video diaries (7), such as their gender, discipline, year of study and PhD research methods.

The final key element of the walking and place-based interviews, was that I wished to consult postgraduate students who were further on in their PhD studies (3rd or 4th year students), in order to capture how views may change as a student journeys through their PhD and looks towards future employment. This was drawn from (Orton-Johnson and Webb, 2011) findings that, as doctoral students neared the end of their PhD, prior perceptions of themselves as bounded to their discipline shifted to a view of themselves more as a social scientist, who required marketable and generalist research skills for employment. This contrasted with my decision to capture the views of students early on in their PhD or those studying for a Masters, via the video diaries, at the time of studying the actual mandatory broad methods courses, discussed further below.

3.3.5.3 Video diaries: Rationale

A key advantage of diary method emphasised by (Bartlett, 2015) is that it removes the researcher from the point of data capture, which affords participants private space to record their views. Additionally, it can provide a more accurate record than solely conducting a qualitative interview, as diary reflections are usually contemporaneous i.e. recorded soon after the event (Bartlett, 2015). Finally, diary methods enable participants to express their views longitudinally, so that it is possible to see if, and how, perspectives change over time (Bolger *et al*., 2003 cited in Bartlett, 2015). This final point was especially appealing to me as I hypothesised that postgraduate students opinions of their core methods courses, may shift as the course progressed.

Moreover, the fact that visual methods, such as video diaries, offer a chance to re-watch data and analyse more than just verbal content (Heath, Hindmarsh and Luff, 2010), was also a factor in choosing this method, as I felt it would be very useful to analyse non-verbal communication such as tone, facial expression and so on. I had also hypothesised that this age group, and profile, of participants would be likely to find recording a video diary on their mobile phone, a relatively familiar experience with vlogging (video blogging) and video diaries, by means of a diary room, on reality TV programmes, such as Big Brother, being commonplace since around 2005 in the case of vlogging (Kaminsky, 2010), and the year 2000 in the case of Big Brother.

Finally, further advantages of the video diary method which made it appealing for my study are that it is not overly burdensome for participants, especially compared with written diary methods. Participants need only record a short video, rather than taking part in a long interview or writing regularly in an electronic or hard copy diary, both of which require a greater time commitment. Postgraduate students studying research methods courses were likely to be an extremely busy participant group, therefore, I speculated this method would be relatively attractive, from the perspectives of convenience and not being especially time-intensive.

3.3.5.3.1 Video diaries: Recruitment

It was decided to consult both Masters and early stage PhD students (in their 1st year), as these are the students who typically study core methods courses. The original intention was to recruit 10 students in term 1 and 10 students in term 2, making 20 video diary participants in total. Students were asked to record short (up to 2 minute) weekly video diaries using their mobile phone or laptop (or similar technology). Video diary recruitment was carried out in 2 key phases, across 2 university terms:

1. Term 1 of 2016-17: An email seeking participants was sent out to postgraduate student distribution lists. However, recruitment for the video diaries proved extremely challenging with no participants initially volunteering to take part. Following substantive efforts (detailed on p 104, where fieldwork issues in recruitment are reflected upon) 2 postgraduate students agreed to record video diaries.

2. Term 2 of 2016-17: Prior to the commencement of this term, the course convener for 'Research Design' (one of the core methods courses at the University of Edinburgh) was approached to ask approval for me to publicise my research by appearing in person to speak to course students at the front of the class, during the first lecture. Additionally, I sent out a recruitment email to postgraduate student distribution lists. Eventually through these methods, 6 students in total recorded diaries, 5 by video and 1 an electronic written diary. Further discussion and reflections on the recruitment issues experience for term 2, are provided on p 104. Table 8 in appendix 2, presents the characteristics of the video diary participants. It should be noted that one diary participant did not wish to record a video diary, and instead provided a written diary.

3.3.5.3.2 Video diaries: completion instructions, process and post-diary follow-up interviews

Video diary instructions and process: Postgraduate students were asked to record their video diaries on their mobile phones or laptop / PC, soon after their 'Research Design' lecture or tutorial. Sharing the video diary with me was done via Dropbox, or in one case via Google Drive, as the participant was not comfortable about using Dropbox.

Students were asked to record weekly diaries of up to 2-minutues long, except for the first and last diary entries which were to be up to 5 minutes long each. For technological reasons (and based on feedback from a term 1 participant) term 2 participants were asked to record the 5-minute diaries in 2 shorter entries and upload these in that format.

It was suggested to students that the first video diary could ideally be used as a reflection on any previous core methods courses that they may have done last term, as well as expressing their views at this initial stage on whether they felt that students should have to study mandatory methods course. It could also be a forward look and additionally highlight what they hoped to get out of the 'Research Design' course.

The last video diary was advised to be a backward look; did things turn out on the course as they anticipated at the outset? Moreover, it was proposed to students that they may wish to express a view at this final stage of the course on whether postgraduate students should need to do compulsory methods courses. Had their view changed at all from the view they held at the outset of the term?

The guiding approach for the weekly video diaries was semi-structured, in that students were given some guidance on what they may wish to talk about, but they were permitted to raise anything they wished to instead or as well as the topics below:

- Generally, how has the course gone for you this particular week?

- What has been good about the course this week and why?

- What has been not so good about the course this week and why?

- What sort of things have you been learning about this week? How have you felt learning these things (any anxiety, feelings of frustration or enjoyment / satisfaction)?

- Have you learned anything this week that you think might be useful to you later on: 1. In your doctoral / Masters research, 2. In future jobs?

- What do you think in general about the fact that many students need to study compulsory research methods courses? Has your view changed at all from last week?

Post-diary interviews: Drawing on an approach advised by Bartlett (2015), participating students were invited to take part in a post-diary interview, at the end of term after all their diaries had been completed. Post-diary interviews were conducted with one participant from term 1 and four from term 2, therefore, five post-diary interviews in total. These interviews were exceptionally useful in exploring any views expressed in the video diaries that I wished to gain more detail on, as well as providing the participants a forum for providing their account of what completing a video diary was like for them.

3.3.5.4 Questionnaires: Rationale

It was decided to also use questionnaires to investigate views of PhD students (current and former), in order to improve the reach of the study and to gain access to an increased number of views, albeit more superficially. Questionnaires were also used to gain the perspectives of employed postdoctoral researchers to investigate whether having undertaken broad research methods training was advantageous once employed, or if not have these skills presented a problem for doctoral graduates.

A mixed methods approach to research, using both qualitative and quantitative techniques as I have done, can confer particular advantages such as providing both breadth and depth of data and an opportunity to triangulate results if the same participant group type is consulted via both methods (Hesse-Biber, 2015; Creswell, 2011).

3.3.5.4.1 Questionnaires: Distribution

Two formats of questionnaires, some online and some hard copy, were distributed for my study, one to current PhD students (both those in the School of Social and Political Science at the University of Edinburgh and those who were part of the Scottish Graduate School of Social

Science) (SGSSS) and the other to currently employed PhD graduates in various parts of the UK. A different questionnaire was used in online format only with postdoctoral employed researchers.

3.3.5.4.2 Questionnaires: Respondents

3.3.5.4.2.1 Current PhD Students: Scottish Graduate School PhD Students

Initially I aimed to invite 400 ESRC funded students in the Scottish Graduate School to participate in my survey, who study at a variety of different higher education institutions within Scotland via an email sent to distribution lists. This was with the intention of extending the reach of the research beyond the immediate study site of Edinburgh, gaining the perspectives of postgraduates elsewhere in Scotland. Due to data protection, the gatekeeper at the SGSSS, however, would not permit this approach and instead stated that I could seek to gain completed questionnaires by distributing them in person at the SGSSS summer school 2017.

The questionnaire was distributed in hard copy to SGSSS Summer School delegates in June 2017 by personally attending the event, approaching delegates face-to-face and inviting them to complete a questionnaire. In total 45 completed questionnaires were received in this way. Data from questionnaires was manually entered into Stata using syntax.

The questionnaire asked SGSSS PhD students about: their previous higher educational experiences; their prior experience of studying research methods; motivations for doing a PhD (if appropriate); whether they are currently doing any mandatory methods courses; their views on mandatory methods courses and any career plans for after graduating with their postgraduate degree.

Inviting a sample of ESRC funded students across the whole of the UK to participate in the survey was considered, however, data protection issues were likely to mean that it will not be possible to access the contact details of these students via the ESRC. Consequently, this strategy was abandoned.

3.3.5.4.2.2 Current PhD Students: University of Edinburgh PhD Students

After gaining approval from the School of Social Political (SSPS) Science Graduate School, a recruitment email was sent to current social science PhD students inviting them to complete the online questionnaire. Questionnaire respondents could be from any year of study and studying full-

time or part-time. Following several follow-up emails trying to boost participation, 34 completed online questionnaire responses were received.

Attempts were made to contact the Edinburgh University Economics Department, however, no response was received in a timely manner, thus sadly economist PhD students had to be omitted from the potential questionnaire respondents. The unfortunate limitation of this group from the study will be further reflected upon in chapter 8, the discussion chapter.

By both methods, in total 79 completed questionnaires were received from current PhD students.

3.3.5.4.2.3 Currently employed postdoctoral researchers

The online questionnaire was sent out to a range of employed postdoctoral researchers (private sector research companies, the Scottish Government researchers, PhD graduates who are part of the University of Edinburgh Scottish Graduate School of Social Science (SGSSS) and former School of Social and Political Science PhD students). The Edinburgh University Psychology Department was also contacted and the online questionnaire was distributed to some of their academic staff. In total 50 questionnaire responses were received via these routes.

Responses were received from a variety of universities around the UK including: the most from the University of Edinburgh (31 / 50 responses) and 2 from each of University College London (UCL) and the University of Nottingham. A single completed response was received from a range of other universities around the UK including some in Scotland: Edinburgh Napier University; University of St Andrews; University of Stirling; University of Glasgow; Fraser of Allander Institute University of Strathclyde and also others in England: London School of Economics (LSE); London South Bank University; Royal Holloway, University of London; Liverpool University; Loughborough University; University of Nottingham and the University of Warwick. Two individual questionnaire responses were received from employed PhD graduates who had studied at an overseas university and these were Panteion University in Athens, Greece and the University of Otago in Dunedin, New Zealand.

3.4 Fieldwork issues

This section will outline some fieldwork issues experienced in preparing for, and conducting, the doctoral research. For example, there were recruitment problems for some elements of the study,

especially the video diaries and online questionnaires, and issues were experienced in accessing some participants, such as PhD students in the SGSSS, necessitating a change of approach.

3.4.1 Student Video Diaries: Recruitment difficulties

As mentioned briefly earlier on p 99 considerable difficulties were experienced in recruiting postgraduate students to complete video diaries.

Term 1, 2016-17: An email to recruit participants was sent around the School of Social and Political Science postgraduate distribution list. When this yielded no volunteers, a visual methods group, that I was a part of, offered to allow me to distribute my recruitment advert, via their Facebook page. One Masters student who was part of the visual methods group, came forward following this. I approached the course convener of the 'Data Collection' and 'Core Quantitative Data Analysis' courses, designed a recruitment flyer about my study (which was shown during a 'Data Collection' lecture) and also a recruitment video (shown during a CQDA lecture and also a Data Collection lecture given by one of my PhD supervisors). Following these substantive efforts, one further Masters student volunteered to take part, making 2 participants in total for term 1.

Term 2, 2-16-17: After personally presenting my research to the 'Research Design' students at their first lecture and inviting participation, one student (who I knew personally) came forward to take part. This student also said that they would mention my study to other students in their tutorial group. A tutor on the Research Design course, who is also a personal contact, said that she would publicise my research at her tutorials. However, no-one further came forward to take part. I sought the advice of a diary method specialist, Ruth Bartlett, who advised offering a financial incentive to boost participation. A further recruitment email was sent to the postgraduate distribution lists mentioning the financial incentive of a £15 Amazon gift voucher, and 4 further students came forward over a short period of time, responding to these recruitment methods. In the interests of parity, the previous 2 video diary respondents (in term 1) were also retrospectively given the same financial incentive.

It is difficult to know exactly why it proved so challenging to recruit participants for the video diaries. My reflections on this, discussed in relation to the literature, are set out below.

- *Need for commitment to ongoing participation over a time period*: it is possible that the fact that the video diary would need to be recorded on a regular (weekly) basis for a particular period of time rather a one-off participation, was unappealing to students. Bartlett (2015) argue that requesting diary completion over an unduly long duration is likely to lead to non- / partial non-completion and dropout from the study. I took account of this by only inviting students to complete their diaries for a 10-week period over the duration of the course. However, for many even this may have been too much. The argument presented throughout this thesis is about 'stretched' students. Participating in my research could be seen as just another thing that they had to do for which they did not have sufficient time, when they were already inordinately busy with their studies.

- *Camera shyness*: some students might not have liked the idea of having to appear on video (Roberts, 2011), perhaps especially to someone they did not know personally. They could worry about being judged on their appearance or accent or various other physical attributes. This hypothesis is supported by the fact that one of my diary participants elected not to record a video diary but instead provide their views in written diary form.

- *Technology issues*: some students might have worried about whether their mobile phone would be suitable for recording a video and also concerned at the space it would take up on their phone, until it had been shared and could be deleted. It also initially proved slightly tricky to share the video diaries via Dropbox as had been proposed, for some participants, although this was overcome. Perhaps some students generally worried about being able to navigate these kinds of technical issues and then feared that they might appear technologically deficient to the researcher, a student peer.

3.4.2 Online questionnaires: Recruitment difficulties

3.4.2.1 Currently employed postdoctoral researchers - online questionnaire

Gatekeepers were approached for each of the research employment sectors included in the study: the Scottish Government, private research consultancies for example, the Scottish Centre for Social Research and Kantar Public (formerly TNS-BRMB) and the School of Social and Political Science Graduate School and also the leader of the Social Research Association (SRA) to gain

access to a pool of independent research consultants. Once agreed with gatekeepers, the online questionnaire was sent out to employed researchers (seeking those with PhDs), typically via email distribution lists. However, regarding the Scottish Government, private research companies and independent research consultants the actual numbers of completed questionnaires received was low, as few of the employed researchers contacted actually had PhDs, as these are not specifically required to work in their fields. In addition to this, the Edinburgh University Psychology Department was also contacted and the online questionnaire was distributed to some of their academic staff. In total 50 responses were received by these recruitment methods.

3.4.2.2 Current PhD students – questionnaire

A modified online questionnaire (from that above) was again developed using the British Online Survey tool. The original intention had been to send the online questionnaire round the SGSSS distribution list however, as mentioned before the gatekeeper refused to permit access for this. I was, however, invited to come to the SGSSS Summer School in June 2017 and distribute paper copies of the questionnaire. This involved a change in approach, printing off multiple copies of the questionnaire and personally attending the event to publicise my doctoral research. I was not permitted to talk to delegates at the start of their learning sessions but was authorised to approach them during coffee and lunch breaks. I went up to groups or pairs of people, asked if I could speak to them for a moment, told them about my study, mentioned the incentive and asked if they would like to complete a questionnaire. My feelings of discomfort about utilising this recruitment method are further described later in this chapter on p 118, where I reflect on some ethical considerations. In total, 45 completed questionnaires were received using this method.

The questionnaire was also distributed to current Edinburgh University social science PhD students via a hyperlink sent to the student email list and 34 responses were received, making a total of 79.

3.5 Reflections on 'insider' researcher status – "a double-edged sword"?

The personal attributes of a particular researcher, as well as whether they are a research 'insider' or 'outsider', has an impact upon the research process and the data collected (Kita, 2017). Merton (1972) Merton (1972, p.21) describes insiders in research as "members of specified groups and collectivities, or occupants of specified social statuses". Crucially Merton (1972) also argues the

importance of “privileged access” (p 11) to specialist knowledge available to researchers with insider status. Applying this to the context of my research, I very much occupied an insider researcher status, being a social science PhD student myself, and seeking, at least in part, to gain the views of social science PhD students. Arguably, I was studying myself.

It is claimed, however, that an individual researcher is never continually an insider, an outsider or an in-betweener (Merriam *et al.*, 2001). Some characteristics make them an insider in one regard, however, they are an outsider in relation to a different attribute. For example, I shared the common attribute of being a social science PhD student with all of the students that I conducted qualitative research with (and was therefore, an insider in relation to this), however, if gender is an important attribute, then I was an outsider, at least on some level, when interviewing a male student. Echoing the mutability of the insider / outsider status in research, an individual can be an insider-outsider, for example if an insider when abroad yet an outsider in their own locality (Ergun and Erdemir, 2009) or even an in-betweener (Brooks, 2016), who straddles the divide between the insider and outsider statuses to some degree. Ultimately it depends which characteristics or shared experiences are likely to be the most significant in shaping interviewer-interviewee dynamics, in that particular research setting.

Being an insider can confer particular benefits, as well as potential disadvantages in conducting research (Kita, 2017) and Mercer (2007) has depicted it as “wielding a double-edged sword” (p. 7). Advantages include that those being researched may feel more comfortable in revealing information to someone with insider status (Hockey, 1993) and also that gaining access to peer research populations is likely to be less problematic. I noted when conducting my doctoral research that it was relatively straightforward to recruit PhD students for the walking interviews, which could have been linked with the fact of my status as a fellow doctoral student. Reflecting further on this, although walking interviewees did not explicitly vocalise that they had volunteered in order to help a peer, I had a sense that the shared experience of being a doctoral student, and empathy towards to the difficulties encountered by most doctoral students in recruiting research participants, was part of their decision to participate.

In terms of challenges and disadvantages linked to the ‘insider’ researcher status, Merton (1972) and Mercer (2007) posit that the insider can be biased and Shah (2004) Shah (2004) argues that being an insider can lead to a reduced likelihood of observing some issues emerging from the research, as a result of over familiarity with the context. Regarding the insider and potential

interview questions, Mercer (2007) postulates that insiders are less likely to ask sensitive questions, whereas Hockey (1993) suggests that insiders may avoid asking questions that could seem unimportant or obvious due to tacit shared knowledge and for fear of appearing banal. Conversely, the insider status of the researcher can also impact upon the interviewee in manifold ways. The respondent may fear being judged by a peer, which could lead to withholding that which they might reveal to an 'outsider' or 'in-betweener' (Shah, 2004). All research runs the risk of compliance, in other words an interviewee saying what they think the interviewer wishes to hear, however, Mercer (2007) theorises that the insider dynamic intensifies this still further. Additionally, in my own research, I observed a concern over being 'caught out' during one of my pilot interviews. 'Penny', during the session where I asked about the interview process, after the main interview had concluded, revealed she had been worried that I would ask her to remember details about the content of the methods courses and that she would feel uncomfortable if she could not recall them:

"I suppose when I was coming I was a bit concerned about what you were going to ask about the kind of content of the methods training that I had experienced, and to kind of recall all the methods that I'd learned about. And my recall isn't all that good." (Penny, PhD)

In addition to the points highlighted in the literature above, I also noted that respondents may be likely to assume shared knowledge and understandings or refer to previous conversations and knowledge. This can especially be the case if the interviewer and interviewee personally know each other to some degree prior to the interview taking place. For example, in one of the pilot interviews, the following exchange occurred, which illustrates assumed shared knowledge:

Barry: "And then I studied quantitative methods which is all about trying to construct the social world and make sense of it using numbers. *Well, you'll know about this*."

Researcher: "I think so, but can you tell me more about *what it was like for you* studying quantitative research methods?" (Barry, PhD)

Thus, is an insider status a "double-edged sword" in conducting research, as Mercer (2007) argues? Debatably it is, although I propose that disadvantages can be carefully managed and minimised with some forethought, and that advantages outweigh the disadvantages, at least for my study.

3.6 Reflections on approaches: interviewing and qualitative data analysis

3.6.1 Approach to qualitative interviewing

I sought to run the qualitative interviews in a manner that combined flexibility for interviewees, whereby they could raise topics that were important to them, within some kind of framework to facilitate them in expressing their views (Rubin and Rubin, 1996; Rubin and Rubin, 2005). I considered using unstructured interviews, which transfer a higher degree of control over the interview's direction to the interviewee whilst still having an overall research question or topic determined by the researcher (Roulston, Demarrais and Lewis, 2003), however, concluded that this approach could be too flexible and lacking in guidance for some participants. Thus I chose what is arguably called a semi-structured interview, although the distinction between semi-structured and unstructured interviews is perhaps not as clear-cut as it might appear on the surface, as the unstructured interview rarely lacks any structure at all and some semi-structured interviews can be very fluid, dynamic and responsive to the interviewee. A semi-structured interview frequently utilises some pre-set questions, although the structure is typically rather flexible with the order that the questions are asked not necessarily remaining fixed and some questions may even be discarded, if they are felt to be inappropriate or beyond the limits of remaining available time (Mason, 2002).

Mason (2002) describes a qualitative interview as having a degree of informality, and can be described as 'conversation' (p. 63), but a 'conversation with a purpose' (Burgess 1984 cited in Mason 2002; (Rubin and Rubin, 2005, p. 129; Burgess, 1984 cited in Mason, 2002).

Within certain past epistemologies, research participants were typically viewed as being mined for data. Striving to remain impartial and objective whilst keeping themselves, and their values, out of the research as much as possible was paramount for researchers to avoid contaminating the findings. Contemporary sociology generally agrees that such as approach is unrealistic, at best, and undesirable at worst (Giddens, 1977; Byrne, 1998; Oakley, 1981). In social constructionism, searching for an 'objective truth' that somehow exists in the ether, is seen as unviable (Hacking, 1999; Law, 2004; Abbott, 2001) and instead researchers are concerned with truly attempting to gain the views and experiences of participants as they perceive things, rather than engaging in some verification of whether their words are objectively 'true' or not, which would arguably be more akin to realism. The social constructionist epistemology resonated with my own approach of truly

seeking to understand and unpack how my research participants viewed research methods training provision, rather than establish the veracity of their statements. The idea of 'truth' is a contested notion and perspectives of what is 'true' is contextual (Cronon, 1996).

Moreover, I argue, in line with much of the literature, that the researcher has a role to play in shaping the research data. Reinforcing what I discussed on p 107-8 regarding my insider status in this research, and the possible impacts of this, I view qualitative data as having a co-constructive nature, as both the interviewer and interviewee are engaged in unpacking and interpreting meaning of the qualitative interview conversation in terms of the questions asked and the answers provided (Brenner, 1985). Mason adds to this perspective with the idea of 'interactional exchange' in the qualitative interview (2002, p. 62).

In keeping with my perspective of the co-constructive nature of qualitative data, and rejection of the positivist perspective of data mining of participants, I was guided by the approach of the 'active interview' proposed by Holstein and Gubrium (2004). Theorists such as Garfinkel (1967) and Blumer (1962) argue that data and knowledge are produced through action and interaction. The 'active interview' approach recognises this and proposes that the personal attributes of the researcher, the kinds of questions that they ask and the way that they ask them, their body language and facial expressions are all highly influential on the data collected. Decisions around whether to interrupt, probe or not at particular moments will all affect the precarious nature of human interaction and exactly what is said by the interviewee. A different interviewer may well elicit some variation in responses, even with exactly the same interview topic guide. An 'active interviewer' accepts that it is unfeasible, and perhaps undesirable, to think that the interviewer does not influence the interview in any way. Ignoring this is a fallacy and the approach should instead be to really attempt to unpack the effect that that the interviewer has on the research and to additionally place importance on the ways in which data are constructed, as opposed to solely the content of the data (Holstein and Gubrium, 2004).

3.6.2 Theoretical approach to qualitative data analysis

3.6.2.1 Data familiarisation

My approach to initial step 1 'data familiarisation' (Bryman, 2012) with my qualitative material comprised 4 key elements: transcribing, developing precis, formulating initial ideas and using word

counts for a particular interviewee. Frequently, the process of transcription is not even described in many journal articles, it is merely stated that it occurred (Lapadat and Lindsay, 1999). As Lapadat and Lindsay (1999) argue, transcribing is actually an early stage of data analysis as decisions are made on what to include and exclude. For example, should the part where the interviewer outlines the research study to the interviewee be transcribed? Shall every hesitation and false start, which are typical of ordinary speech, be transcribed? In terms of my approach, I decided to omit my interviewer introductions about the study and also any hesitations as I used thematic analysis which focuses on the content and themes arising, as opposed to discourse analysis, which spotlights how things are said (van Dijk, 1993).

For the pilot interviews, I also developed segregated transcripts (those which omit the interviewer's contributions) as these collate all of the interviewee's responses and thus facilitate developing a precis. Drawing on the approach proposed by Bryman (2008), I read the interview transcripts and jotted down hand-written notes of things that occurred to me in these early stages about the data.

I chose the software package NVivo for the qualitative data analysis as some of the literature (e.g. Welsh 2002) indicates that it is easier to use than some other software and I had also received training in its use during my PhD (as part of the 'Analysing Qualitative Data' course). CAQDAS (Computer Assisted Qualitative Data Analysis) has sometimes been criticised for creating a distance between the researcher and the data compared with manual pen and paper methods (Gibbs, Friese and Mangabeir, 2002). From my perspective, however, it is invaluable when analysing relatively large volumes of qualitative data, moreover software such as NVivo contains many tools which replicate what a researcher does in the stages of manual analysis, but makes the process easier and provides an auditable record of what occurred (Richards and Richards, 1991; Welsh, 2002). For example, 'memos' in NVivo are electronic forms of a post-it note that a researcher might stick on an interview transcript or of a hand-written note in the margins.

My overall approach to the qualitative data analysis combined inductive and deductive approaches. Regarding deduction, there were particular issues that I wished to investigate in my research, for example views on whether doctoral training prepares students for later employment and also attitudes to learning statistical analysis techniques and quantitative methods. Consequently, I assigned some 'a priori' codes developed from the literature and my research questions to the data. This process will be outlined in more detail below. However, I also induced some codes by seeing what emerged from the data. Thus, I would describe my data analysis approach as using

'content analysis' in its two forms, 'conventional content analysis', which inductively develops codes from the data and 'directed content analysis' which deductively generates 'a priori' codes from the literature to create hypotheses which are then tested out via collected data. I describe the qualitative data content analysis process in greater detail below.

In the early stages of data familiarisation, the word count query was a useful feature in NVivo for gaining a sense of what a particular interviewee said most frequently, and how this varied across different interviews. This provided a way of commencing my thinking about what sorts of words (or themes / nodes) might be emerging from the data and useful to explore further and code in NVivo.

3.6.2.2 Coding qualitative data

However, for the main stage of coding and analysis I used the full i.e. unsegregated transcripts as, in concordance with Thompson and Barrett (1997), I feel that the interviewer's questions and contributions provide essential context for understanding what the interviewee says. Coding is necessarily subjective and different researchers may code varyingly. Judgements are inevitably made about what data merits being coded as well as what particular codes will be named (Mason, 2002). I coded mainly for themes in the data although I also coded for 'keywords' whereby I spotted any terms that were unfamiliar to me (and noted these) and also observed whether some words were repeated many times during an interview, by a particular interviewee and also across interviews.

Step 2 in coding according to Bryman (2008) comprises re-reading the transcripts, signposting possible data for coding and beginning to think about possible early codes or data labels. Step 3 grounds this process still further, by again reading the data but this time coding it more systematically. My preference was to code one interview at a time, rather than look across all interviews for instances of a particular code, although either approach can be taken.

Code names typically go through many iterations and mine were no exception. The first time I named a code, it was usually rather long comprising several words. As I digested the research literature on qualitative coding, I began to develop much shorter code names which were more user-friendly (Charmaz, 2006) yet still meaningful. However, when the code names were briefer it was increasingly important to write a description for the code in the code notes section, as the exact meaning was easily forgotten between coding sessions.

3.6.2.2.1 Conventional content analysis

I used content analysis to generate thematic codes, specifically 'conventional' and 'directed' content analysis (Hsieh and Shannon, 2005). 'Conventional' content analysis involves codes being developed from the data and is thereby a flexible approach. My code development via conventional analysis went through several stages. First, I developed a list of early codes through initial data familiarisation. Second, I examined the codes to see if they accurately described each piece of data coded at them or if new codes should be generated or whether codes should be combined. NVivo's functions were particularly useful in this as I was able to click on each node (code) to check that all instances of data coded there were truly applicable. The final stage in this part of the analysis was to reflect analytically on how codes could be organised hierarchically, and which codes sit above others and group them together ('umbrella codes'), and which are the sub codes below them with codes sitting together in 'families'. NVivo terms the umbrella codes, 'parent nodes'. For example, an extremely crucial umbrella code for my research data was 'views on compulsory courses'. Fifteen sub-codes underpinned this overarching umbrella code, including: 'view changes over time'; 'usefulness for PhD research'; 'differing needs Masters and PhD students'; 'tension generalism versus specialism'; 'should broad be mandatory'; 'compulsory courses rationale'; 'positive'; 'negative'; 'compulsory course levels'; 'future self will thank you' and so on.

As can be seen from this account of my coding process described above, qualitative coding is not linear, it is iterative (Mason, 2002) and researchers need to consider their codes, and whether they are truly describing the data, many times. As described in Bryman (2008), coding becomes increasingly analytical as it progresses, with each stage becoming more abstracted from the raw data. All the qualitative codes can be organised into a code list or coding frame within either the qualitative data analysis software such as NVivo which I used, or a separate document listing all of the codes within their hierarchies and inter-relationships.

3.6.2.2.2 Directed content analysis

In contrast to conventional content analysis (which takes more of an inductive approach), directed content analysis takes a deductive approach and uses findings from existing literature and / or ideas from prevailing theory in order to develop 'a priori' codes (Hsieh and Shannon, 2005). I used a combination of conventional and directed content analysis to probe my qualitative interview findings. For an example of my use of an 'a priori' code, I particularly wished to investigate whether

or not interviewees perceived a relationship between studying for a PhD, learning about methods and their future employment. The question 'should a PhD prepare students for work?' was paramount in this investigation of the qualitative data and results from this analysis are presented in my data chapters findings, specifically chapter 7. The rationale for seeking to investigate the potential relationship between PhD study, methods learning and later employment arose from the fact that obtaining transferable skills and increasing employability are cited as key reasons for making postgraduate methods training broader, with an emphasis on gaining core and broad learning in research methods, as well as specialist knowledge of particular methods at a deeper level (ESRC, 2009; ESRC, 2015; Park, 2007.)

3.6.3 Approach to the quantitative data analysis

The data from the questionnaires with current PhD students and employed PhD graduates were analysed as follows. Prior to analysis an analysis plan was prepared taking into account the key research questions and the independent variables that I hypothesised could reveal difference, based on my own reflections as well as key points emerging from the literature. Key independent variables for analysis were: gender, age, year of PhD study, main set of methods used for the respondents PhD research (coded into mainly qualitative, mainly quantitative or mixed), whether the respondent was a domestic or international student; whether they studied part-time or full-time; their main motivation for doctoral study (and whether this was instrumental, intrinsic or opportunistic) and their career aspirations after their PhD. Respondents were not directly asked whether they were a domestic or international student, coding for this variable was developed by examining responses to the question on which academic institutions they had studied their previous undergraduate and any other postgraduate degrees studied such as Masters etc. type degrees at whether these were in the UK or abroad.

Additionally, I hypothesised which university a PhD student attended, and their academic discipline could reveal differences in views due to variation in perspectives on different methods linked with particular academic disciplines and also potential variation in research methods training provision across institutions. However, unfortunately the numbers of respondents in some of the sub categories for these variables were too low for meaningful quantitative analysis so this was not included in the thesis write-up.

The key dependent variables I wished to investigate included: views on whether postgraduates should study broad methods; whether each of qualitative and quantitative broad methods training should be compulsory; whether doctoral students should learn advanced methods *in principle*; whether learning broad methods sacrificed the time available for advanced methods study; whether the research methods training during the PhD had been useful, whether it *had effectively* prepared them for employment and whether a PhD *should* prepare students for employment in principle; whether learning statistics is viewed as useful for employment; whether learning statistics makes them feel anxious and their perception of whether social science is conceptually closer to arts / humanities or science / maths.

Data files for both questionnaires were created in Stata 15 for analysis. The hard copy current PhD student questionnaires completed by the SGSSS event attendees had to be completely developed anew from a blank Stata data file. The employed PhD graduate online questionnaire was migrated from the Bristol Online Survey in the form of an Excel file into Stata and appropriate short up to 8-character variable names were assigned in the Stata data files, breaking more complex questionnaire items down into individual variables. For example, any questions using a 5-point Likert scale had from strongly agree – strongly disagree had to be broken down into 5 separate variables. Question items with many responses such as a respondent's academic discipline, were also broken down into separate variables for each academic discipline with a yes / no for each and coded as such.

Statistical analysis was conducted in Stata regarding the key independent and dependent variables stated above, the chi square test for independence between the variables measuring statistical significance at either the 5% or 10% levels and Cramer's V to measure the strength of association between the two variables. The 5%, and less common 10%, statistical significance levels were used in the analysis, due to the rather small sample sizes in this study which meant that the more standard 1% and 5% statistical significance levels would be unlikely to reveal very much i.e. most of the analysis would emerge as not statistically significant. This is due to the fact that large sample sizes tend to show many more statistically significant results than small sample sizes, but this does not mean that there are no interesting patterns emerging in results from small sample sizes just that it is much less common to get statistically significant results due to the low numbers of respondents in the sample and the resultingly typically wider confidence intervals (Hackshaw, 2008) .

3.7 Ethical considerations

3.7.1 Ethical approval procedures and obtaining informed consent

As a researcher I have a responsibility to my research participants, the ESRC as funders and also the University of Edinburgh as my teaching institution, to make as full use as possible of the collected data. Although I obtained informed consent from people to take part in my research, I did not obtain consent to make participants' data available to others for secondary analysis. This will need to be addressed by re-approaching my participants to obtain this consent, should I wish to do that. If the study data was made available for secondary analysis, such as depositing in the UK Data Archive, correct procedures would additionally be followed to ensure that participant details were anonymised, so that their confidentiality and anonymity were preserved.

In terms of gaining ethical approval for my doctoral research, I made 2 sets of ethics committee applications, the first to the University of Edinburgh and the second to Edinburgh Napier University, in order to be able to distribute the online questionnaire to some of their staff. The University of Edinburgh application involved submitting an online form regarding my study and ethical procedures, which was then sent to my PhD supervisor to grant ethical approval if the study was not deemed to be of a higher level ethical concern. This was done in September 2016 and approval was granted to begin my research soon after.

The application to the Edinburgh Napier University Ethics Committee was made in April 2017 and set out in full how questionnaire respondents would be provided with information about the study (via a participant information sheet) and also a consent form with a series of tick boxes before proceeding to complete the questionnaire. It was also made clear to respondents that they could withdraw from the study at any time by simply exiting the questionnaire application. They were also permitted to contact the researcher for up to 2 weeks following submitting a completed questionnaire, should they wish their data to be withdrawn.

3.7.2 Information sheets and consent forms procedures

Participant information sheets about my doctoral research study and consent forms were provided to all research participants regardless of whether taking part in the qualitative or quantitative branch

of the research. Regarding the video diaries and walking interviews, once students had agreed to take part I emailed them an information sheet and brought a consent form along to their interview in hard copy for their signature. What consenting to the research meant was fully explained to participants.

Questionnaire respondents were provided with consent forms at the start of their questionnaire as well as information about my research study. The consent forms and information sheets forms used for my study for both the qualitative and quantitative branches of the research, are provided in appendix 1.

3.7.3 Ethical considerations for research participants

I was conscious of the fact that the student walking interviews could present a risk to confidentiality, as we would be walking outside in the university grounds and adjacent areas and interviewees' views could be overheard. In order to mitigate this potential sensitivity, I made interview participants aware of this possibility before the interview started. I requested that they signal to or inform me that someone they knew was nearby and we would change route and walk elsewhere, moving onto a neutral topic until out of earshot. In practice, this did not arise as an issue during any of the walking interviews. The general principle guiding my approach during the research was to cause no harm to research participants.

Video and other visual data can present additional ethical challenges for preserving the anonymity and confidentiality of participants (Heath et al 2010). Although video diary participants were given pseudonyms, an individual could be identified from their face and / or voice unless the data is kept securely. This also poses the question of what should occur in order to maintain confidentiality and anonymity during dissemination of the results. There is software available that can blur out or distort an individual's face in a video. Similarly, voice distortion software is available that could also be utilised. If I wished to show a video diary extract to others, for example to enhance a conference presentation on my research, I would first approach the diary participant(s) concerned, seek their approval and share the altered video and audio footage with them in advance, to establish whether it satisfactorily preserved their anonymity.

An unanticipated ethical issue arose during fieldwork, which spotlights the importance of sensitivity towards research participants and how gaining informed consent can be even more nuanced than it may originally appear. One of the pilot interview participants responded with discomfort when I

requested including some quotations from their interview in my board paper to help describe the pilot, exploratory study, and shared these in advance with them. The interviewee reacted quite strongly and felt that the quotations made them sound silly, even though the words were an accurate representation of what they said. In discussion with the research participant, we agreed which quotations I could and could not use in my board paper. The interviewee, also a postgraduate student and researcher, stated that it had made them think more fully about how research participants may feel retrospectively about their own views in quotations, after they have taken part in an interview. The issue was resolved to the participant's satisfaction, however, it highlighted to me that research and obtaining informed consent is a dynamic rather than static process. What an individual feels comfortable with one day, they may feel discomfort with tomorrow.

There are also ethical concerns especially associated with the expert interviews, as it is possible that they could feel uncomfortable about critiquing research methods training policy changes and not wish the ESRC to know their views. In such circumstances, it is particularly crucial to ensure they are not identifiable. However, I recognised that it could be impossible in some cases to completely protect the identity of the experts if, for example, they said something during their interview which was well known as their particular view or that they had said to others in other settings. I sought to manage this potential issue by informing the experts at the start of their interview that this could be the case. Three interviews were quite satisfied that this could occur and did not mind it, however, one asked for any quotations used from their interview to be sent to them for review, which I have done. There could also be sensitives for those who were involved in shaping / administering the social science doctorate and methods training policy changes about what they may feel they wish to reveal, which I remained cognisant of during the interview process.

3.7.4 Ethical considerations for self as researcher

Reflecting on the process of approaching student delegates at the SGSSS summer school event to recruit respondents for my questionnaire, I found this a highly uncomfortable experience and felt that I had to be very bold, and rather brash, in order to achieve this. The approach was fundamentally at odds with my personality and upbringing, which is to be sensitive and respectful to strangers, especially when they are dining. Typically, this form of recruitment necessitated approaching delegates whilst in midst conversation, hovering beside them until they looked at me, so as not to interrupt them, and I could then speak to them. I also sought to endeavour to time my

lunch time approaches to delegates, so that I was not disrupting people extensively whilst they were eating their lunch but sought to attempt to introduce myself to them before they left the lunch hall. I recollect noting the appalled look on one delegate's face, whilst they were eating, as I started to talk to their group. I inevitably missed some people with trying to time this sensitively. Most delegates were pleasant to me and glad to be able to help a fellow PhD student in this way. However, there were a few notable occasions, one in particular, when a delegate told me that they thought I was 'very presumptuous!' for approaching them and asking if they wished to complete a questionnaire. I recall feeling very upset at this, after a long day publicising my research and enduring the discomfort of approaching, and to my mind irritating, strangers multiple times. This approach to conducting research felt akin to market research or cold calling to me, not the more delicate, staged recruitment typical of qualitative social research. This recruitment method 45 completed questionnaires thus it was worthwhile in that sense, however, there was a personal cost. Reflecting on it, I now know that this is a method with which I am very uncomfortable and would be unlikely to utilise it again in research.

3.7.5 Other ethical considerations

Briefly some other ethical considerations such as those in writing up and disseminating results as well as those associated with my funding organisation, the ESRC, will be considered.

As previously alluded to, the identity of research participants must be protected as far as possible at all stages of the research process. I have already partly done this by sending the quotations used in this thesis from one of my expert interviews to the interviewee to gain approval for their use. I have used participant pseudonyms in the qualitative data and associated documentation such as interview transcriptions, documents detailing participant demographics etc. at all stages, right from the very outset as soon as interviews were organised in order to protect participants' identities. I plan to write my thesis up for publication in journal articles in the form of several different articles and will carry these ethical procedures around protecting participants forward into all publications and dissemination that I do, be that written publications or verbal presentations at conferences and seminars. Having video diary data could present some specific ethical concerns should I wish to show a clip from a video diary during a presentation. If doing this I would first re-approach the participant involved to gain their consent for doing this and also use software to distort their image and voice, if this was required by the participant.

I also believe that there are some particular potential ethical concerns associated with my doctoral research of having an ESRC funded doctoral studentship that researches an ESRC-initiated policy change. I have remained open to what the data is saying and can confirm that I have not been steered in any direction by my funders at all. There have been no conflicts of interest in this study. However, it does occur to me that, as will be seen during the results chapters, some of my findings show that the changes to the doctorate and research methods training have only been partly successful and that some issues and problems emerge with the new structure. However, I have been reassured that the ESRC want to know how well it has been working and do not expect a 'good news story' if that is not the reality. It is important, however, to raise and show awareness of these potential ethical considerations and how they have been acknowledged and dealt with.

3.8 Chapter conclusion

This chapter has presented and cogitated upon and defended my methodological choices, including the arguably more innovative methods used such as walking interviews and video diaries and the resulting mixed methods research design comprising qualitative and quantitative techniques as well as a variety of qualitative methods. I have also portrayed reflections on my specific 'peer' researcher status as a PhD student interviewing other social science doctoral students, together with the potential implications of this both positive and negative. Finally, I concluded by discussing the ethics of this doctoral study in some detail, including ethical approval procedures, official research documentation such as consent forms, ethical considerations for participants, myself and considerations around the ethics of dissemination and my funding status. Chapters 4-7, the data chapters which follow, will present an analysis of the original qualitative and quantitative data findings from my research, relating these back to the literature.

4 Chapter 4 Results: Broad postgraduate research methods training

4.1 Introduction

The Economic and Social Research Council (ESRC) states in 3 editions (2005; 2009; 2015) of their 'Postgraduate Training and Research Guidelines' that all social science postgraduate students must undertake broad (often referred to as 'core' by the ESRC) research methods training.

This training is envisaged to include both quantitative methods 'All students are expected to have some core training in quantitative methods and to be trained to a basic level of statistical literacy' (ESRC, 2015, p.9) and qualitative methods 'all students are also expected to have some core training in qualitative methods and to be trained to a level that would allow them to understand and interpret a range of phenomenological or textual data. (ibid p. 10).

This chapter analyses and reports on the results from my quantitative and qualitative research on views of broad postgraduate methods training at the University of Edinburgh. It presents analysis of questionnaires with current social science postgraduate students and employed PhD graduates and qualitative research with experts (senior UK academics and policymakers) who shall hereafter be referred to as 'experts' and current social science PhD students. Regarding the qualitative research, both Masters and PhD students were consulted at the University of Edinburgh via walking interviews (for PhD students) and video diaries (Masters and PhD students). Those responding to the questionnaire were only PhD students, not Masters students, and were primarily from the University of Edinburgh. As described in chapter 3 of this thesis, a small number of questionnaire responses, however, were received from PhD students at other Scottish Universities (Glasgow, Aberdeen, Heriot-Watt (Edinburgh); St Andrews; Stirling; Strathclyde; Edinburgh Napier and Dundee) and a two English HE institutions, the Universities of Bristol and Southampton.

Earlier chapters of the thesis have set out my research questions and intentions underpinning this study, however, for ease of reference my overall aims were:

3. **Firstly, to establish what changes have there been in the structure and administration of UK PhDs and postgraduate social science research methods training and;**

4. **Secondly, to investigate how postgraduate students and some key academics / policymakers view such changes in methods training provision, how effective such changes have been and whether modifications to the current structure would be beneficial.**

4.2 Primary analytical framework

There are four elements of the analysis of the material collected for this thesis, with a chapter devoted to each. These elements were shaped by reading the literature and then developed as the analysis of ESRC policy documents and of the data collected through fieldwork proceeded. This has resulted in the following framework for presenting my findings:

- **Results chapter 1: Broad postgraduate methods training:** Whether postgraduate social science students should study broad methods courses.

- **Results chapter 2: Should broad methods training be compulsory?** Whether such courses should be compulsory for *all* postgraduate students, both at Masters and PhD level.

- **Results chapter 3: Depth / specialised methods training, time pressures and expectations of / requirements of the social science PhD**

    - Whether postgraduate students should study specialised / advanced methods courses. Does studying broad methods courses compromise time being available for advanced methods study?
    - Time pressures and expectations; is too much now expected of doctoral students now within a 3-4 year PhD degree?

- **Results chapter 4: Effectiveness of doctoral methods training for research / teaching employment (both academic and non-academic)**

    Does, and indeed should, a PhD effectively prepare students for later employment (both inside and outside of the academy)?

4.2.1 Analytical themes

Through reflecting more fully on the data, and also from discussions with my supervisors, 4 further themes for the data emerged. These were: 1. *'Quick wins'* – what has worked well in doctoral research methods training with reference to the original aims of the ESRC and the development of the Doctoral Training Centres and Doctoral Training Partnerships; 2. **'***One size fits some, but not all'* – what are the problems with, and obstacles to, the application of a relatively standardised training package for all social scientists; 3. *'If it ain't broke, don't fix it' or cultural resistance to change* – an exploration of the reasons behind people's resistance to the changes in postgraduate programmes. Academic tribalism, disciplinary and methodological identity all feed in to this account. Theme 3 on cultural resistance is also highly relevant to theme 2 ('one size fits some, but not all', which highlights the perceived issues with attempting to introduce a broad policy and fit this to students from varying backgrounds and with different needs. Finally, theme 4. **'***Overloaded shopping basket'* (Time pressures and myriad expectations - is too much now required for doctoral students to accomplish within a 3-4 year PhD degree?).

The ESRC's guidelines and requirements of postgraduate students can be conceptualised as being like having a shopping list and a basket. We can envisage the ESRC guidelines for current social science PhD students, and all the competencies that students should be and attain, as items in a shopping basket. There is much in this shopping basket already, it is becoming quite full and rather heavy. If increasing numbers of items are added in from the shopping list, with nothing being put back on the shelves, eventually goods will begin to fall out onto the shop floor. Moreover, the basket will become so heavy that it is a struggle to carry. These words of caution could be applied to the seemingly ever-increasing list of requirements / recommendations / achievements for doctoral students; if nothing is modified and removed as being less important for students to attain yet more continues to be added, ultimately things will become unachievable and reach some kind of breaking point. Some of my findings begin to indicate that this is already the case. For example, most students in the qualitative part of the study had not undertaken any advanced and specialised training for their discipline and preferred methods (which is one the key ESRC recommendations) due to their view that they lacked the time during their doctorate to learn specialised methods. However, it is worth noting that perspectives on what constitutes 'advanced' training vary and particular student's conceptualisations of advanced methods may not be the same as the ESRC's

in all cases. Thus, one of the ESRC's guidelines, that students should undertake advanced and specialised training may be falling out the shopping basket and being sacrificed.

This results chapters' structure is as follows; findings are grouped by key research questions and by 4 themes, as outlined below. In each thematic section quantitative findings are reported first, in order to provide the broader context of views, then the qualitative data is presented to deepen the analysis and highlight the details. Finally, the topline messages from both sets of data are drawn together and compared and contrasted within each section. Qualitative findings from experts are typically woven in where relevant to findings from students. The 4 analytical themes outlined above have also been interlaced within the discussion where relevant within each chapter. So, for example, where it was pertinent to discuss say 'one size fits some but not all' within a particular results chapter, then this was done, and each analytical theme appears in more than one results chapter in some cases. The 4 analytical themes are also highly significant for the discussion chapter later in this thesis.

This first results chapter will focus on theme 1, *'broad postgraduate methods training'.* This chapter also outlines key benefits of broad methodological training and knowledge identified by participants of: gaining baseline knowledge across a range of key methods (standardising methods knowledge level despite students' varying backgrounds); being able to select the most appropriate methods to answer research questions; acquiring employment-relevant skills; assisting understanding of other's research (peers / journal articles / future employment research teams) and sparking off new methods ideas / discovering methods new to students.

Views of both University of Edinburgh postgraduate students (gained via walking interviews, video diaries and questionnaires) will be presented as well as those from key senior academics and policymakers gathered through qualitative interviews (hereafter referred to as 'experts').

For ease of understanding, details of the Masters and doctoral study programmes at the University of Edinburgh at the time of fieldwork in the academic year 2017-17 drawn from the Degree Regulations and Programmes for Study (DRPS) have been provided in Appendix X. A range of key social science disciplines, covering those that typically exhibit methodological preferences such as quantitative methods in Economics and qualitative methods in Social Anthropology, as well as those that use both sets of methods have been selected. The 6 disciplines chosen are: Economics; Politics; Psychology; Science, Technology and Innovation Studies; Social Anthropology and Sociology.

As shown in Table 5 below, a range of possible courses are available for postgraduate students (both Masters and PhD) in various disciplines at the University of Edinburgh. Some of these are core (compulsory) courses whereas others are optional. Most of the disciplines allow selection of the courses from other disciplines / the general programme as well. Ticks have been placed in the boxes below when a course is especially associated with a particular discipline it is mentioned in its research programme guidelines as either a core or optional course.

Table 5: University of Edinburgh Postgraduate Methods Courses Curriculum by Discipline						
	Economics	**Politics**	**Psychology**	**STIS**	**Social Anthropology**	**Sociology**
Core Quantitative Data Analysis 1 and 2				√		√
Research Skills in the Social Sciences: Data Collection				√		√
Research Design				√		√
Analysing Qualitative Data				√		√
Qualitative Methods and Ethnographic Fieldwork						
Social Network Research: Theories and Analysis		√				√
	Economics	**Politics**	**Psychology**	**STIS**	**Social Anthropology**	**Sociology**
Evaluation Research Methods						

Applied Demography						
Working with Self and Others in Qualitative Research				√		
Multi-Level Modelling in Social Science						
Statistical modelling in the Social Sciences						
Comparative Analysis of Social and Public Policy		√				
Macroeconomics	√					
Microeconomics	√					
Econometrics	√					
Time Series Econometrics	√					
Bayesian Econometrics	√					
Univariate Statistics and Methodology using R			√			
Multivariate Statistics and Methodology using R			√			
	Economics	**Politics**	**Psychology**	**STIS**	**Social Anthropology**	**Sociology**
Psychological Research Skills			√			

Qualitative Methodologies in Psychological Research			√			
Ethnography Method					√	
Himalayan Ethnography and Visual Anthropology					√	
Discourse / Conversation Analysis						√
Historical Analysis in the Social Sciences						√
Narrative Text and Discourse						√
Survey Methods and Data						√

4.3 Methods

My research methods were previously outlined in the methodology chapter, however, for ease of reference will be briefly summarised again here. Questionnaires were distributed to current PhD students in two key ways: 1. online via the Edinburgh University School of Social and Political Science student email distribution list and 2. hard copy at a Scottish Graduate School of Social Science (SGSSS) event in June 2017 to current PhD students the majority of whom (excepting those from Bristol and Southampton universities) were part of the SGSSS. In total 45 completed questionnaires were received in from hard copy distribution and 34 from online methods, totalling 79 completed responses. It should be noted that due to the small numbers of respondents in some response categories arising from the relatively small sample, data that that are not worthwhile pursuing due to small numbers will not be reported, for example analysis by student's discipline and also by institution of study.

Questionnaires were also distributed to former PhD students who were now employed as researchers / academics using a range of means. This involved targeting research employment organisations: such as the Scottish Government and private research organisation as well as the University of Edinburgh School of Social and Political Science (SSPS) alumni email distribution list, PhD graduates who were part of the SGSSS and Edinburgh Napier University via contacts with that institution as the researcher had previously worked there in an academic capacity. 50 usable questionnaires were received from those with PhDs as some completed responses were from employed researchers who had not studied for a PhD and had to be disqualified from the analysis.

The qualitative methods used were 1. video diaries for Masters and 1st year PhD students (7 students in total, most of whom completed regular video diaries) and 2. walking interviews with primarily 3rd and 4th year PhD students (14 students took part). In total the qualitative data is based on consulting 21 PhD and Masters students.

Interviews with the 4 experts were conducted in various ways, as most of the interviewees lived some distance from Edinburgh. One interview with an expert was carried out face-to-face, two on the telephone and the fourth via video call (skype).

Towards the end, this chapter will argue that PhD students face particular issues of timing, recency and recall in relation to broad methods training, especially in quantitative methods and statistics. In the case of learning numerical methods, there can be a strong 'use it, or lose it' element. Consequently, it is averred that shifting this type of training to later on in the doctoral degree, around the time of PhD thesis writing up / submission would be most beneficial for these students. This would have the dual benefit of most effectively preparing students for employment (by making such knowledge recently gained) and seeking to mitigate conflicts between training needs and being able to complete the doctoral research project.

4.4 Results: Respondent demographics

4.4.1 Current PhD student questionnaire respondent demographics

The following section first presents key demographics of the respondents to the current PhD questionnaire namely their: gender; age; institution of PhD study; year of study; PhD discipline; PhD methods; whether full-time or part-time and whether a domestic or international student. This is immediately followed by key demographics for the employed PhD graduates' questionnaire: gender, age and PhD discipline.

4.4.1.1 PhD students' gender

The majority of the 77 questionnaire respondents who stated their gender were male (70%) and 30% were female. 2 of the 79 respondents preferred not to state their gender.

4.4.1.2 PhD students' ages

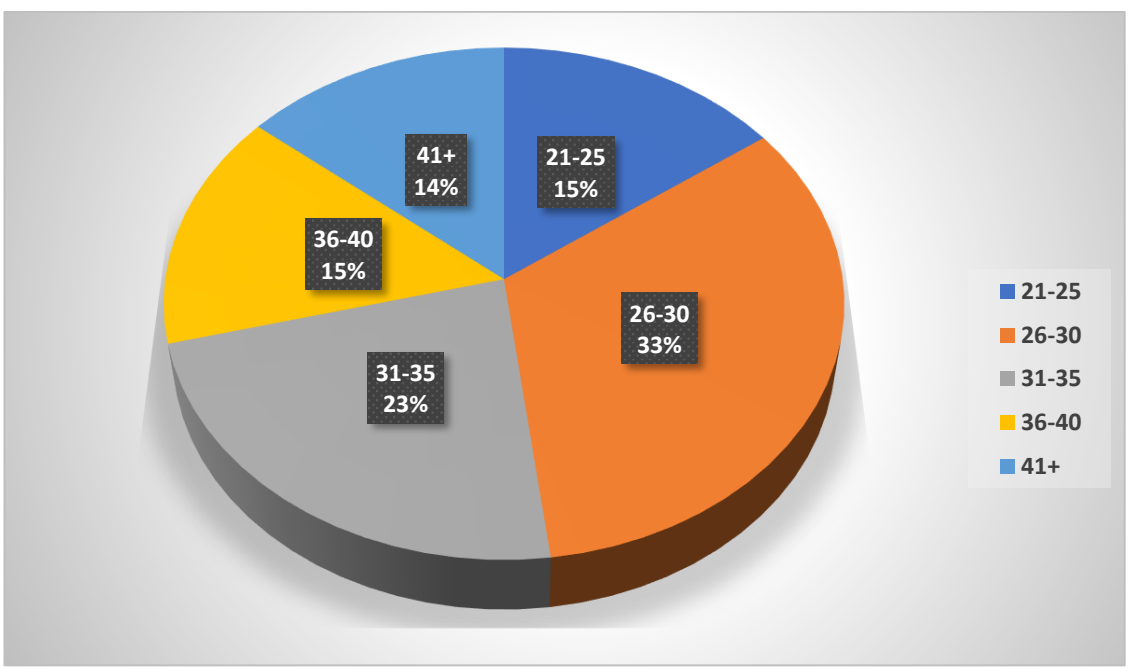
The age of questionnaire respondents ranged from 21 years to 54 years. The mean age was 32.5 years. The standard error was .8198284 and the confidence interval at 95% was between 30.91215 and 34.17646 years.

The most common ages (the modes) among respondents were ages: 25, 26, 28 and 29 years (9% of respondents were each of these ages) followed by age 34 and 35 years (6% of respondents of each age) and age 38 years (5% of respondents).

Grouping respondents' ages was more useful for further analysis and thus age categories were developed, as can be seen in bothTable 6 and displayed in Figure 2 below.

Table 6: PhD students' age at last birthday – coded into age groups	
Age groups	**Percentage (count)**
21-25 years	15.19 (12)
26-30 years	32.91 (26)
31-35 years	22.78 (18)
36-40 years	15.19 (12)
41 years and more	13.92 (11)
Total	**100 (79)**

Figure 2: PhD students' age groups



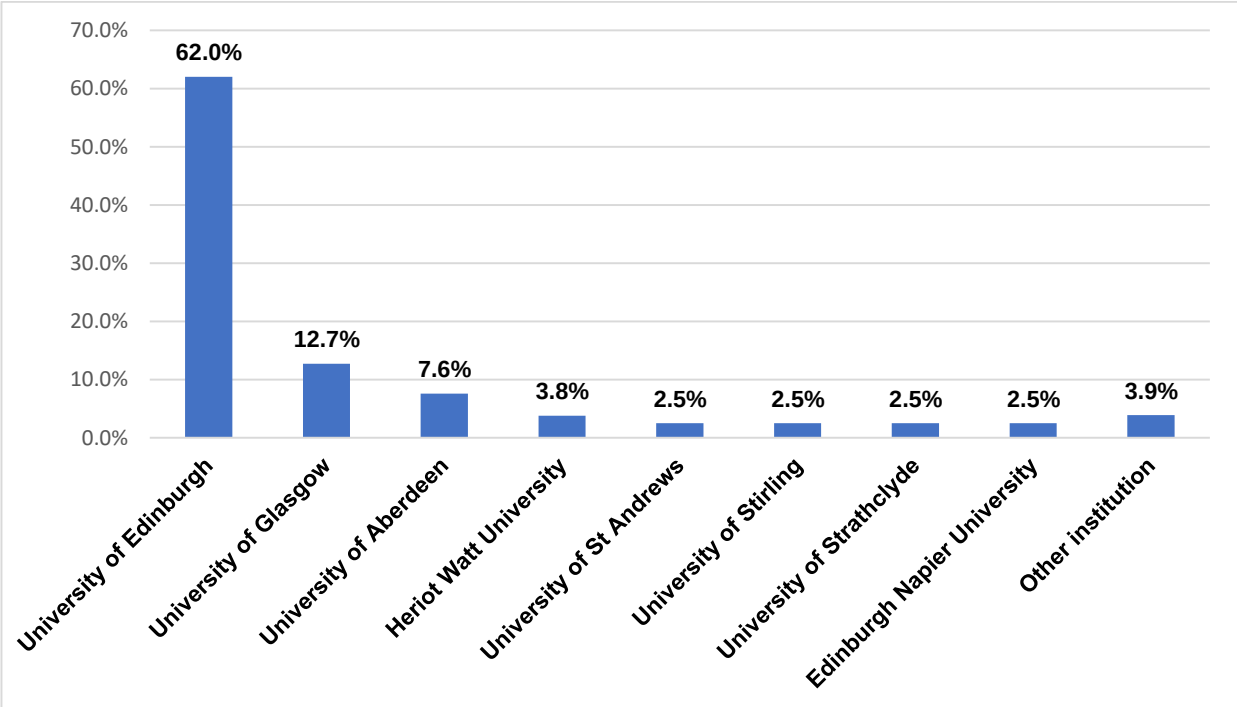
4.4.1.3 PhD students' institution

Due to the two methods of data collection (an online survey distributed to current PhD students at the University of Edinburgh and paper copy questionnaires distributed at a Scottish Graduate School of Social Science event (which comprises PhD students currently studying at any of the 16 Scottish Universities and potentially PhD students from other UK universities could also attend), all respondents were currently studying for a PhD at a UK university, with most studying at a Scottish University.

The universities that respondents were studying for their PhD at were as follows.

As shown in Figure 3 below, the majority (62%) were studying at the University of Edinburgh (49 respondents), 13% at the University of Glasgow, 8% at the University of Aberdeen and 4% at Heriot Watt University. The remaining institutions each had 1 or 2% of respondents studying at them. It is unsurprising that the majority of respondents were studying for their PhD at the SGSSS event (where the paper questionnaires were distributed) was hosted at the University of Edinburgh and also the online survey was distributed to current University of Edinburgh students.

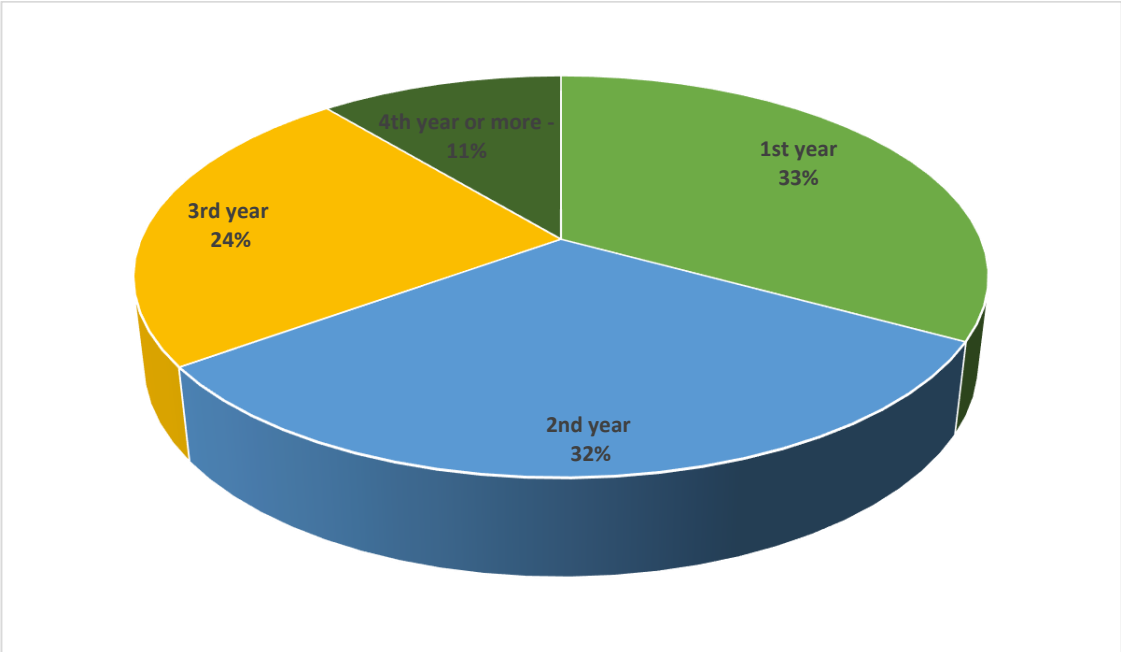
Figure 3: PhD students' institution



4.4.1.4 PhD students' year of study

As shown in Figure 4 below, among doctoral students the largest proportion by a small amount (32.9%) were in 1st year of their PhD study, closely followed by 2nd year (31.65%), nearly a quarter were in 3rd year (24%), just over a tenth in 4th year or more (11.4%).

Figure 4: PhD students' year of study



4.4.1.5 PhD students' study pattern - full time or part-time

The vast majority of respondents studied for their PhD full-time (88.6%) compared with studying part-time (11.4%).

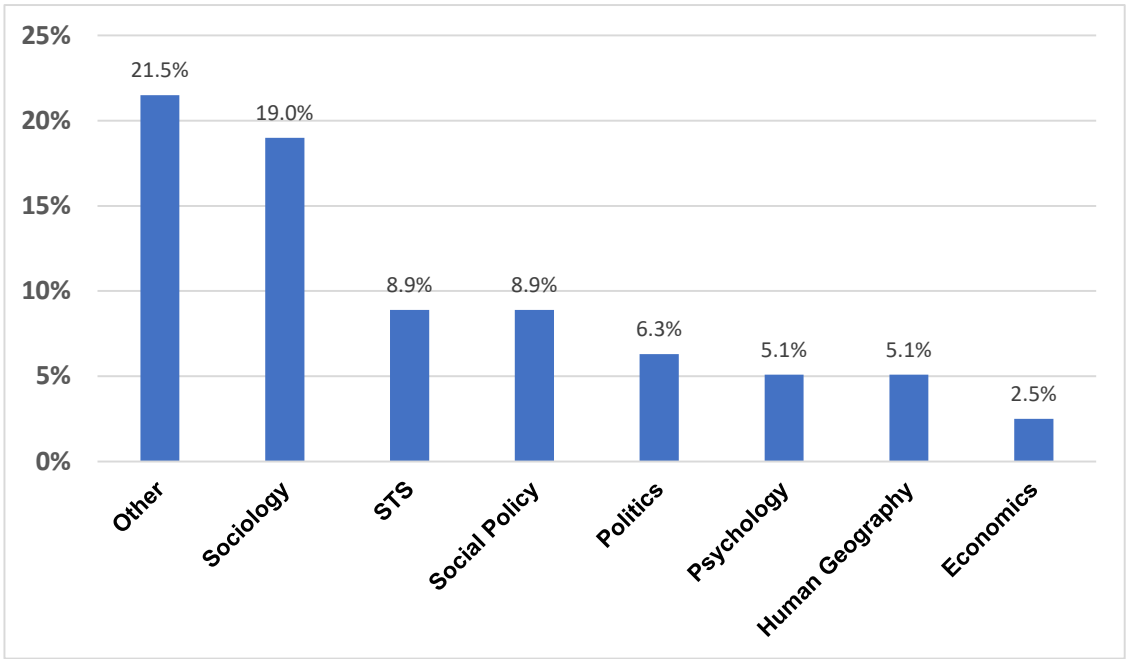
4.4.1.6 Students' PhD discipline

Respondents were invited to select the discipline that their PhD was in from a list that intentionally matched the ESRC disciplines classifications, as well as an 'other – please specify' option being available.

As shown in Figure 5 below, the largest percentage of the 79 respondents chose (21.5%) the 'other' category 17 respondents, then 15 chose sociology (19%), science and technology studies and social policy were each chosen by 7 (8.9%) of respondents, politics by 5 respondents (6.3%), psychology and human geography were each selected by 4 (5.1%) students and the remaining

disciplines were chosen by only 1 or 2% of respondents each, with only 2 (2.5%) being economics PhD students, for example.

Figure 5: Students' PhD discipline



4.4.1.6.1 'Other' discipline category

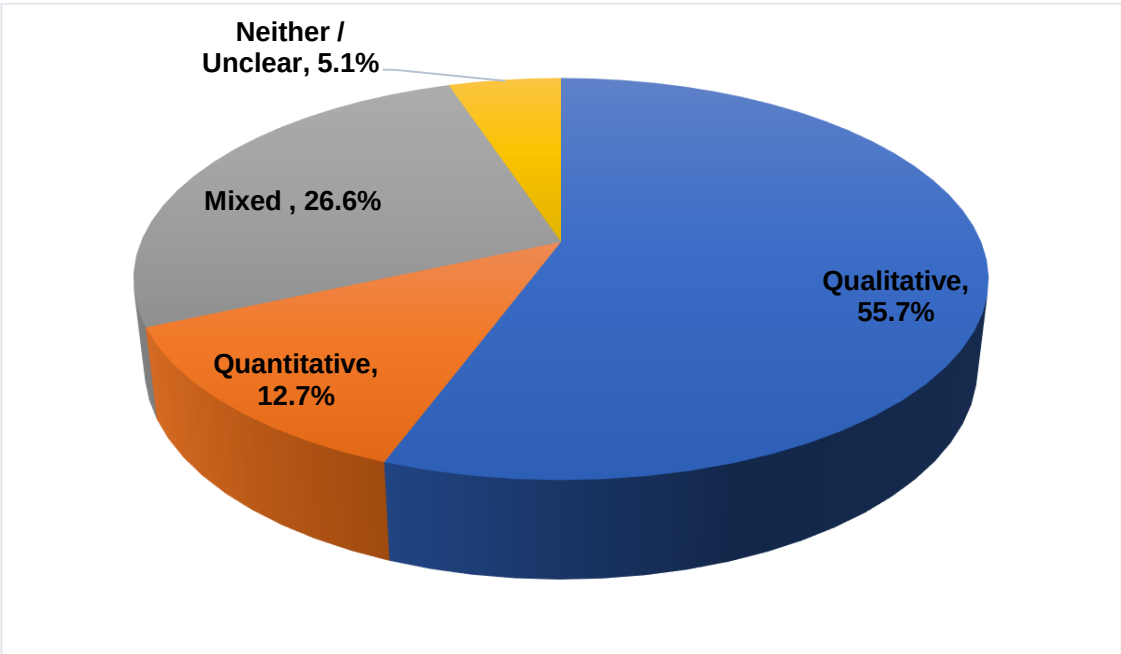
Current students' PhD disciplines that they highlighted as being in the 'other' category included interdisciplinary PhDs that could not be classified into one of the pre-coded boxes, respondents wished to describe it more specifically e.g. sport psychology rather than choosing the psychology option or one which was not provided in the list (as it was not identified by the ESRC as a standard social science discipline) such as public health, nursing etc.

The most common 'other' disciplines were health-related ones such as public health / health in social science chosen by 2 respondents and nursing (1 respondent); environment or climate related PhDs (specifically 'Climate science, human geography, and political science' and 'Behavioural Studies. Environmental Social Science') (2 respondents); social informatics / human computer interaction (2 respondents); criminology (1 respondent); sport psychology (1 respondent); agriculture, geosciences; Canadian studies and history (1 respondent each). Only 13 of the 17 respondents who chose the 'other' category provided further information on their PhD discipline.

4.4.1.7 Students' PhD methods

The majority of 44 / 79 respondents (55.7%) used mainly qualitative methods, 21 /79 (26.6%) used mixed methods, 10 / 79 (12.7%) used mainly quantitative methods and 4 / 79 (5.1%) could not be classified (Figure 6).

Figure 6 Students' PhD methods



4.4.1.8 PhD students' - whether domestic or international

The majority of 56.4% of the respondents were domestic students and 43.6% were international. These data were coded after receiving the questionnaire responses by assessing the respondents' undergraduate and where applicable postgraduate, for example Masters degree, institution as to whether it was at an overseas university or one within the UK, as opposed to by asking the respondents a direct question about this. 55 (out of the 79) students answered the question on their undergraduate / postgraduate degree institution and thus were able to be coded in this way.

4.4.2 Employed PhD graduates' respondent demographics

The key demographics of those responding to the now employed PhD graduates' questionnaire shall be briefly outlined here including: gender, age and PhD discipline.

4.4.2.1 Employed PhD graduates' gender

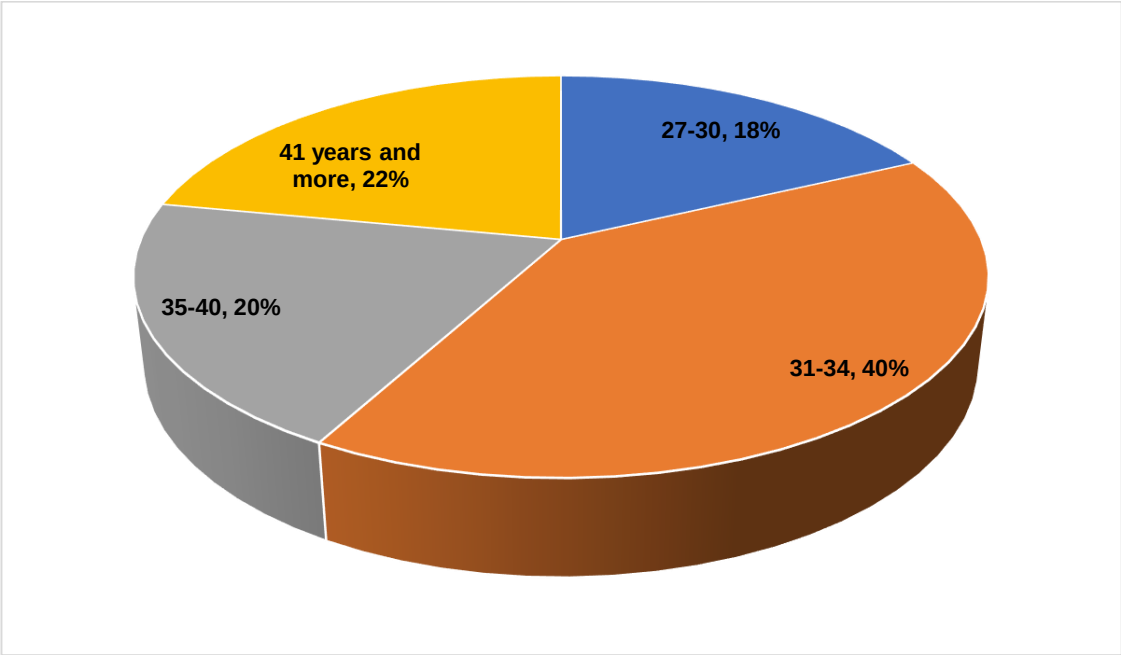
The majority of the 50 questionnaire respondents were female 34 out of 50 (68%) and 16 respondents were male (32%).

4.4.2.2 Employed PhD graduates' ages

The age of questionnaire respondents ranged from 27 years to 57 years. The mean age was 38.6 years.

Grouping respondents' ages was more useful for further analysis and thus age categories were developed, as can be seen in Figure 7 below. The largest proportion of respondents were aged 31-34 years, then 41 years or more, 35-40 years and finally 27-30 years

Figure 7: Employed PhD graduates' age groups



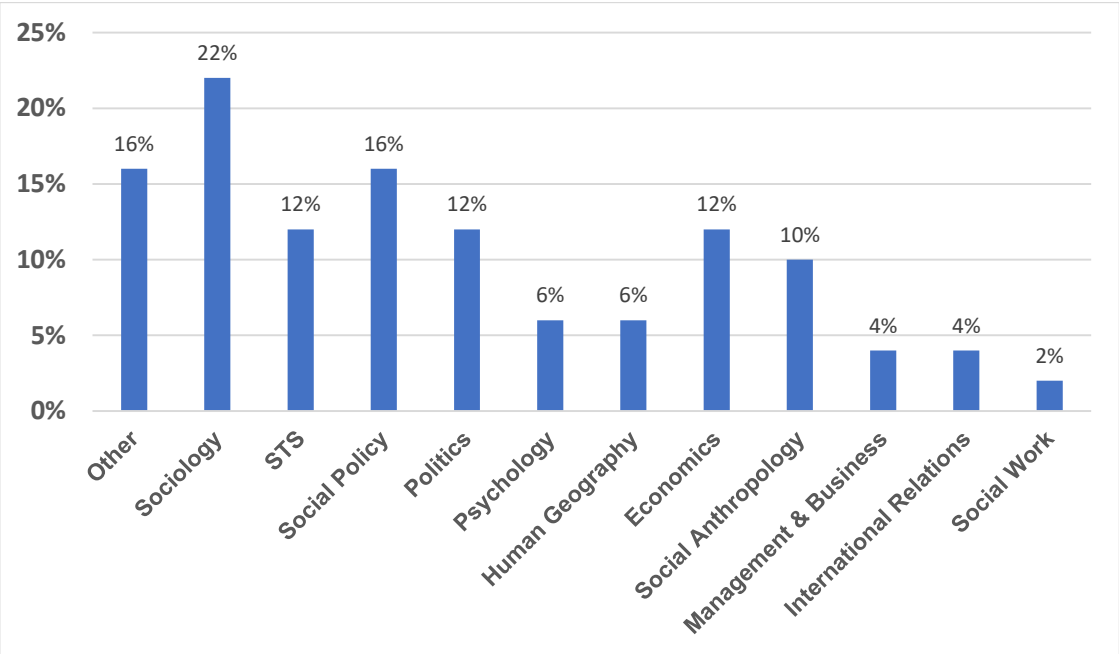
4.4.2.3 Employed PhD graduates' PhD discipline

As with the current PhD student questionnaire, employed PhD graduates were invited to select the discipline that their PhD was in from a list of academic disciplines corresponding to the ESRC discipline classifications, as well as an 'other – please specify' option being available. This was a

multi response option question and respondents could select more than one discipline if they felt their PhD had been inter-disciplinary (thus the percentages below sum to more than 100%).

As shown in Figure 8 below, the most common discipline that had been studied was sociology with 11 out of the 50 respondents choosing this (22%), the next most popular disciplines were the 'other' category and social policy with 8 respondents (16%) apiece choosing these, 6 respondents chose each of economics (12%), science and technology studies (12%) and politics (12%) and 5 chose social anthropology (10%). 3 respondents apiece had studied psychology (6%) and human geography (6%), 2 each were management and business studies or international relations graduates (4%) and 1 respondent had studied social work (2%). No respondents had studied any of the 8 remaining disciplines available for selection (see Appendix 1 for list of disciplines).

Figure 8: Employed Graduates' PhD discipline



4.4.2.3.1 Employed PhD graduates' 'other' PhD disciplines

Only 3 out of the 8 respondents who chose the 'other' category specified more about their PhD discipline and these were: Applied health services research, an interdisciplinary PhD in STS, sociology of health and illness, and socio-legal studies and finally sustainable development.

4.5 Results: Whether PhD students should study broad methods

4.5.1 Current PhD student questionnaire

Key findings from the questionnaire with current PhD students on their views of broad research methods training are outlined below. It should be noted that the analysis has removed the neutral position throughout, as it is easier to see clear patterns of agreement and disagreement this way. Moreover, for the sake of ease of interpretation and for reading, 'strongly agree' and 'agree' responses have been combined to form the category 'agree' as have 'strongly disagree' and 'disagree' to form the category 'disagree' throughout the reporting of questionnaire results in this thesis.

The majority of current PhD students responding to the questionnaire agreed that PhD students should undertake broad methods training, just under three-quarters (73.8%) agreed and just over a quarter disagreed (26.3%).

In terms of differences in attitudes towards whether postgraduate students should engage in broad methods training, findings by gender, age, year of PhD study and which methods the student respondent was using for their doctoral research project are reported below and throughout the results chapters for key variables.

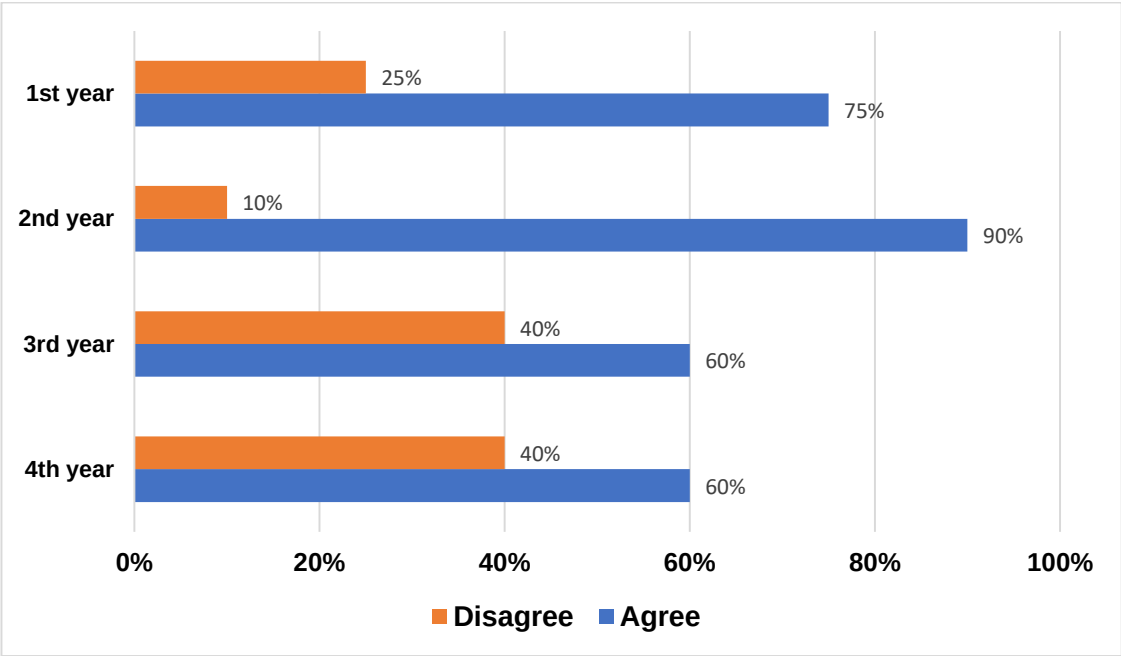
Gender: Little difference in views was noticeable by gender. The majority of each gender agreed with broad methods training overall, with similar proportions apiece; 74.4% of males agreed and 70.6% of females. The association between gender and views on broad methods training was very weak and not statistically significant (x^2=0.76; p≤.05; V=0.09).

Age: There was some variation in views by age, however, again this was weak and not statistically significant. Strongest disagreement with broad training was apparent in the youngest age group (21-25 years), 44.4% disagreed and 55.6% agreed. Around a fifth across each of the three intermediate age groups strongly disagreed / disagreed with broad methods training with 21% of 26-30 year olds, 23.1% of 31-35 year olds and 20% of 36-40 year olds reporting this. The oldest age group (aged 41 years and more) showed a slightly different picture, three-tenths (30%) disagreed and 70% agreed. The relationship between age and views of broad training was weak and not statistically significant (x^2=0.71; p≤.05; V=0.19).

Year of study: Overall, the majority of students in each year group agreed that doctoral students should learn certain core methods, even if these are not directly relevant to their PhD.

Disagreement with broad methods training increases as students progress through their PhD, except for an anomalous fall in disagreement in 2nd year and shows a moderate and close to statistically significant relationship. As Figure 9 below shows, of those in 1st year, three-quarters (75%) agreed and 25% disagreed and this increased in 2nd year to nine-tenths (90%) who agreed and 10% disagreed. Agreement with broad methods training fell, however, in 3rd and 4th year, with exactly the same proportions of three-fifths (60%) agreeing and two-fifths (40%) disagreeing in each of 3rd year and 4th year. The variables are moderately associated and not statistically significant (x^2=0.11; p≤.05; V=0.35).

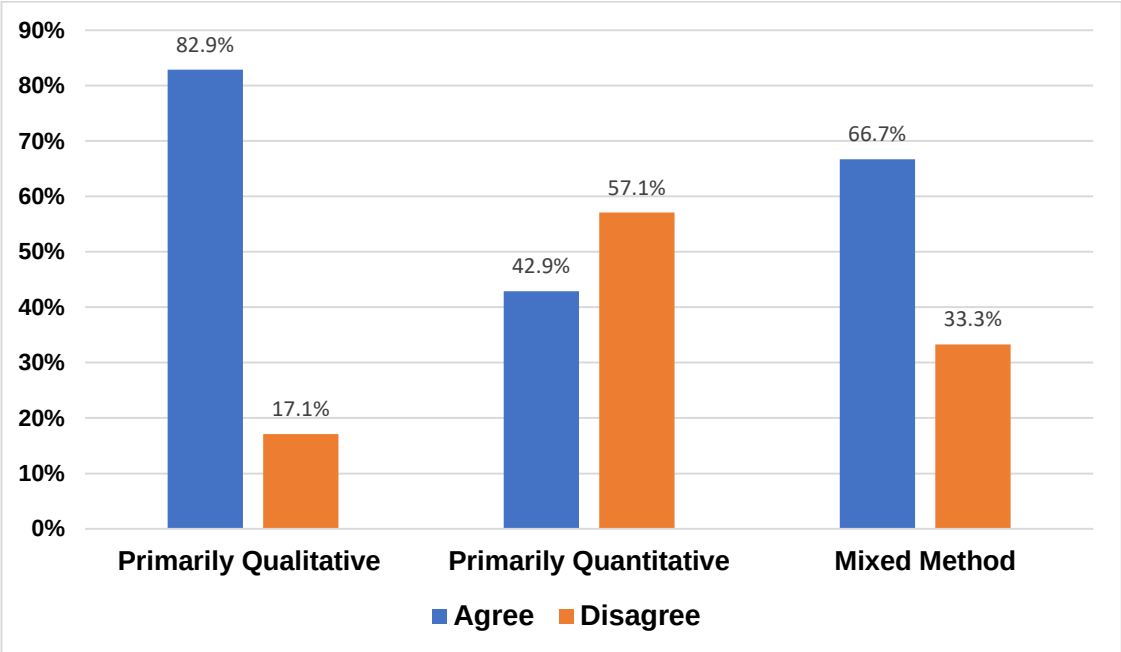
Figure 9: Current PhD students' views on broad training by PhD year



Students' PhD research methods: The majority of respondents used primarily qualitative methods (58.3%) in their PhD research project, 11.7% used primarily quantitative and 30% used mixed methods. It should be noted, however as was acknowledged during chapter 3, my questionnaire respondents are not a representative sample of all social science disciplines of PhD students at the university of Edinburgh. For example, only relatively few economics and psychology postgraduates took part in my research.

More agreement with broad methods training is apparent in respondents using primarily qualitative or mixed methods, much less in those using primarily quantitative methods (Figure 10). However, it should be noted that some of the response categories contain small numbers of respondents, especially in the case of those using primarily quantitative methods (only 7 respondents overall).

Figure 10: Whether current PhD students agree with methods broad training by student's PhD methods



These findings showed a weak, but close to moderate, association between a student's own PhD research methods and their view of broad methods training and statistically significant at the 10% level but not at the 5% (x^2=0.07; p≤0.1; V=0.29). The key point here is that, to the extent that there is resistance to broad methods training, it is more likely to be found among quantitatively-oriented students suggesting they are opposed to studying qualitative methods. I discuss this finding in more detail in chapter 8 'Concluding discussion and recommendations'.

4.5.2 Employed PhD graduate questionnaire

The vast majority of employed postdoctorates agreed that PhD students should learn broad methods, 92.5% (37 / 40) agreed and 7.5% (3 / 40) disagreed.

4.5.3 Quantitative findings on broad methods views: Summary

Thus, it can be seen from the findings reported above that overall there is a positive picture of questionnaire respondents generally agreeing that PhD students should undertake broad methods training (around three-quarters of respondents agreed). However, it should be noted that agreement reduces for 2 key independent variables, year of study and the student's own PhD methods. Students in later years of doctoral study (3rd and 4th year) showed less agreement with

broad methods training (60% in each year group compared with 90% in 2nd year). Year of study and views on broad methods training were moderately associated and not statistically significant (x^2=0.11; p≤.05; V=0.35)

Moreover, students using primarily quantitative methods were also less supportive of broad methods training than students using other types of methods for their PhD project (57% using quantitative methods and 66.7% using mixed compared with 82.9% using qualitative agreed). This finding was statistically significant at the 10% level but not at the 5% level (chi square p value 0.069) and there was weak but approaching moderate association between PhD methods and views on broad training (x^2=0.07; p≤0.1; V=0.29)

Comparing the views of current with former and now employed PhD students, those now employed are much more supportive of broad doctoral research methods training with 92.5% of employed postdoctorates agreeing compared with just under three-quarters (73.8%) of current doctoral students agreeing.

4.6 Whether PhD students should study broad methods: Qualitative data findings

4.6.1 Students' qualitative views

I shall now turn to a presentation of the results from the qualitative part of the research on current postgraduate students' views of broad methods training. The majority of the students consulted by walking interviews and video diaries agreed in principle that postgraduate social science students should study broad methods courses, but this was most appropriate at Masters level and that broad methods training should under no circumstances be compulsory for PhD students. Views on this the differing training needs of Masters and doctoral students will be further outlined more fully in results chapter 6 on advanced training and problems with methods courses and suggestions for improvement, reflecting on the 'one size fits some but not all analytical' theme.

The two quotations from students below demonstrate how they viewed broad methods training as useful for Masters students but potentially less relevant for PhD students, especially regarding the timing of some courses such as the 'Research Design' one feeding in to students' training needs i.e. what they need, when they need it:

“The ‘Research Design’ course structure is probably good for Masters students and the timing might work well for them, but it’s not so good for PhD students. (Aisha, PhD)

Some students raised that grouping Masters and PhD together students in the same classes for methods courses did not cater to their differing training needs due to the varying stages they were at in their own research process:

“The mixing together of Masters and PhD students created a slightly weird dynamic. The PhD students are itching to get away and work on their own stuff, and a lot of the Masters students did not yet have a firm research question. So these two groups were not in the headspace of getting the most out of the course.” (Toni, PhD)

Chapter 5 will present students’ data on their view that PhD students should choose which methods they wished to study, if any, in conjunction with advice from their supervisor(s). They argued that PhD students’ methods training decisions should be based on: 1. addressing any methods’ knowledge gaps and 2. balancing broad training needs and the timing of courses against other priorities such as carrying out the PhD research study, being sufficiently well trained in the methods they were using for their PhD and gaining teaching experience. In addition, the time taken up by gaining teaching experience also featured in students’ accounts of why they did not necessarily have time to undertake broad methods training.

4.6.2 Expert qualitative views – support for broad methods training

One of the experts consulted felt that broad methods training was also a positive thing for postgraduate students:

“I do think in terms of having a generalised set of expectations about the range of methods that people will be exposed to, that’s an appropriate thing to do.” (Expert 4)

However, there is no reason to think that the other 3 experts would disagree with this view.

4.7 Students’ qualitative views: Benefits of a broad methods training curriculum

Students raised a range of key benefits of broad methods training including: gaining baseline knowledge across a range of key methods (standardising methods knowledge level despite

students' varying prior backgrounds); acquiring the ability to select the most appropriate methods to answer research questions; acquiring employment-relevant skills; assisting understanding of others' research (peers / journal articles / future employment research teams) and sparking off new methods ideas / exposing to students methods new to them. Findings from the qualitative part of the study on these identified benefits of broad methods training, will be discussed more fully later on in this chapter from p 143 in relation to the 'quick wins' analytical theme**.**

Two key benefits identified by students which do not map neatly onto the ESRC's training outcomes and requirements are that broad training can help with 'discovering new methods / ideas' and also that it can 'level the playing field' between students. These two advantages are elucidated below.

4.7.1 Discovering new methods / ideas

One highlighted benefit of learning more broadly about available methods, which is not discussed later, was that this can stimulate new ideas for conducting research or indicate possible methods / combinations of methods that could be used within a doctoral research project.

For example, Sue emphasised that learning about methods more broadly had led to her finding out about ethnography, a method she had previously been unaware of. As a direct result of this, she was now likely to employ ethnographic methods in her PhD, should she proceed to study for one following her Masters degree.

"There was so many things that I'd never even considered that I might now avail myself of…Ethnography, wouldn't really have considered that a method that I would have used…Going on to do a PhD, it probably will now form a significant part." (Sue, Science, Technology and Innovation Studies (STIS) Masters student, video diaries)

Additionally, Marion remarked in her walking interview that broad methods training could ignite a fresh perspective:

"You don't know when that's going to spark an idea in your own head about your own question, or about your own methods or something. At the beginning of my PhD, I didn't know what I was going to learn from everybody else." (Marion, PhD)

The quotation below from Kenny demonstrates how even though a student may initially perceive a particular course as irrelevant or uninteresting it can actually be of value to them. The quotation presents Kenny's view of how ultimately he found the 'Research Design' course (which he initially resisted studying but it was insisted upon by his supervisors) useful for framing his research in a way that he otherwise would not have conceptualised without this learning[ix].

"So in the end I'm quite happy that I took it but in the beginning I was like 'don't want to do this really.' But they [PhD supervisors] said 'well you have to take up courses, just take research design because it's very good to frame… your research. Ultimately it really did." (Kenny, PhD)

4.7.2 Levelling the playing field

Several students consulted remarked that studying core compulsory courses brought students to a roughly similar level of knowledge, despite varying levels of prior exposure. This is because previous degree disciplines, and thus the research methods content covered, varies greatly:

"[Core courses] are particularly helpful because of how diverse the range of people on the course is." (Fiona, M)

Andrew illustrated the equalising effect of courses despite student heterogeneity:

"I didn't know [much about research methods]…we all come from different backgrounds and [there's] the importance of putting us to the same level, if we are all coming out from the same university." (Andrew, M)

Aaron applied heterogeneity of students' knowledge specifically to quantitative methods and noted the levelling effect of the CQDA course:

"…Lots of people had quants [knowledge], for us it was a mandatory course…But other people didn't... So it really brings people to sort of the same standard. Whether you had quants before or not, do [name of lecturer's] course and you will have a good knowledge base if you ever want to use quants." (Aaron, PhD)

4.8 Qualitative findings: classifications of students' overall views (and personal experiences) of broad methods training by their year of study and methods

Table 3 below shows the qualitative research participants, classified by whether they were a Masters or PhD student (plus their year of PhD study) together with their overall perspective on broad methods training (positive, negative or mixed.) The analytical process for categorising students' views into broadly positive, negative or mixed was by scrutinising the walking interview or video diary transcriptions. Two key components were taken into account for this analysis: 1. students' reactions to the broad methods courses they had studied and 2. whether overall they thought all postgraduate students should undertake broad methods training. If participants were generally critical of all / most of the broad methods training, which they had undertaken (negative) and did not think all students should study broad courses (negative) they were classified as having 'negative' overall views. If they expressed mainly good experiences of their methods courses (positive) and were generally supportive of broad training (positive), then a 'positive' view overall classification was applied. Finally, if they were only positive about only one aspect (either positive about their own experiences but not supportive of broad training for all or vice versa), or voiced mixed personal experiences of methods courses' study, they were categorised as having 'mixed' views. This analysis was conducted to enable both a more meaningful comparison of the qualitative and quantitative data findings in this study and also to more readily compare these findings with other similar studies in the literature.

4.8.1 Qualitative views on broad methods training by year of study

As can be seen in Table 7 below, of those qualitative research participants who held a positive view, the majority were concentrated in the earlier years of study (Masters, 1st year) and later years of study (3rd and 4th year). It should be noted, however, that the majority of participants in the qualitative part of the study were Masters / 1st year PhD students and 3rd / 4th year students. Only 3 participants were in their 2nd year of PhD study.

Negative views of broad training were also higher among those earlier on in their studies (both were 1st year PhD students). Although mixed views were fairly evenly spread across the year groups, they were more common in the later years (3rd and 4th) of doctoral study.

Table 7: Qualitative participants by year of study and view of broad training				
	Masters / 1st year PhD	**2nd year PhD**	**3rd / 4th year PhD**	**Total**
Positive view broad training	4	1	4	**9**
Negative view broad training	2	0	0	**2**
Mixed view broad training	2	3	4	**9**
Total	**8**	**3**	**9**	**Total: 20 participants**

4.8.2 Qualitative views on broad methods training by student's PhD methods

Table 8 below shows the qualitative research participants, classified by their own PhD project methods and by their view of broad methods training (positive, negative or mixed). It should be noted that only the 16 PhD students were included in this, as the 4 Masters students were not ready to carry out their Masters' research project at the time of recording their video diaries.

Table 8: PhD student qualitative participants by PhD research methods and view of broad training				
	Qualitative	**Quantitative**	**Mixed Methods**	**Total**
Positive view broad training	4	0	1	**5**
Negative view broad training	1	0	1	**2**
Mixed view broad training	6	2	1	**9**

Total	**11**	**2**	**3**	**Total: 16 participants**

As Table 8 above shows, the majority of this group of participants held a mixed view of broad methods training. Most participants (11 out of 16) were using qualitative methods and just over half (6) of the 11 using qualitative methods had mixed views of broad training and of the remainder 4 held positive views and only 1 held a negative view. Both students using quantitative methods held mixed opinions regarding broad methods training. The 3 students using mixed methods were equally split across positive, negative and mixed views.

4.9 Case-by-case analysis of students' qualitative views on broad methods training

Appendix 5 provides case-by-case information on the 16 PhD students in the qualitative branch of the study individually classifying 1. their personal experiences of broad methods training courses and 2. their level of support for broad methods training for postgraduate students *in principle*. At least one key quotation per student illustrating their view on each of the above topics, is provided in Appendix 6.

4.10 'Quick wins' analytical theme: analysis of findings according to ESRC postgraduate training and development guidelines outcomes

All findings on students' reactions to the implementation of a broad methods training programme during their Masters and PhD degrees will now be considered together, with reference to the 'quick wins' analytical theme (i.e. things that have worked relatively favourably in terms of the ESRC's agenda for social science doctoral training).

Generally speaking, it is fair to argue the ESRC's view that postgraduate students should undertake broad methods training has been responded to largely positively. Most students in the study embraced the ESRC training agenda (whether or not they actually knew it was initiated by the ESRC) and perceived the benefits of learning about a wider range of methods, beyond those immediately required to undertake their Masters or PhD degree.

Some specific expectations for core methods training set out in the ESRC guidelines in Annex 1 of the 2009 Guidelines will now be examined, reflecting on, and presenting, the relevant data from this study.

4.10.1 ESRC Training Outcome: 'Principles of Research Design': Student's view

"Students must be able to develop and demonstrate a sophisticated understanding of the connection between research questions or hypotheses and the tools required to address them, as well as to gain practical experience of applying those tools." (2009, p.18) appears to be being achieved, as least according to some of the participants in this study.

For example, Charlotte's quotation below expressing how undertaking broad methods training facilitates students possessing the skills to approach a research question / topic in numerous ways, whilst narrower methods training would not, demonstrates this:

"A [research] situation appears…I can look at it this way, or that way.'… If you'd only done specific methods training on whatever it is that you want to do, then you're very closed off. It doesn't help you be open minded whereas a broad range does." (Charlotte, PhD)

4.10.2 ESRC Training Outcome: 'Data Collection and Analysis'

"Students must acquire a basic understanding of the potential and pitfalls of the range of methods of data collection used in the social sciences. The ESRC is not prescribing what this should include but expects that *students will be exposed to a breadth of approaches, tools and techniques."* [emphasis added] (2009, p. 18)

Again, the qualitative data indicates that gaining some kind of baseline level of knowledge across the methodological spectrum is being broadly achieved, as the quotations below show:

4.10.2.1 Students' views

"If you chose to do a Masters, and also if you chose to do a PhD there are certain basics that you have to know, part of this is quantitative methodology… I'm not doing anthropology, yet it's good to know, maybe on a superficial level, what are these people actually doing. Because you might come across a research project that involves anthropological research and then you can go back to your notes." (Aaron, PhD)

"I do generally think that people should have wide general knowledge about these things and should be aware they exist. I'm not saying that people should just study what they need to study to do their own research and that's it. I wouldn't say you have to be narrow minded that way." (Phoebe, PhD)

4.10.2.2 Experts' views

Several experts stressed the importance of a wide methodological knowledge. Expert 4 remarked that teaching an understanding of the strengths and weakness and potential application of different methods was something that is important if methods training is to be high quality:

"Most of the more recent training…we looked at were really about encouraging students to build their skills…in the context of… thinking about what this or that methodology could bring, what were the limits." (Expert 4)

4.10.3 ESRC Training Outcome: 'Breadth of methods understanding'

To develop "fully trained and competent social science researchers, who have… an ability to understand and use a range of research techniques appropriate to their subject area, and *who are conversant and sympathetic to approaches used by other social scientists*" [emphasis added] (2009, p. 10)

Qualitative data quotations from most students show that providing postgraduate students with the skills to have some level of understanding of the methods techniques used in other disciplines / by other researchers is at least being partly achieved. Students elucidated how important it is to learn a range of methods in order to be able to understand research findings that they read about, and to engage in some level of critical thinking about these data.

However, not all students agreed and the quotation from Bella, at the end of this section, demonstrates her contrasting view that she did not feel the broad courses imbued her with what she really needed to know about statistics as a student and researcher coming from a primarily qualitative perspective.

4.10.3.1 Facilitating understanding of research material / working in multi-disciplinary teams: Students' and experts' views

4.10.3.1.1 Students' views

Many students expressed views on the critical importance of understanding a range of methods at least to a superficial level, in order to be able to read material within their topic and discipline and critically engage with this. For example, Denise said:

"Even if I'm not using it, quantitative analysis... you sometimes have to be able to read other people's work. And at least I can kind of understand…. Because how are you going to critique if you don't know"

Leah highlighted that social anthropology can be tied to a methodological identity via its disciplinary identity, but felt this was a limitation to understanding and critically engaging with atypical anthropological or other research:

"I think that anthropology is very much defined by its methods like ethnography…But I don't think total reliance in training in just those methods is…particularly smart. Because part of learning how to do a method, is not only so you can do it, but…when you read evidence that was collected by that method and [understand] how the method shapes the evidence that was created. [Otherwise] how you can learn to realise when to take certain evidence with a grain of salt because you can see that they didn't use the method very well." (Leah, PhD)

4.10.3.1.2 Expert view on broad methods knowledge helping research 'consumption'

Similarly, to students, expert 1 also shared a view on the importance of broad methods training for improving research 'consumption'. Learning broadly about methods facilitates being a better 'consumer' of research as students are in a stronger position to read research books and articles in an informed way, echoing what was said in the literature by Earley (2013) on consumers versus producers of particular research methods. The following quotations from expert 1 reveal their perspective on this:

"And if you've got a general knowledge of methods, you are a much better consumer of research."

"Can you actually read the literature of your own discipline, if you don't understand? I don't think you could go out and do an RCT, but you have to understand what an RCT is and what it can and can't tell you. And I don't see how if you're in health, or education or urban studies you can possibly

read the literature in an informed way if you don't understand at a consuming level, the methods."

4.10.3.1.3 Experts' views – understanding methods in relation to one another

Some of the experts also identified the merit of doctoral students learning about a range of methods and gaining an appreciation of how each method sits within a spectrum of possible methods and a methodological smorgasbord:

"Part of providing this broad training can make them [students] realise that a PhD actually is an essential thing to have in many areas, but that you are better if you have not just done one small piece of research using one small methodology without putting your head above the parapet and realising that wider field of which it is a part. And that usually means not just learning how to critique other methods but where their [students'] work stands in relation to them. So I think that it makes for better quantitative research, and it makes for better qualitative research." (Expert 4)

Expert 3 additionally identified the importance of core learning in qualitative and quantitative methods training, a sense of being exposed to and knowing about other methods in addition to those students are more heavily involved with for their own research. In essence becoming 'conversant' with a range of methods although not an expert:

"I'm coming towards the view that they [postgraduate students] should all do an absolute minimum standard of basic quant and qual. Then they should be exposed to what other methods are available, even if they're not doing hands-on work with them, they should be, maybe for their assessment and for the workshops outside of the lectures that take place... But maybe not doing them, just learning them, what they are." (Expert 3)

4.10.3.1.4 Student's view

As discussed above, one of the ESRC's aims for doctoral methods training is that students should become conversant with a broad set of methods. However, as the quotation below from Bella demonstrates she felt this was not being achieved. The balance of statistical learning in the CQDA course was not right; parts were overly detailed, yet the bigger picture was not clearly communicated to her. As a self-conceived primarily qualitative researcher, Bella wanted to know what the truly crucial elements of quantitative research are, from a non-quantitative perspective:

"I felt like there was details that I would never need to know but I still don't quite understand the broader picture. I think it [CQDA] needs to be pitched so that as a qualitative researcher, I can look at quantitative research and have something intelligent to say about it…so that researchers will have that understanding of a quantitative piece of research." (Bella, PhD)

The student's quotation above is very important for reflecting on a discussion and recommendation point that I make later on in this thesis. As a primarily qualitative researcher, Bella did not feel that the quantitative methods course she studied contained the correct content for what she really needed to know. In essence, the issue and the point that Bella is raising, becomes what does the primarily qualitative researcher really need to know about quantitative methods? It is clear that the level of content and learning will be quite different to a mixed methods or primarily quantitative researcher who directly use quantitative methods. Teasing this out, the difference becomes linked with the concept from the literature on students as consumers versus students as producers of particular research methods (Earley, 2013), in this case quantitative methods and statistics. A primarily qualitative researcher will need to understand how to read quantitative research methods and findings in journal articles or books. They will also need to be able to understand a sufficient level of quantitative methods to understand the work of others, either to probe behind whether a piece of research was conducted robustly and / or to work in multi-disciplinary / multi-methodological teams to understand the work of colleagues, for example in a Government-research organisation. As such, I later argue in this thesis that quantitative methods courses should be pitched at a different level according to this element of student need and student heterogeneity.

4.10.3.1.5 Expert's view: Importance of range of research methods for answering research questions and working in multi-disciplinary teams

The critical importance of both qualitative and quantitative research knowledge being harnessed by multi-disciplinary / multi-methods teams to truly answer research questions was also highlighted by an expert:

"When you're working in those sorts of independent research institutes…you are more used to working in teams of people with different substantive and methodological skills. I can't think of a major study we did that didn't have a group of people who had qualitative expertise that was either helpful in designing questionnaires or exploring the mechanisms which a survey sometimes locks into a black box…there was always a sense that…each of those [qualitative and quantitative

approaches] was a partial picture but all of those together contributed to a more rounded picture." (Expert 4)

The quotation from the expert above, illustrates the importance of students being exposed to a plurality of research methods and methodologies as that no single approach will provide all the solutions that people look to social science to provide. Moreover, having an awareness of a variety of methods can stimulate an understanding of how a particular research design could be criticised and be seen to have limitations, and assist students in formulating their responses to potential critique of their design. Knowledge across a methodological spectrum, and thus being able to consider what alternative ways there could have been to approach tackling a particular research problem gives rise to a consideration of the strengths and weaknesses of each and harnesses a far better case for defence of the chosen approach. In the absence of such knowledge a researcher may be faced with having to use the only method or methods that they know. Again considering Epstein's (2019) analogy of only having a hammer leading to restricted perceptions of tasks, it is precisely this narrow application of potential research methods, arising from having severe limitations in methodological knowledge, that the new training agenda seeks to avoid and to address.

4.10.3.2 ESRC Training Outcome: 'Employability'

"The ESRC will commit to…ensure the provision of high-quality integrated core provision in research skills and research methods training as well as subject specific *training to enable students to undertake their research and to enter the job market successfully."* [emphasis added] (2009: 3)

4.10.3.2.1 Students' views

Preparing Masters and PhD students by teaching the necessary skills for employment is also being achieved to some extent according to my results. Many students in the qualitative study felt they had acquired useful tools for future jobs, as quotations below reveal. However, the picture was not uniformly positive, as will be discussed later in results chapter 5, where obstacles to the success of the broad methods training programme are outlined.

"Everything I'm learning I feel is something I really will use when I get out there and get on with the working world." (Fiona, M)

“For all the people who are doing PhDs who don’t end up in academia, having some demonstrable evidence where you can say I learned about that stuff is probably quite useful for your CV.” (Marion, PhD)

4.10.3.2.2 Experts’ views

Expert 3 raised a very stimulating point regarding a concern that they had that perhaps methods are becoming ‘fetishised’ and that higher education and public bodies are potentially becoming over-focused on them. Expert 3 argued that students must also do research, not just learn about how to do it. In addition to this, their quotation demonstrates a view that, although innovative methods are important, more standard methods are what many people will use and thus remain significant for research:

We mustn’t have fetishes about methods, they’re just tools to solve puzzles. They’re, like a set of garden tools, we mustn’t just go and polish the garden tools in the shed, we need to get out there and do the garden. And…although there’s now a lot of fantastic methodological possibilities…The bread and butter methods are still… fairly familiar to generations of students.” (Expert 3)

Similarly expert 4 urged that methods are just ‘tools’ for research and also raised an important point about embedding methods within other courses, which will be later revisited in this thesis:

I mean methods are about tools we use to answer interesting questions with a very few exceptions, most people don’t go on to be methodologists. We need methodologists but that’s not the only thing we need. So I think that a lot more needs to be embedded in teaching when you’re not in a methods course. (Expert 4)

4.11 Continuing Professional Development (CPD): attending wide ranging seminars – expert view

The importance of Continuing Professional Development (CPD) of a researcher was highly emphasised by one expert in particular. Other experts touched on this point, although not as explicitly, as did some students yet again not in so much detail. Expert 1 felt strongly that doctoral students should spend a designated proportion of their time on CPD activities such as: attending cross-disciplinary seminars on a range of topics and methods that could be completely unrelated to their own PhD research and discipline and learning employment-relevant skills, for example,

conference organising, writing for publication etc. The expert felt that such activities should be timed to be of most relevance to the needs of the PhD student as they progress through their PhD. Thus, for example, CPD on writing for publication would take place in PhD years 3 or 4 when the student was nearing completion and might require these skills to help them gain academic employment. A discussion on employment-related CPD is located in results chapter 4 on the PhD as preparation for employment and will not be presented here. The expert's views on more general CPD activities (such as attending a wide variety of presentations and seminars) and the function of this in making the student aware that there is a wide range of research taking place and broadening their perspective, are however outlined below. This discussion relates to arguments on the interplay between a person more broadly as a social scientist and more specifically within their particular field and discipline, discussed elsewhere in this thesis:

'I think that people should be in an environment when they're doctoral students, where it's explained to them why it's a good idea to hear a seminar from a person who's in a different field. They ought to recognise that 10% of their time ought to be being a social scientist not just an X [someone in a particular discipline]. And the long-term benefits from that, it's not a waste of time, it won't be an obstacle to completion.' (Expert 1)

Expert 1 went on to outline how CPD such as seminar attendance was organised within their university department and how it was recognised as being of particular importance for students in lifting them out of a narrowing perspective:

'We have a department rule in this university that students are required to attend 75% of the departmental public seminars. They have to go and they have to write something about what they learned from it... Because that department got very worried that supervisors and students were getting too narrow. And I think that's right.' (Expert 1)

Expert 1 felt so strongly about this kind of CPD that they argued a dedicated proportion PhD student's time should be on this and an agreement made with their supervisors:

'Let's say between 5 -10% of people's time during their doctoral years 2, 3 and 4 should be on continuing professional development of some kind, and it should be agreed with the supervisory team. It should be logged so that there's evidence that they've done it, so that they would have it on their CV.' (Expert 1)

4.12 Chapter summary and conclusion

This final section separately summarises and then pulls together the key findings from the quantitative and qualitative research on views of postgraduate broad methods training discussed throughout this chapter.

4.12.1 Questionnaire findings summary

The majority of students responding to the questionnaire agreed that PhD students should undertake broad methods training, just under three-quarters (73.8%) agreed and just over a quarter disagreed (26.3%).

4 key independent variables were analysed: gender; age groups; the student's year of PhD study and the student's PhD research methods. Little difference in views was noticeable by gender. The majority of each gender agreed with broad methods training overall, with similar proportions apiece; 74.4% of males agreed and 70.6% of females. The relationship between gender and views of broad training was weak and statistically insignificant at the 5% level.

There was some variation in views by age, however, again this was weak and not statistically significant at the 5% level. Strongest disagreement with broad training was apparent in the youngest age group (21-25 years), 44.4% strongly disagreed / disagreed and 55.6% agreed. By contrast, the oldest age group (aged 41 years and more) demonstrated a different picture with stronger agreement with broad training than the youngest age group, only three-tenths (30%) disagreed and 70% agreed.

Agreement with broad training reduced for year of study and where the student's own PhD methods were quantitative. Students in later years of doctoral study (3rd and 4th year) showed less agreement with broad methods training (60% in 3rd and 4th year compared with 90% in 2nd year agreed with broad training). Year of study and views on broad methods training were moderately associated and not statistically significant at the 5% level.

Moreover, students using primarily quantitative methods were also less supportive of broad methods training than students using other types of methods for their PhD project (57% using quantitative methods compared with 84% using qualitative agreed with broad training). This finding was statistically significant at the 10% but not 5% level and weakly associated.

4.12.2 Video diary and walking interview findings summary

A view clearly emerged from the qualitative data that the majority of the students consulted agreed that postgraduate social science students should study broad methods courses, yet that this was only fully appropriate at Masters level. Doctoral students were typically viewed to be in greater possession of methods skills and extremely pressured by time, with much to achieve in a 3-4 year period. Accordingly, a clear view emerged that PhD students should choose which methods they wished to study, if any, in conjunction with advice from their supervisor(s). Considerations for PhD students around broad methods training were viewed to be framed in 1. addressing any gaps in their existing methodological knowledge and 2. weighing up the relative importance and timing of broad training needs versus accomplishing the doctoral research project and thesis, undertaking deeper training in methods they were using for the doctoral research project (advanced training) and gaining teaching experience.

Masters and PhD students were identified as having differing needs in relation to methods training and participants expressed that it was consequently unsuitable to combine these student groups to study the same methods courses.

Regarding the ESRC's vision for particular training and development outcomes, this research found that several of these are agreed with by students and appear to largely be being attained. The ESRC outcomes concerned are: 'principles of research design'; 'data collection and analysis'; producing researchers who are 'conversant and sympathetic to approaches used by other social scientists' and 'provision of core methods and subject specific training to enable postgraduate degree research and employment skills'. Views gathered qualitatively from students and experts demonstrated general support and agreement with these outcomes, with a small number of exceptions set out in this chapter.

In terms of the effects of disciplinary and methodological identities on reactions to broad methods training, some students and experts raised that disciplines (especially non-social science ones) frame the social world and research problems differently to social science disciplines. Even within social science itself there can be enormous variation such as between anthropologists compared with economists or sociologists and psychologists. Linked with disciplinary differences can also be methodological differences as some disciplines are more typically associated with one set of methods rather than another, for example economics with quantitative methods and anthropology

with qualitative methods. The qualitative data showed methodological identities arising within the research participants; a social work, a South Asian studies and a politics student all described themselves as not 'being a numbers person' and personally identified more with qualitative methods. This type of methodological framing is bound up with students' views of broad methods training and can also impact upon their perceptions of their own abilities in learning and doing statistics, and at times on their actual competency in this field.

4.12.3 Comparison of quantitative and qualitative findings

As outlined above, there was a higher degree of support for broad methods training among the students responding to the questionnaires, yet those giving their views via the qualitative methods were still overall supportive of core methods training. Where a clear tension began to emerge in relation to how students responded to the broad training agenda, is that those involved in the qualitative part of the study primarily felt that only Masters students should undertake compulsory broad methods training. This is further discussed and deliberated in the following results chapter on compulsory methods training.

Chapter 5, the 2nd results chapter, which follows examines whether broad methods training overall should be compulsory for *all* social science postgraduate students and whether each of quantitative and qualitative methods training individually should be compulsory, drawing on my original data findings from postgraduate students and the experts. External factors impacting on students' perspectives of broad methods training such as teacher effects and tutorial group dynamics are also portrayed. Contrasting with findings presented in this chapter on enthusiasm developing as methods courses progress, chapter 5 instead outlines how reactions can evolve to become negative over the duration of a course. Finally, in the chapter that follows, I probe whether, and to what degree students' motivations for PhD study are associated with their perspective on broad methods training, unpacking a hypothesis that instrumental motivations could be related to increased supportiveness of such training due to perceiving its benefit for future employment goals.

5 Chapter 5 Results: Should broad postgraduate research methods training be compulsory?

5.1 Introduction

This chapter analyses and reports on the findings from the quantitative and qualitative research with current social science postgraduate students and the experts relating to the theme of participants' views of, and reactions to whether broad methods training overall should be compulsory for *all* social science postgraduate students and whether quantitative and qualitative methods training each specifically should be compulsory. The term '*all'* students refers to both Masters and PhD social science students. The question of funding type with reference to 'all' students, is also pertinent i.e. whether students are funded by the ESRC or self-funding for their postgraduate degree. The ESRC postgraduate training and development guidelines were originally intended as expected training outcomes for ESRC funded postgraduate students. Many institutions, however, such as the site of this research (the university of Edinburgh), rolled out the research training provision to all their postgraduate students rather than solely focusing on those ESRC funded.

The layout of this chapter on whether methods training should be compulsory is as follows.

As with the previous chapter on whether methods training should be broad, results from the PhD students' questionnaire are typically, although not always, presented first then findings on the same theme from the students' walking interviews and videos diaries follow. Views from the 4 experts are peppered throughout the presentation of students' views where relevant.

In terms of the chapter structure and content, 4 key topics are discussed. Firstly, whether broad training in general should be compulsory and whether either or both quantitative and qualitative methods training specifically should be compulsory.

Secondly, contrasting with findings presented in the first results chapter on how some students' perspectives on methods courses became more enthusiastic over time, this chapter elucidates how some students' views on the compulsory methods course 'Research Design' at the University of Edinburgh altered over time, initially positive yet becoming increasingly negative as the course unfolded.

Thirdly, there is an exploration of whether a student's motivation for PhD study (and whether this was primarily intrinsic or instrumental) may influence their opinion of broad methods training. I hypothesise that those with instrumental motivations would be more supportive of such training, perceiving a direct beneficial link for their future employment goals.

Finally, this chapter appraises key factors that can impact on students' perspectives on whether methods training should be broad and compulsory. Building on findings presented in the 1st results chapter on the 'internal' factors that can shape views such as prior experiences of methods study and disciplinary and methodological identities, this chapter investigates external influential factors from the qualitative part of the study. Key external factors discussed are class size and characteristics of the teaching space, teacher effects and tutorial group dynamics. Throughout the chapter, where appropriate, summaries of findings and comparisons between findings from the two sets of data (qualitative and quantitative) are made in order to guide the reader through the analysis.

The chapter concludes by drawing together key findings from all sets of data and on all the above topics. Higher levels of support for compulsory broad methods training existed among the students responding to the questionnaires (approximately three-quarters agreed with this), than those participating via the qualitative methods, the majority of whom were not supportive (only 4 out of 20 agreed). It is contended that external factors, such as teacher (both lecturer and tutor) effects and tutorial tasks and dynamics were arguably more influential than the course content on how students viewed a particular methods course. The chapter concludes by foreshadowing the focus of the next chapter on whether postgraduate students can effectively study both broad and advanced methods courses.

5.2 Whether broad methods training overall should be compulsory: Qualitative findings

5.2.1 Agreement with compulsory methods training: Students' and experts' views

5.2.1.1 Students' views

For the qualitative part of this study, students and experts were asked whether broad methods training in general should be compulsory for both Masters and PhD students, rather than this being

partitioned into qualitative and quantitative training. Some students, however, commented specifically on training for either method type, which will be discussed following the presentation of results on overall broad compulsory training.

Only very few (2) of the students consulted felt that broad methods training should be compulsory:

“The university, especially the supervisors don’t know how good our research skills are. So by taking these kind of courses, no matter if you are on a Masters by Research or you went in straight by a PhD, the supervisor will be sure that their students will have the abilities to perform the research…So I think that it’s a great idea, that we are enforced to take these courses.” (Andrew, M)

“I’m fine about the course [Research Design] being compulsory. I learned things.” (Toni, PhD)

5.2.1.2 Expert view

1 of the 4 experts also felt that broad methods training should be compulsory for all students (Masters and PhD), as these two quotations from that interviewee reveal. When asked whether *compulsory* broad methods training was a good thing they said:

“In general, yes. That doesn’t mean I haven’t seen core syllabuses which didn’t fill me with enthusiasm…it’s really important…to think about the quality of the teaching ...So I want to be clear that this doesn’t mean that I think every instance of the changes has been entirely wonderful. But I do think on the whole yes, it is an appropriate thing for Masters and PhDs and the 1+3 model to do.” (Expert 4)

“Having that enabling structure is really important. And it may be an irony that you do that by having a greater focus on compulsory skills but it’s not compulsory in the sense that you’re saying ‘there dear, it’s good for you.’ It should be saying ‘look this is exciting, it’s interesting, it allows you to look at problems in different ways, it allows you to ask slightly different questions.” (Expert 4)

It is clear the expert felt broad training should be compulsory as it provided knowledge across the methodological spectrum enabling students to be in a position to examine research problems from a range of potential perspectives.

5.2.2 Disagreement with compulsory methods training: Students and experts views

5.2.2.1 Students' views

Returning to the views of students on this, most of the other students consulted stated that broad methods training should not be compulsory:

"There's no need to tell a postgrad student who is investing money and time and have decided to do a Masters or a PhD, 'you need to do this', this person will know for their own sake otherwise they are not intelligent enough to do a PhD…Overall I would say no mandatory courses, unless you don't have people with [research methods] experience." (Barry, PhD)

As was found by (Deem and Brehony, 2000) some students in the video diaries voiced an opinion that compulsory methods training leads to resentment among postgraduate students:

"If you are being made to do something, it adds a bit of resentment. My fellow students felt similarly, as I talked to some people about this. Courses being compulsory causes resentment."

(Sasha, PhD)

One student said such courses should not be compulsory, yet it is useful that they are available. The opportunity to 'audit' them (that is study a course without undertaking the assessments) should be permitted, as this removes the potential strain of being required to attain high grades but provides a learning and skills gaining opportunity:

"I think it is a good idea…for these things to be on offer so people can have a taste of them. If your research is really, your skills lie in a particular area… I think it's a good idea to encourage people to try these but without putting them under immense pressure…You can do this but it's up to you whether you want to sit the exam or audit it. " (Penny, PhD)

5.2.2.2 Experts' views

Three of the 4 experts shared the views of the students above, that broad methods training should *not be compulsory* for PhD students. These experts, however, argued that such training should be mandatory for Masters level students, a point which did not emerge in the students' views:

"There should be an absolute minimum of quantitative and qualitative methods that the student must do to come out of that 1 [Masters year] with their Masters in Social Research. I think that must be compulsory." (Expert 3)

Similarly, expert 1 strongly felt that compulsory methods training was highly appropriate, and in fact required, at the Masters degree level:

“It [methods training] should be compulsory at the M [Masters] level. I’m very committed to the notion that you should have an M, and that should have a syllabus which is UK wide and designed by leading scholars in the field and that should be compulsory.” (Expert 1)

According to expert 1, doctorates are more specialised and individualised than Masters degrees and no training should be compulsory. The student and their supervisors should decide which training would be most useful according to the research methods they are using for their doctorate project:

“A PhD obviously is narrow and specialised in a discipline, but I think that the M should be broad…For the years 2, 3 and 4 it should be a choice of the student, primarily influenced by methods’ needs of their thesis… I wouldn’t for a minute suggest that a student who’s doing an ethnographic study should be forced to go to more courses about how to design RCTs, because that should all have been done in the M year…Once you get to years 2-4, I wouldn’t have anything compulsory.” (Expert 1)

Expert 1 felt so strongly that methods training should not be compulsory at the PhD level that they remarked they would feel concerned about any higher education institutions that did do this:

“I would leave content and everything else entirely to the students and their supervisors. I would be very worried about anywhere that was prescribing things for doctoral level people.” (Expert 1)

Expert 2 also felt that broad training should be compulsory at Masters degree level but extended this point by adding such learning would preferably be built into undergraduate degrees, prior to postgraduate education:

“I still remain convinced that they [students] need a generic training in the Masters programme…Ideally this would be more incorporated in undergraduate degree programmes.” (Expert 2)

Expert 4 echoed the point that social science undergraduate, and postgraduate, degrees should consistently include methods training, but specifically quantitative methods, especially as school subject choices narrowly focuses early on and many students cease learning any maths at a relatively young age, such as 16:

"This is something that the Academy of Social Sciences is working on now because of the very narrow specialisation of UK subjects in secondary education, although I know that Scottish Highers are somewhat different. But still, far higher proportions even in Scotland, and certainly in England and Wales do stop taking any number and data skills after 16. You have this market failure, as it were, at secondary school level that isn't going to change until we broaden the secondary school curriculum in this country. And that means that undergraduate and postgraduate education have a slightly more important role to play in ensuring that people develop those skills and have the chance to be exposed to them." (Expert 4)

5.2.3 Video diary and walking interview findings summary – compulsory broad methods training

It was clear that the majority of students disagreed with compulsory broad methods training for PhD students. Only 4 out of 20 students felt to some degree that broad training should be compulsory for all, of these interestingly 3 were video diary participants (Masters or 1st year PhD students) and one a walking interview participant. Only one student (a video diary participant) definitively argued that all students should study the compulsory courses, 2 other video diary participants views were more qualified in their responses and their feedback related to a particular compulsory course. Expert 4 felt that broad training should be mandatory. The walking interview PhD student, who displayed some degree of support for compulsory broad methods training, demonstrated conflicting views on this. Although primarily supporting choice for PhD students in terms of their methods training, she commented that if one course must be mandatory it should be 'Data Collection'. The attitudes that students held towards particular compulsory courses at the outset, sometimes changed over time as the course evolved and there are examples of this becoming more positive or more negative.

Most students, however, argued that broad methods training should not be compulsory for PhD students. Key reasons given were: it was not appropriate to study seemingly irrelevant methods; that students have enough academic maturity to decide which methods they wish to study; issues of time constraints; tensions and trade-offs between elements of what needed to be accomplished within a relatively short 3-4 year PhD degree programme and the stress of trying to understand methods which are not perceived as a good fit for the student / not within their area of interests). As with the literature (Deem and Brehony, 2000) some students expressed that compulsory training causes resentment among postgraduate students. Most of the experts also argued that

methods training should not be compulsory for PhD students but that it should be for Masters students, which was not specifically voiced by the students consulted who tended to say that it should not be compulsory for either student group. Students did, however, comment that combining Masters and PhD student cohorts for studying broad methods courses did not work especially well due to their differing needs and in some cases levels of methods knowledge, and that consideration should be given to splitting these groups up. Quotations were provided which illustrated this view in chapter 1 in the section on students' views of whether broad methods training should be compulsory.

5.3 Whether quantitative methods training should be compulsory: Questionnaire findings

5.3.1 Current PhD student questionnaire

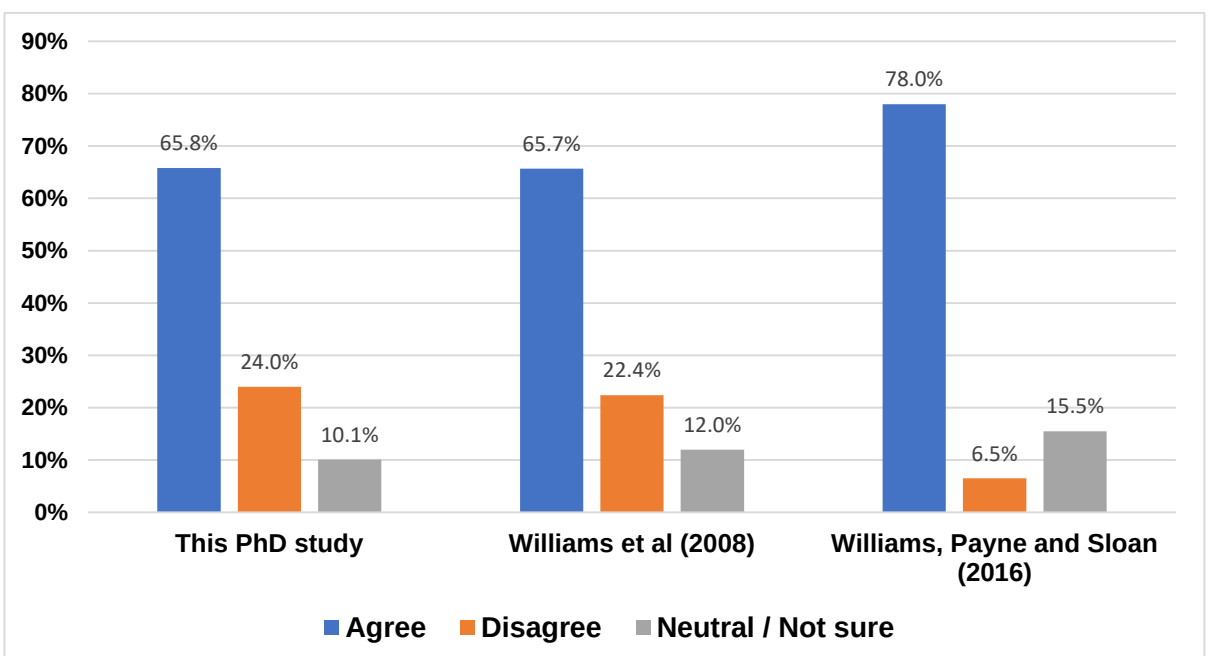
The question on whether methods training should be compulsory was split into whether quantitative training should be compulsory and whether qualitative training should be compulsory. A presentation of the questionnaire results on whether quantitative training should be compulsory is provided below.

The majority of this thesis reports on quantitative data with the neutral position omitted from the analysis to enable more clearly contrasted views of agree versus disagree to be presented. However, to enable more direct comparison with findings from Williams, Payne and Sloan (2016a) below on whether sociology (2007 study question) / social science (2013 study question) undergraduates should study statistics, results are also presented with the neutral position reported upon. It should be noted, as commented upon in the literature review chapter, that Williams *et al* (2008) / Williams, Payne and Sloan (2016a) phrased their questionnaire item in the negative on learning statistics, by asking whether respondents agreed that students should <u>not</u> study statistics rather than asking whether they should learn such methods. Consequently, responses in the 2007 and 2013 studies reported on in Williams, Payne and Sloan (2016a) agreeing that students should not study statistics will be taken as equivalent to my study's responses disagreeing that they should and vice versa (i.e. Williams et *al*.'s 2007 and 2013 studies' disagree position that students should not study statistics will be taken as equivalent to my study's agree that they should position).

Nearly three-quarters (73%) of PhD students overall agreed and 27% disagreed in the current PhD study that broad quantitative methods training should be compulsory.

Including the neutral position in the analysis in order to compare with Williams *et al*.'s 2 studies, results had a high degree of congruence between this study and Williams *et al*.'s study conducted in 2007 as shown in Figure 11 below. Approximately just under a quarter in both studies disagreed (24% in this study and 22.4% in Williams *et al*. (2008), just under two-thirds in both studies agreed (65.8% in this study and 65.7% in Williams *et al.*'s 2007 study) and 10.1% neither agreed nor disagreed in this study and a very similar 12% in Williams *et al.* (2008) were not sure whether quantitative methods training should be compulsory. Williams *et al.*'s 2013 study respondents showed more positivity about studying statistics than their 2008 study. 6.5% agreed that social science students should not have to study statistics (equivalent to disagreeing that statistics study should be compulsory), 78% disagreed that should not have to (equivalent to agreeing with compulsory statistics) and 15.5% were not sure.

Figure 11: Current students' views whether quantitative methods training should be compulsory: comparison of this study with Williams *et al* (2008) and Williams, Payne and Sloan (2016a)

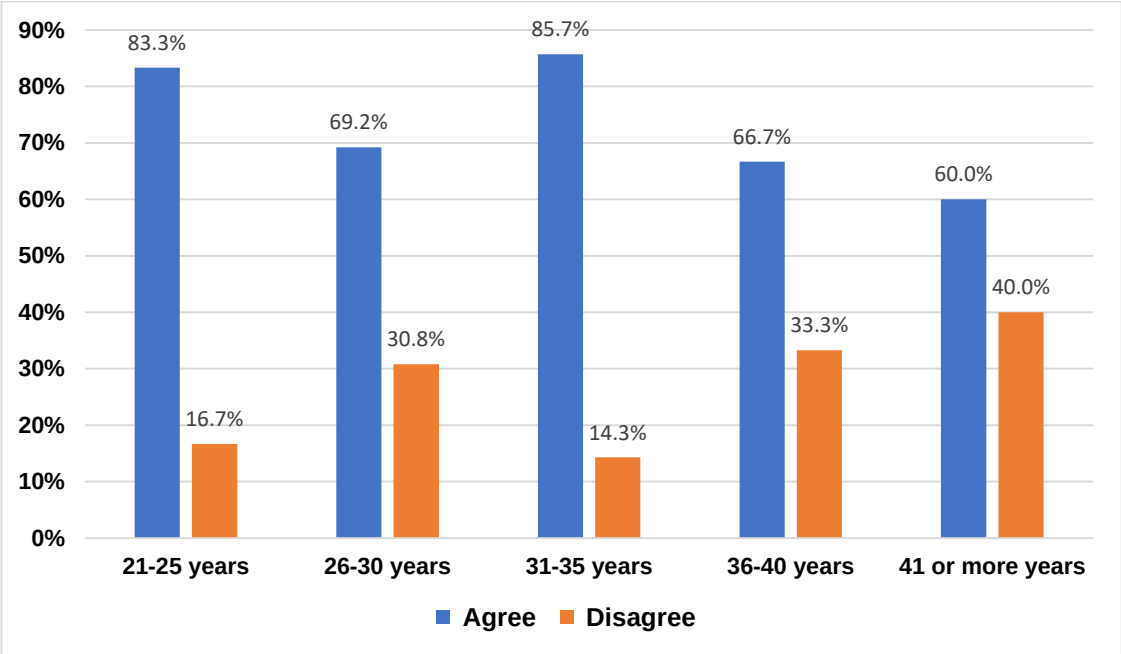


Gender: More females disagreed with compulsory quantitative methods training than males. Two-fifths (41%) of females disagreed and 59% agreed. Just under a fifth (19.2%) of males, however,

disagreed and 80.8% agreed. Gender and views on compulsory quantitative methods training were weakly associated and statistically significant at the 10% but not 5% level (x^2=0.05; p≤0.1; V=0.19).

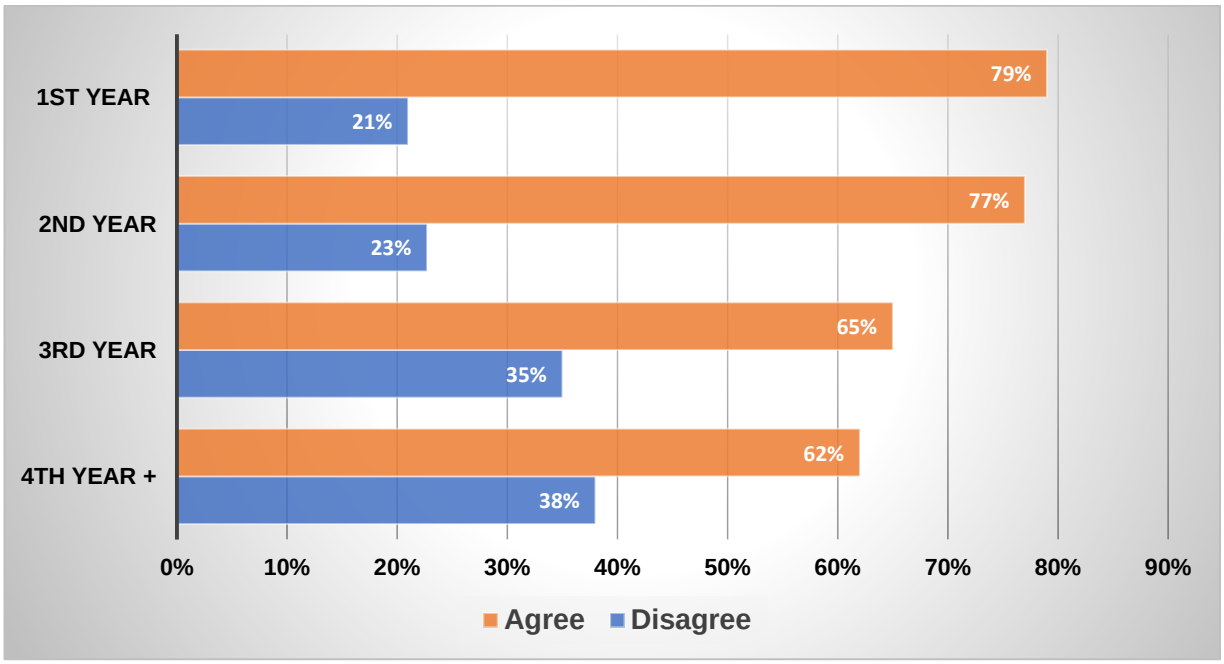
Age: As shown in Figure 12, the results of views on whether quantitative training should be compulsory by age are rather mixed and do not show a clear trajectory, instead a jagged picture with peaks and troughs emerges. Stronger agreement is apparent and very similar in the youngest (21-25 years) and middle (31-35 years) age groups, 83.3% and 85.7% agreed respectively. Agreement with compulsory quantitative training, however, dips in both the 2nd youngest (26-30 years) and 2nd eldest (36-40 years) age groups, 69.2% and 66.7% agreed respectively. 60% of the eldest age group (41 or more years) agreed with compulsory quantitative training. Age and whether quantitative training should be compulsory are weakly associated and not statistically significant (x^2=0.55; p≤.05; V=0.21).

Figure 12: Current PhD students' views whether quantitative training should be compulsory by age groups



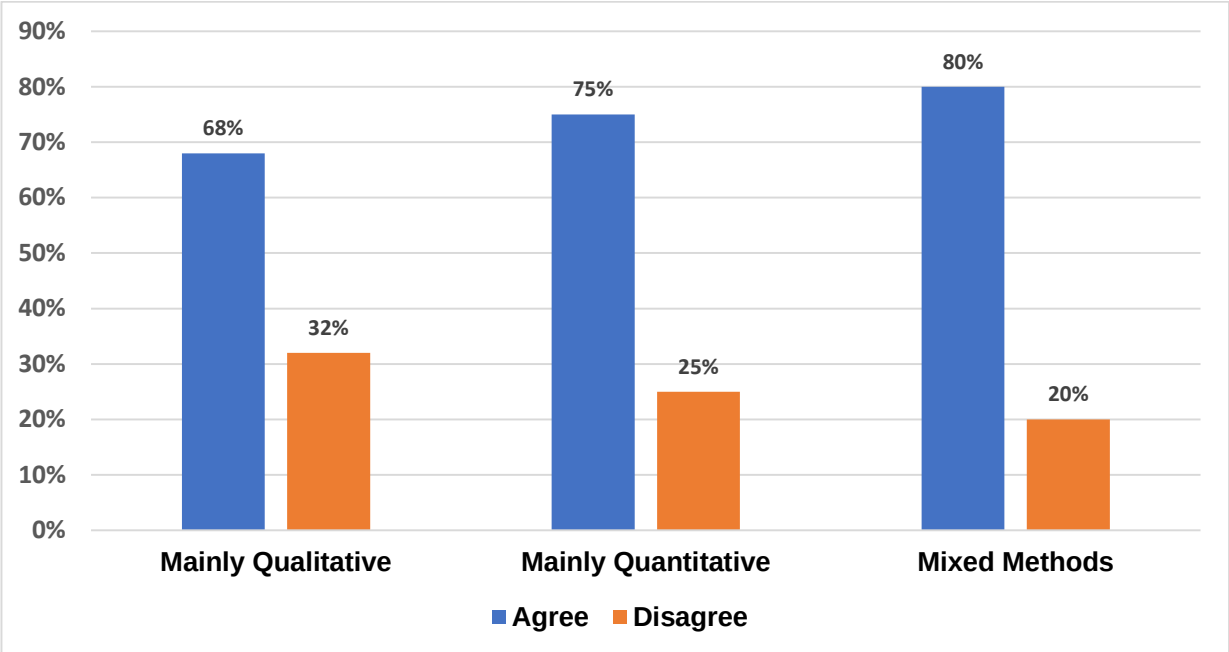
Year of study: Although overall more students agreed with compulsory quantitative training than disagreed, it is clear (as shown in figure 13 below) that disagreement increased as students progressed through their doctoral studies from 21% in 1st year to 38% in 4th year disagreeing / strongly disagreeing. The results were weakly associated and not statistically significant (x^2=0.41; p≤.05; V=0.24).

Figure 13: Current PhD students' views whether quantitative training should be compulsory by PhD year



Students' PhD research methods: Surprisingly, little difference emerged on whether quantitative methods should be compulsory by which methods students were using in their own PhD research, although a reasonable supposition would be that those using quantitative methods would be most supportive of its compulsory teaching. Most students agreed that such training should be compulsory regardless of their own methods, with those using mixed methods expressing the strongest agreement. As shown in Figure 14 below, there was only 7% difference (32% compared with 25%) between students using qualitative methods and students using quantitative methods disagreeing with quantitative training. The two variables were also only weakly associated and not statistically significant (x^2=0.52; p≤.05; V=0.17).

Figure 14: Current PhD students' views whether quantitative training should be compulsory by students' PhD methods



5.3.1.1 Whether quantitative methods training should be compulsory questionnaire findings: Summary

Nearly three-quarters (73%) agreed and 27% disagreed with compulsory quantitative training. Some difference in views was observable by gender with more females disagreeing than males, four-tenths (41%) of females compared with just under a fifth (19.2%) of males disagreed. Gender and views on compulsory quantitative training were statistically significant at the 10% level but only weakly associated. Views on whether quantitative training should be compulsory by age groups are rather mixed with no clear trajectory. Stronger agreement is apparent in the youngest (21-25 years) and middle (31-35 years) age groups, 83.3% and 85.7% agreed respectively.

Disagreement with compulsory quantitative training increased as students progressed through their doctoral studies from 21% in 1st year to 38% in 4th year disagreeing. Reflecting on what might lie behind this increasing disagreement with compulsory quantitative training, it may merely be a reflection of views changing as the students progressed through their studies, or it may be because earlier cohorts that began in, for example, 2011 were less persuaded of the case for compulsory courses than later cohorts that began, for example, in 2015. The reasons this time difference in when postgraduate student cohorts commenced their studies could be important is that by 2015 the DTCs, and their underpinning philosophy, had arguably had an opportunity to 'bed in'. For

example, through students being able to see the benefits of SGSSS summer schools and other training opportunities. Little difference emerged by students' own PhD research methods, although those using mixed methods were most supportive; 80% compared with 75% using mainly quantitative and 68% using mainly qualitative methods agreed.

5.3.1.2 Whether quantitative methods training should be compulsory: Qualitative students' views

The majority of students consulted in the qualitative element of the study, expressed that PhD students should not have to study compulsory quantitative methods courses as the quotations below reflect:

"A lot of people that do a 1+3 already have research [experience] and if they know for example that they're not going to use statistics, then I don't see that they should do it." (Sienna, PhD)

"I would say that most people who are doing a Masters or a PhD have probably had some type of math course in their past. I think that it [quantitative methods training] should be…encouraged more as an audit." (Denise, PhD)

Bella saw some value in postgraduate students gaining some appreciation of quantitative methods yet felt that specific statistics data analysis courses should not be compulsory such as those on SPSS:

'I think it's important to have some element of quantitative research in there, so people have an understanding of that. But I think it would need to be done very differently…I don't think you should have to do an SPSS course.' (Bella, PhD)

5.4 Whether qualitative methods training should be compulsory

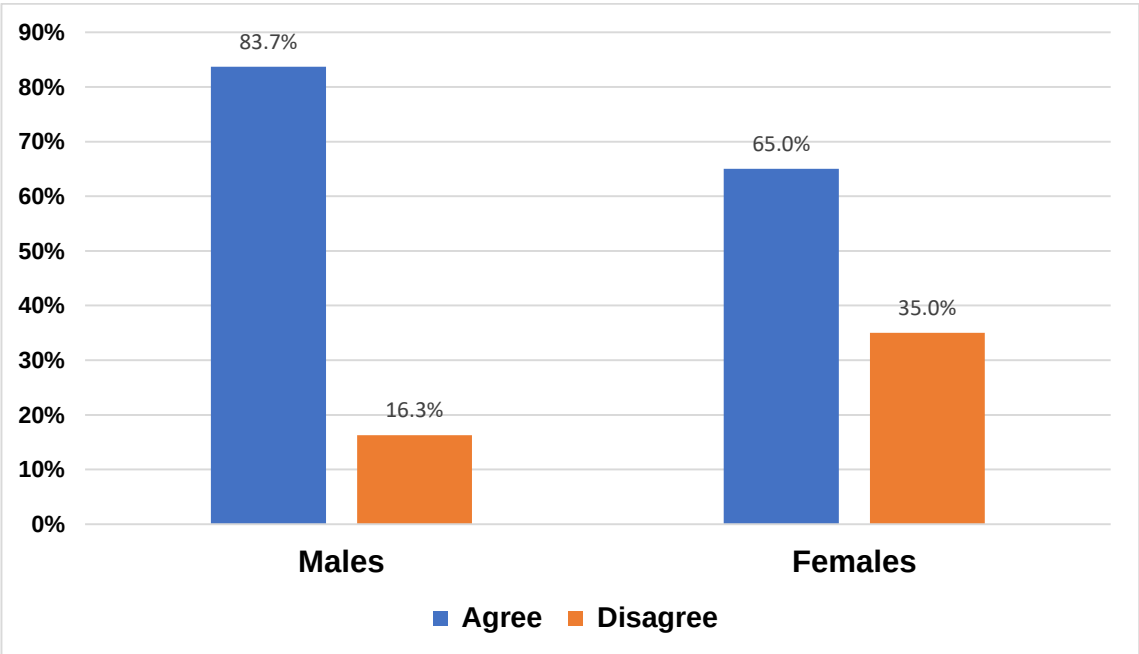
5.4.1 Current PhD student questionnaire

Again the majority of students agreed that qualitative methods training should be compulsory. The percentage who agreed with this was slightly higher (approximately 5% difference) than those who thought quantitative methods should be compulsory (78.3% compared with 73%). Overall 78.3% agreed that qualitative methods training should be compulsory and 21.7% disagreed.

Gender: There was a noticeable difference between the genders as to whether qualitative methods training should be compulsory, with more than twice the percentage of females disagreeing that it should (35% of females disagreed compared with 16.3% of males). 83.6% of males agreed that qualitative training should be compulsory compared with 65% of females (Figure 15 below). There is a weak association which was statistically significant at the 10% level (x^2=0.08; p≤0.1; V=0.21).

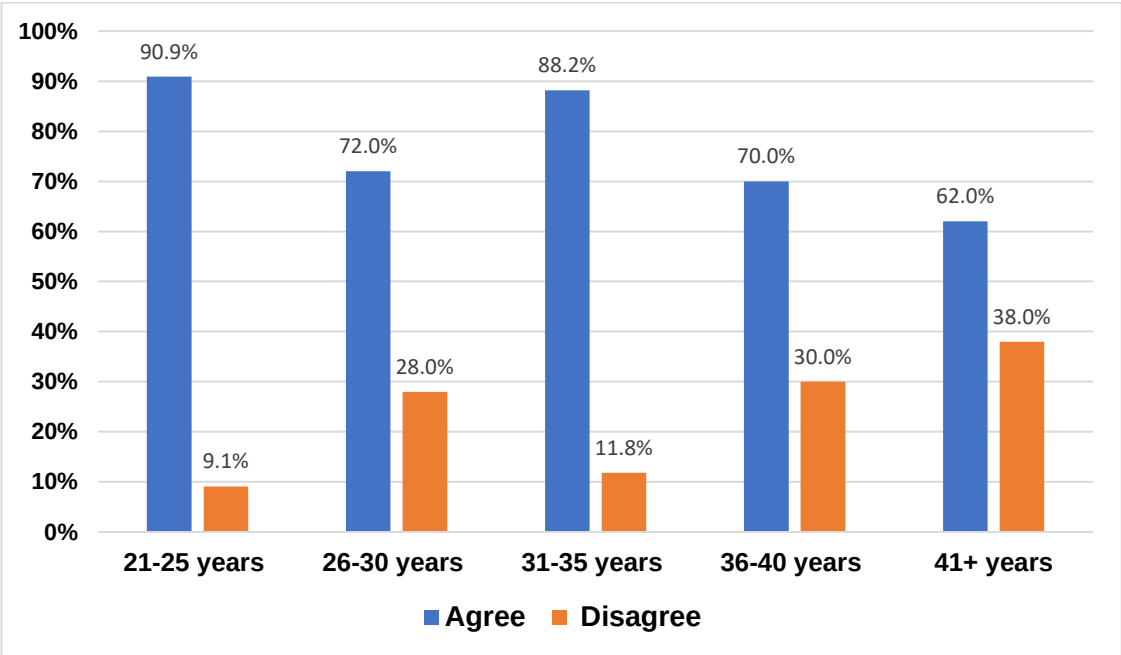
This finding does not corroborate the likely expectation that more females would support compulsory qualitative training based on a preference for this type of method indicated in some literature (Plowman and Smith, 2011). The finding may, however, be indicative of something other than a lack of qualitative methods' support. It could be that females are less likely to be prescriptive for any training to be compulsory, for example Tessema, Ready and Malone (2012) argue that female university students are more 'lenient' regarding course satisfaction (p. 3). This is potentially substantiated by the fact that the percentages of females who agreed / disagreed that each of qualitative and quantitative methods training should be compulsory was broadly similar (65% compared with 59% respectively), demonstrating that type of method training was largely unimportant.

Figure 15: Current students' views whether qualitative training should be compulsory by gender



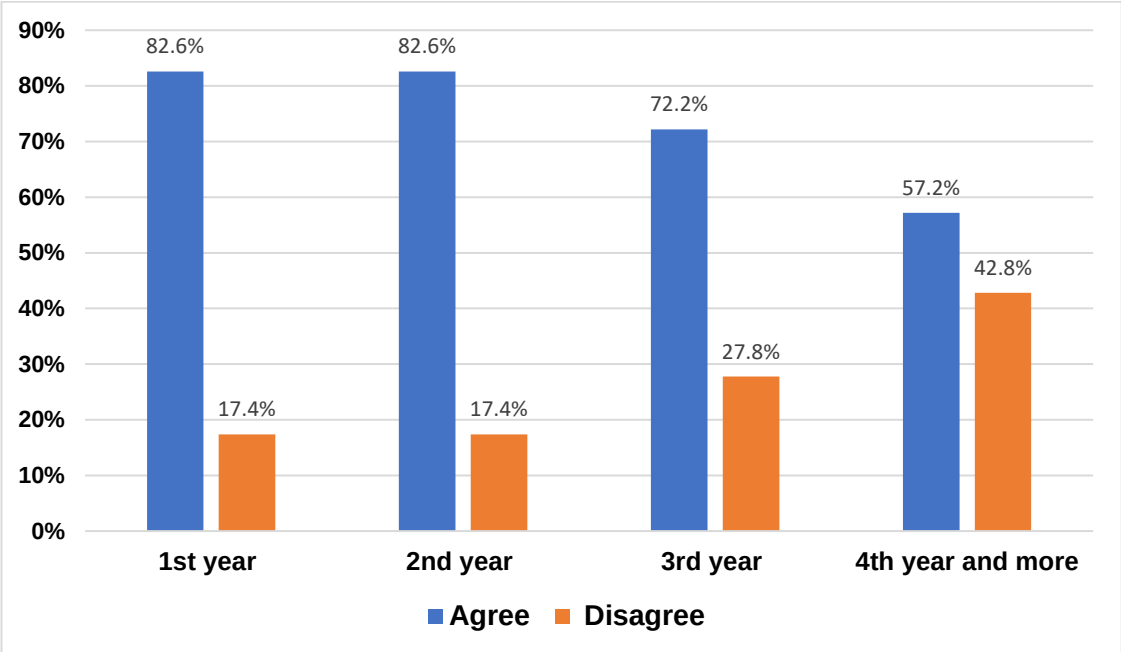
Age: The majority across all age ranges agreed that qualitative training should be compulsory. The data, however, showed less support for compulsory qualitative training among those aged 26-30 years and 41+ years than other age groups, especially the latter with only 62% agreeing that it should be compulsory (see Figure 16 below). Again, as with views on whether quantitative training should be compulsory by age groups (see Figure 12 on p 175), no clear pattern emerged with peaks and troughs occurring across the age ranges. Views on compulsory qualitative training and age were weakly associated and not statistically significant (x^2=0.4; p≤.05; V=0.22).

Figure 16: Current students' views whether qualitative training should be compulsory by age



Year of PhD study: Overall, the majority agreed that qualitative methods training should be compulsory, with over three-quarters (77.5%) on average agreeing across all year groups. 1st and 2nd year PhD students both showed the highest levels of agreement (82.6% in each year group) although support for compulsory qualitative training reduces in later years of doctoral study (72.2% agreed in 3rd year, 57.2% agreed in 4th year and more), contradicting findings from (Orton-Johnson and Webb, 2011) qualitative study. There is a clear pattern as Figure 17 below shows, that support for compulsory qualitative training declines as the years of PhD study increase. However, there is a weak association and the finding is not statistically significant (x^2=0.3; p≤.05; V=0.26).

Figure 17: Current students' views whether qualitative training should be compulsory by year



Students' PhD research methods**:** The majority of students thought that qualitative methods training should be compulsory, regardless of which methods they were using in their own PhD. However, the strongest disagreement with compulsory qualitative methods was rather surprisingly among students who were using mainly qualitative methods in their own PhD (27.5% strongly disagreed / disagreed compared with 14.3% of those using mainly quantitative methods and 19% of those using mixed methods, although it should be noted that only 7 students were using primarily quantitative methods so this analysis is based on small numbers). There was a weak and not statistically significant association (x^2=0.6; p≤.05; V=0.11).

Comparing views of compulsory quantitative methods training with that of compulsory qualitative training across students using different types of methods for their own PhD, as might be expected slightly more students using qualitative PhD research methods disagreed with quantitative methods training being compulsory than qualitative methods training (32% compared with 27.5% respectively). However, perhaps contrary to expectation, more students using quantitative PhD research methods also disagreed with compulsory quantitative training than compulsory qualitative methods training (25% compared with 14.3% respectively). Students using mixed methods in their PhD held very similar views on whether any type of training should be compulsory with 81% agreeing with compulsory qualitative training and 80% agreeing with compulsory quantitative training.

5.4.2 Whether qualitative methods training should be compulsory: Questionnaire findings: summary - Current PhD students' views

Overall more than three-quarters (78.3%) agreed and 21.7% disagreed that qualitative methods training should be compulsory. There was a noticeable difference between the genders, with more than twice the percentage of females than males disagreeing that qualitative methods training should be compulsory (35% of females disagreed compared with 16.3% of males). Gender and views on compulsory qualitative training were statistically significant at the 10% level (chi square p value 0.088) and weakly associated (Cramer's V 0.2121). There was less support for compulsory qualitative training among those aged 26-30 years and 41+ years than other age groups, especially the latter with only 62% agreeing, however, no clear pattern emerged with peaks and troughs occurring across the age ranges.

There was a clear pattern of declining support for compulsory qualitative training as students progressed through their PhD. 1st and 2nd year PhD students showed the highest levels of agreement (82.6% in each year group) reducing to a mere 57.2% in 4th year. There was strongest disagreement with compulsory qualitative methods rather surprisingly among students who were using mainly qualitative methods in their own PhD (27.5% strongly disagreed / disagreed compared with 14.3% of those using mainly quantitative methods and 19% of those using mixed methods. This may reflect an overall reduced likelihood among qualitative research proponents to agree with compulsory training of any sort, rather than being specifically directed at the fact the training was qualitative per se. This possible interpretation of the results is reinforced by the fact that my data showed that regarding whether quantitative training should be compulsory (discussed above in this chapter) those using mainly qualitative methods for their doctoral research were the least likely to agree, only 68% of those using mainly qualitative methods agreed compared with 75% using primarily quantitative and 80% using mixed methods.

5.5 Employed PhD graduate questionnaire: whether quantitative and qualitative methods training should be compulsory

The majority (80.8%) of employed post doctorates agreed that quantitative training should be compulsory during postgraduate degrees. There was even more support for compulsory qualitative training, however, with 93% of employed respondents agreeing.

5.6 Qualitative data findings: whether qualitative methods training should be compulsory: summary

Only one student commented on whether qualitative methods training should be compulsory. Megan felt that qualitative training should not be compulsory for those solely using statistics just as she had said that quantitative training should equally not be mandatory for qualitative researchers:

'At the same time, if you know that you will just do statistics and most probably you will never do document analysis, or discourse analysis or interviews, maybe it's best for you not to take the 'Data Collection' [course]. (Megan, PhD)

A video diary student commented on their particular feelings on qualitative methods training that felt irrelevant for them as they were using primarily quantitative methods in their own PhD project. Thus although the student did not advocate that qualitative training should not be mandatory, her view imparts a sense of the frustrations that students can feel when they are obliged to spend time learning material that they do not perceive to be of relevance in the short or medium term:

In terms of 'Data Collection', for me doing a quantitative PhD and being made to do this course, because it's quite qualitative I found that it didn't actually complement my PhD research as much as I would have liked…it was a bit more of a distraction than too helpful. 2-hour lectures, 2-hour workshops every week and then you had to prepare a mini qualitative study every workshop. All that takes a lot of time and when it's not directly relevant to what you're doing in the PhD, for me that was a little bit frustrating. (Sasha, PhD)

5.7 Comparison of quantitative and qualitative findings – compulsory broad methods training

Relatively little data is available from the qualitative branch of the study on this as comments were largely focused around broad research training in general rather than whether it should be compulsory. Higher degrees of support for compulsory broad methods training exists among the students responding to the questionnaires (approximately three-quarters agreed with this), however, the majority of those participating via the qualitative methods were not supportive of this

(16 out of 21). Most video diary and walking interview participants said that PhD students should not have to study compulsory quantitative methods courses. Few comments were made on whether qualitative courses should be compulsory from video diary or walking interview participants. Thus, there is little to remark upon regarding comparing findings from the questionnaire data with the walking interview / video diary findings.

5.8 Comparison of views on whether quantitative and qualitative training should be compulsory: Questionnaire data

Regarding findings from the questionnaire, however, comparison can be made between respondents' views on whether quantitative methods training as opposed to qualitative methods training should be compulsory.

Regarding current PhD students, slightly stronger support for compulsory qualitative than for compulsory quantitative training emerged (78% compared with 73% respectively). Regarding employed PhD graduates, again a pattern of stronger support for compulsory qualitative rather than quantitative training was manifest, with 93% of employed respondents agreeing with compulsory qualitative training and 80.8% with compulsory quantitative training. Judging employed graduate views alongside current PhD students, it can be observed that those who were already employed were far more likely to agree with compulsory training of either methodological type.

Among current PhD students, gender differences were also observable; far more males agreed with compulsory training than females for both method types. Eighty-four percent of males agreed with compulsory qualitative training compared with only 65% of females. Regarding quantitative training, a similar difference was notable although the percentages across each gender were slightly lower than for qualitative training. Eighty-one percent of males agreed with compulsory quantitative training compared with only 59% of females. Gender and views on both training types were statistically significant at the 10% level and weakly associated (x^2=0.05; p≤.05; V=0.19). Potential hypotheses for diminished female support regarding compulsory methods training is commented upon more fully in Chapter 6.

Similar observable patterns of peaks and troughs in terms of views on both method types by age groups were apparent among current PhD students. More agreement was notable in the youngest and intermediate age groups; 91% of 21-25 year olds agreed with compulsory qualitative

compared with 83% agreeing with compulsory quantitative training. There was slightly less agreement in the 2nd youngest and 2nd eldest age groups for both method types yet again there was increased support for compulsory qualitative training; 72% of 26-30 year olds agreed with compulsory qualitative compared with 69% agreeing with compulsory quantitative training.

Agreement with both method training types declined as students progressed through their doctorate but there was a sharper decline in agreement with compulsory qualitative training than compulsory quantitative training. 79% agreed with compulsory quantitative training in 1st year falling to 62% by the time that students reached their 4th year. 83% agreed with compulsory qualitative training in 1st year reducing to 57% in 4th year. More students using mixed methods (80%) agreed with compulsory quantitative training than those using quantitative methods (75%) or qualitative methods (68%). Most agreement with compulsory qualitative training this time was perhaps surprisingly among students using quantitative methods (86%) compared with 81% of those using mixed methods and 72% of those using qualitative methods.

Only the relationship between gender and views of compulsory training was statistically significant (for both views on quantitative and qualitative training) for current PhD students. There were no statistically significant relationships between any of the other variables.

5.9 Change in attitudes towards compulsory methods courses over time; views of course becoming increasingly negative

Turning to examine the views of some students who formed increasingly negative views of particular compulsory courses as they unfolded. Aisha's initial view of the 'Research Design course' at the outset of the video diaries was optimistic, however, her stance on the course became less positive as it unfolded. The first quotation is from Aisha's first diary entry and the second and third ones are from her final diary entry at the end of the course, demonstrating the shift in her attitude towards the course:

First diary entry: "The course [Research Design], to me, seems pretty useful as I do not have a background in Sociology and as Sociology can seem to be very abstract and philosophical at times, it seems like a great idea to have somebody actually explain everything to me."

Final diary entries:

“Overall, I wouldn’t say that this course [Research Design] was all bad, but I had hoped that it would be better.”

“I still don’t understand the chronology of the lectures. There should be a certain flow to the topics, I found none in this course. The tutorials became really pointless in the end and I lost all interest in them. I have no idea whether it was because of the tutor or because of the tasks given to us or because of a certain few dominating students.” (Aisha, PhD)

Toni, a video diary participant, with a strong background in statistics but little knowledge of social science generally, was very positive about the ‘Research Design’ course at the outset, yet this enthusiasm dwindled hugely over time.

Toni’s video diary 1 entry:

“I am coming into the core methods training with a bit of a different perspective perhaps. I’m from a quantitative background. I’m trained as a statistician in Australia and I’ve got no exposure to social science at all. So I’m excited to be taking the ‘Research Design’ course because I’ve got no idea how research is conducted in the social sciences, and I’ve never done qualitative research and I don’t know anything about that process.”

Toni’s video diary 8 entry:

“I didn’t get a lot out of it [the lecture]. I wish I hadn’t gone. I’m just a bit of a whiner this week. Yeah, the lecture was terrible. Tutorials are fun chats to just kind of catch up with other PhD students. But I didn’t find it that useful this week. Apparently the lecturer for next week is good, he has a really good reputation so it might be better.” (Toni, PhD)

An important point to note is that some of the video diary participants informed me that actually only continued attending the ‘Research Design’ course lectures because they were participating in this study and recording a video diary on their views of the course.

For example, Toni said she would have ceased attending either the lectures or tutorials if not for participating in my research:

“But honestly I think if I wasn’t involved in this research project, I wouldn’t be going to the lectures or tutorials at this point.” (Toni, PhD)

Sasha echoed this point but stated that although she would have discontinued attending lectures she would still have continued participating in tutorials, although perhaps only due to the fact that attendance was officially recorded at theses:

“If I hadn’t been doing the video diaries, I would have stopped going to the lectures but would have continued going to the workshops / tutorials, attendance was taken at these). Attendance at lectures really dropped off as the course progressed, it became about half full.” (Sasha, PhD)

5.10 PhD motivation

Now turning to consider students’ motivation for doctoral study and how this may influence their view of whether PhD students should have broad methods training.

5.10.1 Current PhD students’ questionnaire

Respondents could tick only one option as their main motivation for a PhD degree. In terms of student’s primary reasons for wanting to study for a PhD, ‘interest in the topic’ was the most popular response given by 30 respondents out of 78 (38.5%). This can be classified as an ‘intrinsic’ motivation (Collinson and Hockey, 1997; Orton-Johnson and Webb, 2011) and compared with findings in this area from the qualitative research in my doctoral study in later in this chapter on p. 179.

Motivations geared towards gaining later employment, for example ‘improving career prospects for an academic / research career’ and ‘improving career prospects for a non-academic career’, can be classified as ‘instrumental’ and similarly can be compared with the qualitative findings on this from my study. Academic career improvement motivations were the 2nd most popular response given by 18 respondents (23.1%). All career-related responses can be grouped together (‘improving career prospects for an academic / research career’ and ‘improving career prospects for a non-academic career’) and this type of response was given by 21 respondents (26.9%) of the sample.

Studying for a PhD feeling like a ‘natural step’ was the key motivator for 15.4% of respondents. ‘Funding being available’ was also a fairly popular motivation with nearly 9% of respondents citing this as their primary reason for studying for a PhD. All other reasons (‘supervisor encouraged’;

'another person inspired me' and 'other') were primary motivators for only a small percentage of respondents (between 2-4% as can be seen in Table 9 below.)

Table 9: Current PhD students' main motivation for PhD study	
Motivation	**Percentage (count)**
Topic interest	38.5% (30)
Academic career	23.1% (18)
Non-academic career	3.8% (3)
Improving career prospects both (grouped total for academic and non-academic career categories) *	26.9% (21)
Natural step	15.4% (12)
Funding available	9% (7)
Supervisor encouraged student	3.8% (3)
Another person inspired them	3.8% (3)
Other	2.6% (2)
Total (* excepting grouped academic and non-academic career)	100%

5.11 PhD motivation and broad methods training view: Current PhD students

Two key sets of variables on this were contained within the questionnaire, a multiple-choice question whereby respondents could select more than one option from a list and a single response question that asked them to state which of these was their primary motivator for doctoral study.

5.11.1 Multiple choice motivation responses

Firstly, responses to the multiple-choice question did not show a great deal of variation in attitudes towards broad methods training by whether a respondent was intrinsically or instrumentally motivated to study for a PhD. Of the 51 respondents who selected 'topic interest' as one of their

choices, 76.5% agreed that broad methods training was important. This was not statistically significant (x^2=0.28; p≤.05; V=0.14).

Regarding responses to doctoral study motivated by gaining an academic career position (classified as 'instrumental motivation'), of the 37 respondents who selected this as one of their choices, only slightly more than those choosing 'topic interest' (78.4%) agreed that broad methods training was important. Again, this result was not statistically significant and the variables were only weakly correlated (x^2=0.31; p≤.05; V=0.13).

In terms of responses demonstrating instrumental motivation but this time by a non-academic career, of the 19 respondents selecting this option 79% agreed that broad methods training was important (a highly similar percentage for the academic career respondents). This result was not statistically significant (x^2=0.53; p≤.05; V=0.08).

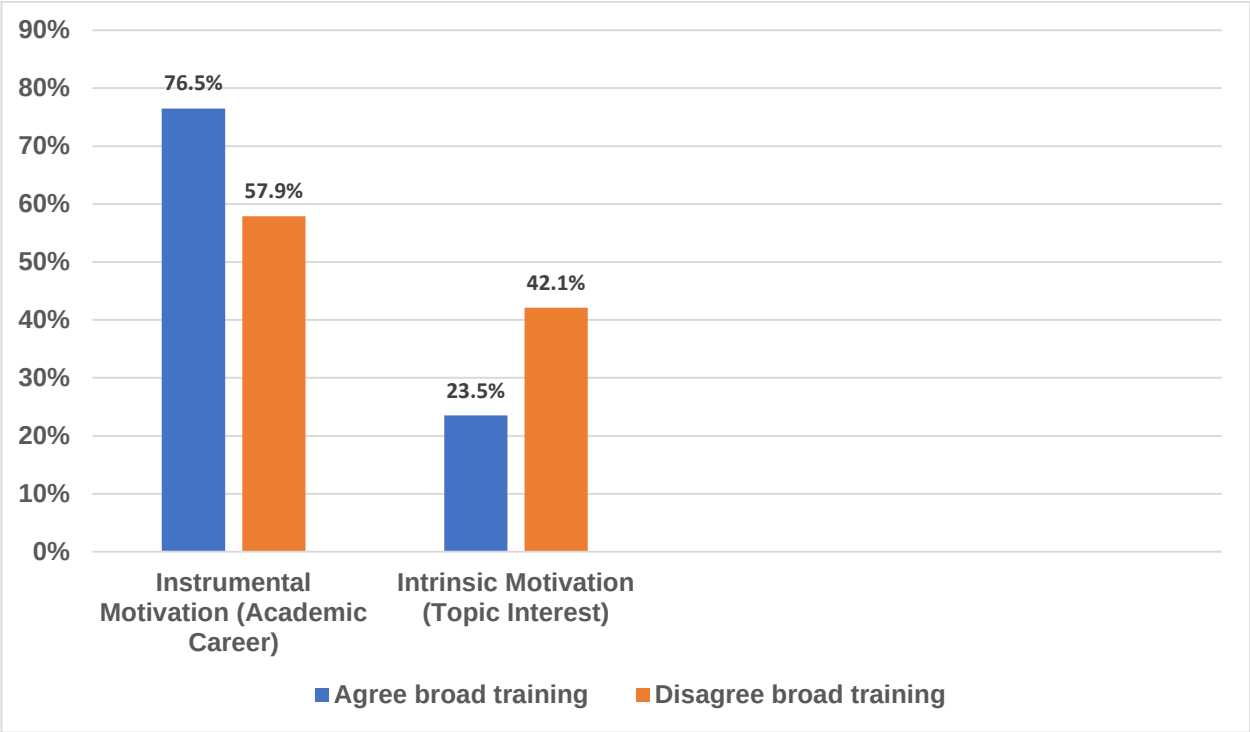
Although respondents with instrumental motivations (gaining an academic and non-academic career) were slightly more supportive of broad methods training, there was not a great deal of difference from those with intrinsic motivations ('topic interest'). Although these findings support those from other studies, such as (Orton-Johnson and Webb, 2011)), that students who are instrumentally motivated to undertake doctoral study are typically much more supportive of broad methods training, the differences in percentages were small (only 2.5% difference between those with instrumental motivations compared with intrinsic motivations).

5.11.2 Main motivation responses

Secondly, responses to the question on respondents' primary motivation for PhD study showed clearer variation than the multiple-choice responses discussed above.

Nineteen respondents chose the intrinsic motivation response, 'topic interest' and only 57.9% of these (strongly) agreed with broad methods training compared with 76.5% of the respondents (18 students) who selected the instrumental motivation, 'academic career' (Figure 18 below).

Figure 18: Whether current PhD students agree with broad methods training by instrumental or intrinsic PhD study motivation



The findings were not at all statistically significant but the variables were moderately correlated (x^2=0.49; p≤.05; V=0.32). Despite the finding not being statistically significant, the difference in percentages of instrumentally motivated versus intrinsically motivated PhD students and agreement with broad methods training is very much in line with other studies, such as Orton-Johnson and Webb (2011) and therefore indicates some confirmation for the hypothesis of doctoral study motivation having a degree of influence on levels of support for broad training. This is due to the fact that those students who wish to gain a PhD qualification in order to enter academic employment are far more likely to see the merit of having broad knowledge of the methodological spectrum for academic teaching and / or research.

Unfortunately, the number of respondents choosing a non-academic career as their primary motivator (3 respondents) was too small to enable any meaningful discussion of the results here. Similarly, the 'encouraged by supervisors' category also contained only 3 respondents and thus does not offer meaningful comparison.

5.12 PhD motivation and broad methods training view: Walking interview / video diary findings

Table 10 below sets out the 13 walking interviews' students PhD motivations by their view of methods training. Although efforts have been made to explore potential associations between these two variables, 13 is a small qualitative sample size which in turn leads to very small sub-group numbers thus this discussion may be interpreted with a degree of caution. Students consulted by this research cited both instrumental and intrinsic primary motivations, although some students expressed elements of both. A further category that emerged (which is also in line with the questionnaire data) was 'encouraged by supervisor', however, this does not provide an indication of intrinsic or instrumental motivation so does not enable clear comparison with the findings of other studies. Some students' motivation for studying for a PhD was not clearly expressed in their interview and these have been classified as 'unclear'. Views of broad methods training were characterised as: positive, negative or mixed (those containing both positive and negative reactions to the training).

Table 10: Walking interviews students PhD motivation by view of broad methods training

Overall view of broad training	Instrumental Motivation	Intrinsic Motivation	Intrinsic and instrumental Motivation	Encouraged by Supervisors Motivation	Total
Positive	2	1	1	1	**5**
Negative	1	-	-	-	**1**
Mixed	1	1	3	2	**7**
Total	**4**	**2**	**4**	**3**	**13**

An analysis of the students' motivations by their view of broad methods training in the qualitative branch of my doctoral study, does not present as clear cut a link between instrumental motivations and positive views and intrinsic motivations and negative views as was found by Orton-Johnson and Webb (2011). Regarding my study, of those 4 students with primarily instrumental motivations,

2 were positive about broad methods training, one was mixed and one was negative. Of the two students with primarily intrinsic motivations one held positive views of broad training and the other mixed. Of the 4 students with a combination of intrinsic and instrumental motivations, 3 were mixed and one positive. Of the 3 students who had been encouraged to do a PhD by their Masters degree supervisor(s), and cited this as their primary motivator, 2 were positive and one was mixed regarding broad methods training, however, this group cannot easily be classified for analysis in relation to instrumental versus intrinsic motivations.

Direct quotations from walking interviews students to illustrate instrumental, intrinsic and mixed motivations to undertake doctoral study, as well as those who were primarily encouraged by their Masters supervisor, are provided in Appendix 8.

5.12.1 PhD study motivations: comparison of quantitative and qualitative findings

When examining the quantitative and qualitative findings on doctoral study motivation and views of broad methods training together, it can be seen that some degree of higher support for broad methods training among instrumentally motivated compared with intrinsically motivated students is observable in the quantitative data (76.5% compared with 58% respectively). The qualitative findings are not conclusive on this. Among the instrumentally motivated students 2 expressed positive views of broad training, 1 mixed and 1 negative. The 2 intrinsically motivated students were split between mixed and positive views.

Although both sets of results showed higher support for broad training among instrumentally motivated postgraduate students, arguably this was stronger in the quantitative rather than the qualitative branch of the study. Regarding the quantitative data, 76.5% of instrumentally motivated students compared with 58% of intrinsically motivated students agreed with broad methods training. The qualitative findings are not as conclusive; among the 4 instrumentally motivated students, 2 expressed positive views of broad training, 1 mixed and 1 negative whilst the 2 intrinsically motivated students were split between mixed and positive views.

5.13 Factors impacting methods course views: External factors

As was described in Chapter 4 and above, the students consulted had varying views on whether methods training should be both broad and compulsory, with most being overall in favour of broad

methods training. Certain factors emerged from the research as impacts upon students' reactions to either specific methods courses, or broad methods training in general. These can be broadly categorised into 1. external factors and 2. internal factors. Relevant results on external factors such as class size and characteristics of the teaching space, teacher effects and tutorial group dynamics are presented below.

'Internal factors', for example the student's own academic background and prior experiences of studying methods, their discipline of study and their methodological identity, i.e. seeing oneself as either primarily a qualitative or quantitative researcher, again sometimes bound to disciplinary affiliation. Issues of statistics anxiety, identified in some of the literature, can also come to bear in relation to prior methods exposure and methodological identity. These will be outlined later in Chapter 6.

5.13.1 Lecture class size / teaching space characteristics

Practical issues such as the number of other students in the lecture theatre and / or the actual room that the lecture took place in, affected depth of student engagement with lecture material.

Aisha raised the point that practical issues such as a large class size affected her response to the Data Collection course as she felt relatively inconspicuous if inattentive:

"Another very determinative reason behind why I did not pay attention was because it was too big a class and I thought I could get away with it because no one would notice." (Aisha, PhD)

Sue remarked that physical attributes of the teaching space can also impact on dynamics of student engagement with lectures. Comparing the lecture theatres for the two term 1 compulsory methods courses, CQDA and Data Collection took place in large lecture theatres and the term 2 Research Design course in a smaller, less 'formal' seeming room according to Sue. She felt that the 'less formal' room led to increased disengagement and less attention being paid by students:

"Research skills, the mandatory course, and core quants in the first term we had the big lecture theatre and it felt like you had your space, you had your computer out, your notes…It felt a formal environment. [For Research Design] we were in Chrystal Macmillan Building, little chairs with the tables, it felt a lot more informal. It felt like it was acceptable to lean to your partner and whisper something and have a little laugh at the back whilst somebody was lecturing. Well I didn't, but people clearly did and it was very annoying. But it just had that air of not being as well organised,

which is unfair because it's just a room allocation but not being as formal learning I suppose as in the lecture theatre. And I think that made a difference…So I think that probably contributed to some people disengaging and there was one lecture where I totally disengaged as well." (Sue, M)

5.13.2 Course content – positive and negative views

Moreover, the course content itself and how relevant and interesting students felt this was, was also of critical important in how they responded to compulsory methods courses.

5.13.2.1 Positive views

Among the positive views expressed regarding course content were learning about: new / less standard methods; research ethics; theoretical positions / ontology and epistemology and researcher values / bias.

Aisha commented that she felt she learned about some new methods that were new to her during the 'Data Collection' course, for example, photo elicitation:

"Learning about the photo method was new to me in the Data Collection course." (Aisha, PhD)

Fiona remarked that the methods studied in the 'Data Collection' course had been usefully varied, and had covered what she felt were some less standard methods, that she had not studied previously:

"In 'Data Collection', we looked at interviews, focus groups, visual methods, documents. All of those I found particularly beneficial. The only one I had done before was interviews. We'd talked about focus groups in the past, but I'd never really being told much at all about visual methods or documents. So I think the fact that the course incorporates these, is very useful." (Fiona, M)

Fiona also found the coverage of research ethics in the 'Data Collection' course very useful:

"In the 'Data Collection' course this week we looked at ethics, which I think has been one of the most valuable modules so far because no matter which method you choose to use in your project or future work, ethics is obviously a very integral part, especially now... Also being able to do the ethics form for your project was helpful as well, for the' data collection' course that is." (Fiona, M)

Commenting on the ‘Research Design’ course, Nathan appreciated the way the course explicitly emphasised the importance of epistemology and ontology in the research design, which he had not considered previously:

“The last couple of weeks have been quite philosophical, it’s been the epistemology and the ontology, and I’ve loved all of that. And I think it’s really helped ground all of that into research design. I love the philosophy side anyway, but I’ve just never considered that it would apply. But to have it explicitly told to you, ‘yes, all of this matters in the consistency of your research design’ was just really good.” (Nathan, M)

Similarly, Andrew had particularly appreciated the first week of lectures and tutorials in ‘Research Design’, which dealt with the topic of considering a researcher’s values and potential bias in research:

“These last classes [in Research Design], I have enjoyed them. I enjoyed most the one we have this week…about values and…about embracing the biases that we may have or we may not have as researchers.” (Andrew, M)

Aisha began with a positive view of the content of the ‘Research Design’ course in her week 2 diary about the course. She perceived a particular value of it, was how it synergised with her own methodological preferences, and taught her about methods she was considering using for her doctoral research:

“Overall, I love the idea behind this course [Research Design] because it is very relevant for my training. I would most probably be doing qualitative research with focus groups and interviews as data collection methods.” (Aisha, PhD)

5.13.2.2 Negative views

However, not all of students’ views on course content were positive. Key issues identified with problems in content related to: some elements of content being better taught than others; the perception of irrelevance of some methods for some students; and some content becoming overly challenging as the course progressed.

5.13.2.2.1 Some areas of content better taught than others

Fiona commented that the CQDA course was stronger on teaching students about quantitative

data analysis than it was on teaching the difference between data types. However, it was her perception that it was quantitative data analysis which would be most required in the workplace, therefore the course had delivered on that front:

“It doesn't teach you specifically about certain types of data, it's just the pure analysis aspect, so you're coming out with a limited kind of scope. I guess that’s the sort of things that you would be doing in a job situation.” (Fiona, M)

5.13.2.2.2 Incrementally overly challenging content / insufficiently challenging content

Fiona also identified that as the content of the CQDA course progressed the level of difficulty increased. Some postgraduate students, especially those unfamiliar with quantitative methods and not wishing to use them in their research, could struggle to understand:

“And for ‘Data Analysis’ [CQDA] this week, the topic was causality. I think, this is when it starts to get into the stage where maybe people who aren’t considering using quantitative research methods might begin to feel a bit overwhelmed. The maths element does increase quite a bit. Nothing to do with the teaching, the teaching was great…If people know from the start that they don’t want to do quantitative maybe it’s a bit too advanced for them.” (Fiona, M)

By contrast sometimes students felt the content was far too unchallenging, as Bella highlights here when she describes the ‘Data Collection’ course content as being beneficial yet overly simplistic for postgraduate-level students. Bella’s view of finding the broad content too simplistic is particularly interesting as it resonates with expert 3’s perspective that if the curriculum developers ‘try to do too much, it just skates over the surface. So there’s a balance to be struck.” Thus, a concern voiced by an expert academic was confirmed by a student participant in my research:

“Well I think that [the ‘Data Collection’ course] was more useful, and I definitely found the examples of people’s research very helpful. I just felt they almost made it a little bit too simple. I feel if you’re doing a PhD you should have a certain amount of intelligence, so I felt like they dumbed it down quite a lot. Again you can understand why people [course developers] do that if someone’s not done any research before. It’s a hard balance. I feel at a Masters or PhD level, making it a little bit harder is better rather than making it too simple as you want to push people. So I don’t know

exactly how they could have improved it, but that would be my main comment, I didn't feel like I was really challenged." (Bella, PhD)

Views on the difficulty of otherwise of course content described above clearly link to students' prior methodological backgrounds and also points raised about the combining of Masters and PhD students in the same classes, elucidated elsewhere in this chapter.

5.13.2.3 Teacher effects: Positive lecturer characteristics

The perceived quality of the lecturers for the courses and the workshop / tutorial groups' tutors, also had an impact on students' responses to the content.

Where lecturers were perceived as being of high quality, for example: good communicators, engaging, being interesting and using an accessible teaching style which grounded the content in concrete examples, this meant that students understood the material better and either enjoyed the whole course more or specific lectures (e.g. in cases where various lecturers delivered the course).

5.13.2.3.1 Clarity of explanation

Many students commented on the importance of lecturers who explained material clearly and the pedagogical principles they used to achieve this. Fiona elucidated that she did not have strong maths skills or much prior expertise in statistics but felt that the teaching staff explained the statistical methods clearly. Clarity of explanation was enhanced by weekly, practical learning tasks and tests:

"I've found [CQDA] quite useful because I didn't have much experience with statistics coming in, and as somebody who's not really the best at maths I found the course really helpful. It's explained in a really useful, you get a hands-on practice each week doing the SPSS software. Weekly tests on the theoretical aspect, I found really helpful for the exam. I think the way it's taught, especially is pretty effective." (Fiona, M)

Nathan felt that the lectures and readings for the 'Data Collection' course were very useful:

" 'Data collection', about its content. I think the lectures are very good and the readings are very good…All the methods that I am learning are very interesting." (Nathan, M)

Aaron viewed the CQDA course, as being more clearly explained that previous statistics courses he had taken:

“When I took the quants course here, I just audited it I was free of any pressure. I thought this was one of the best courses I’ve ever had….I had [studied] all these things before, so I could benefit with what I’ve heard before, but the way he taught it, way easier to understand for me. It was super clear, it made sense.” (Aaron, PhD)

5.13.2.3.2 Being interesting and engaging

Lecturers who brought material to life and were ‘engaging’ was an important aspect for many students. For example, Aisha remarked that a particular pair of lecturers on the ‘Research Design’ course were very interesting and were able to teach in such a way that students who were new to the material, could also understand:

“About the lecture, I think it was a pretty good effort by both the lecturers and they are very interesting to listen to, especially [name of lecturer]. The slides and their content were presented in a way that a beginner too would understand and not just a pro sociologist.” (Aisha, PhD)

Other brief remarks about lecturers being ‘engaging’ included:

“I enjoyed the lecturer, she was incredibly engaging.” (Sue, M)

“I thought the lecture itself was very, very engaging. So, she made what could be quite a dull kind of topic, really interesting and exciting.” (Sasha, PhD)

Sasha went on to explain how the particular lecturer achieved making the content interesting, even when it could potentially have been rather dry for some students. This was achieved by unpacking theory and relating it back to concrete examples:

“The way she did that was explaining all the theory behind theory, and then applying it and saying this is how this person has done it, to make it more alive. And I think you really need such an engaging lecturer to make a subject like that continue to be interesting.” (Sasha, PhD)

Similarly, Sue described how a lecturer was engaging and achieved this by signalling to students what was important for them to know now in her lecture content, and what could be more significant for later on in their postgraduate research or research careers:

“It was such a good lecture. I think [name of lecturer] is very engaging anyway and clearly knows her stuff. But I think what was really good about it was the fact that it was useful beyond the course. It was all about interdisciplinarity. [Name of lecturer] did a great job of explaining what was relevant

right now for research design and this ‘Research Design’ course. And here’s other stuff that’s maybe relevant going forward and here are the resources to check out more about it.” (Sue, M)

5.13.2.3.3 Using concrete examples / discussing own research

A key pedagogical technique that several students remarked upon was grounding a topic in the lecturer’s own research. Aisha noted that a lecture especially captured her when the lecturer did this in order to illuminate that week’s topic, which was understanding the impact of a researcher’s values and theoretical position on the research:

“This week’s lecture was a lot less intimidating than the previous ones. It was delivered by [name of lecturer] and was on values and positions in research…The most interesting part of the lecture for me was when the lecturer gave examples from her own research and the video she showed really made me understand why, and how, the positions and values of the researcher affect the research. Because the video was emotional and interesting at the same time and the lecturer had actually lived it, so it made it easier to relate to.” (Aisha, PhD)

Although Nathan thought that the CQDA was good overall, he felt that it could be improved by having PhD students speak about their doctoral research using quantitative methods, as was the case with the ‘Data Collection’ course that he had studied. Nathan was of the opinion that this would help ground the statistical analysis in some real-world application via relevant research studies:

“I think that the tutorials are good but that I consider that also, as in ‘Data Collection’, in ‘Core Quantitative Data Analysis’ we could have some experiences of PhD students or other lecturers about their own research with quantitative analysis, because it's not that simple as it seems only doing the statistics. It also has lots of meaningful theory.” (Nathan, M)

5.13.2.4 Teacher effects: Negative lecturer characteristics

By contrast, not all lecturers were successful in delivering engaging lectures and this was also an important issue identified by the students consulted. When the lecturer was perceived not to be interesting and / or had a delivery style that was unengaging for the student, students rapidly lost interest in the topic and became frustrated. Some cited a feeling of wasting time and losing ‘an hour of their life’.

Students identified negative issues among poor lecturers such as: being 'boring', poor use of graphical images /illustrations (e.g. complex graphs), not explaining things clearly / being overly complex, being incoherent / 'rambling', nerves, speaking in a monotone. Moreover, in direct contrast to good lecturers who were identified as supplementing their lecture content on methodology with real examples from their own research, poor lecturers failed to do this.

5.13.2.4.1 Poor explanation / being overly complex

Aisha outlined how a few of the 'Research Design' course lecturers had used overly complex graphs and examples that were not clear and simple enough to be readily grasped:

"This week was multilevel modelling. the graphs used by the lecturer were very complex and he wasn't a very good speaker." (Aisha, PhD)

Toni also identified a lack of clarity on the part of a lecturer:

"It was the worst lecture I have ever been to. It was rambling, it was not coherent." (Toni, PhD)

5.13.2.4.2 Unengaging presentation style

Various presentation style issues on the part of lecturers were identified by students including: speaking in a monotonous voice, being nervous or embarrassed and being 'boring'.

In particular, Aisha felt the lecturers on the Data Collection course were of poor quality:

"Data Collection' the previous term … was not compulsory for me either. I did not enjoy it at all. I found the lectures boring and lacklustre, the course had very poor lecturers." (Aisha, PhD)

When a lecturer was nervous about delivering the lecture, this was also highly problematic in terms of engaging the students, who in turn felt very uncomfortable:

"Just terrible, really bad. Obviously really anxious about the task of lecturing. You know sometimes you're watching someone and you can tell that they are embarrassed, and we were embarrassed for them. It was just awkward, it was horrible. I only stayed for half of it, as usual." (Toni, PhD)

Andrew observed that in a case where the lecturer spoke in a monotonous voice, this failed to engage his attention in the material:

I mean the voice of the lecturer was just plain. I mean maybe the topic was interesting but the way he presented it didn't catch the attention...I lost one hour of my life. I really think the organiser of the course should select the lecturers of the course more carefully." (Andrew, M)

5.13.2.5 Quality of tutor

Similarly, to the importance of the lecturer in helping students to derive increased benefit from their classes, the role and quality of the course tutors was cited as being of critical importance by the students consulted. Many emphasised the importance of the ability and behaviours of the tutor in enhancing, or detracting from, their experience of a particular mandatory methods course.

5.13.2.5.1 Positive tutor characteristics

Positive attributes and behaviours in course tutors identified included: enthusiasm, flexibility, friendliness, engaging with the students without a sense of superiority and being a fellow doctoral student although with more experience.

Aisha found the Data Collection tutorials very helpful:

"I found the Data Collection course tutorials very useful and enjoyable although not the lectures. I learned a lot during the tutorials." (Aisha, PhD)

For example, Sasha commented that a great strength of the 'Research Design' course tutorials was having a tutor who was also a doctoral student but further on in their PhD. Such tutors had already worked through their own doctoral research project, considering the various research design issues in practice. Sasha found this of greater value, than merely hearing about research design problems in the abstract:

"Because you can think about or you can be told about all these different research projects, and this is the kind of things that you would reflect on. But to hear it first hand, from someone who is pretty much in the same position as we are, I think that's a really valuable thing." (Sasha, PhD)

Other students consulted emphasised the importance of the behaviours and personality type of course tutors, with qualities such as humility, friendliness and enthusiasm being mentioned:

"The tutor was very knowledgeable and very humble, there was no sense of them feeling superior." (Aisha, PhD)

Similarly, Sue remarked upon the enthusiasm of her tutor on 'Research Design' and how they were able to effectively engage the students during classes, noting a marked contrast with a previous tutor not possessing this level of skill:

"[The Research Design course tutorials]. I'm easy to please, but [name of tutor] was fantastic. Great tutor, really engaging tutor helped a lot. I had a less inspiring or less engaging tutor for 'Data Collection' last semester, and the problem-based learning, they really, really dragged. So I think that probably is a point of comparison and [demonstrates] the need for an engaging, enthusiastic tutors." (Sue, M)

Another positive attribute of tutors that influenced students' views on a course, was the ability to be flexible. Sasha commented that identifying students' learning needs in the tutorial group, and responding to these flexibly by amending some of the tutorial tasks when these were not working successfully, was a positive skill used by her 'Research Design' course tutor:

5.13.2.5.2 Negative tutor characteristics

On the other hand, views of course tutors were not uniformly positive. More negative views of tutors, especially in relation to the 'CQDA course, were expressed by some of the students consulted, perhaps indicating the particular challenge of, and skill required, in teaching quantitative methods to novices:

Bella observed that adequate explanation of the statistical analyses that students were to conduct during the computing lab seminars, was lacking in CQDA:

"They tell you that you have to go to the seminars that's the most important thing, but I didn't find the seminars helpful at all, when you sit in the computer lab… I went to two, and then never went again…I didn't feel like anything was explained. I don't think the tutor really knew how to explain, or what to explain." (Bella, PhD)

Similarly, Leah identified that her CQDA tutor severely underestimated the level of statistical knowledge among the students and student heterogeneity, and how to therefore approach teaching them effectively, despite likely having personal strong statistical skills:

"I'm sure they were really good at what they did. I think a challenge for every tutor is trying to realise the depth of knowledge that your student is starting at. I think that, because there was a whole bunch of different students there, maybe he overestimated just what a low level most of the

anthropologists were starting out at…*What he might have considered basic knowledge was brand new news for the anthro students*. So I think it was like learning a card game when no-one ever told you the rules, and you didn't even know what the cards were saying." (Leah, PhD)

5.13.3 Tutorial group tasks / content

In addition to the personal qualities and abilities of the course tutors running the workshops / tutorials, the actual content of the session and the tasks that the students were required to do, was also important in terms of their perception of how effective the tutorials were. Where preparation was time-consuming and felt irrelevant to their own research, students became irritated.

Lacking a sociological background, Aisha commenced the first week of 'Research Design' feeling rather overwhelmed by some of the content as what she saw as a rather challenging video of a discussion between Chomsky and Foucault was played at the end of the 1st lecture and subsequently discussed at the tutorial. Aisha, however, acknowledged potentially a technique had been used to discombobulate students without context so they were compelled to seek to make sense of this, lacking information:

"The video which was played at the end of the lecture was a debate between Chomsky and Foucault was very hard to follow, because it was just too philosophical and also because I was not prepared for it. I honestly did not know who Foucault was for the first few minutes. I had absolutely no idea what the context of the debate was, but I think that was the idea behind it, to make us think on our toes as to what the video was about. In the tutorial held right after the lecture we were asked, 'what were the two of them talking about? If you had to give a heading to the debate, what would you say?' And that made me realize that it was not me being uninformed, it was probably the idea." (Aisha, PhD)

At times the tutorial group tasks and content felt disjointed to some students, with an over-focus on discussing their own academic research projects in favour of covering set research methods and design topics. Sasha commented that the 'Research Design' tutorials sometimes felt like a 'group therapy' session, where postgraduate students supported each other:

“The workshop, it felt a bit more like a therapy session than anything else because we were kind of reflecting on our own research. Reflecting on how we’re going to incorporate theory, our own ontological and epistemological views.” (Sasha, PhD)

Overly onerous tutorial group tasks that required an intensive amount of advance preparation were also cited as a problem by several participants. Sue, for example, tussled with the issue of the problem-based learning exercises for her ‘Research Design’ tutorials at times not being relevant to either her topic or the methods she wanted to use / learn about, which were only useful to a point and beyond that felt like squandered effort:

“Because not everything about the problem-based learnings were relevant to me, certainly not in [terms of] the topics. There’s a point you go [to] with them where they’re useful and relevant, and then the extra effort you’re putting in to do something, almost feels wasted because it’s not something that is relevant to your particular topic of study or research design set of skills you need…I understand why it can’t be personalised but if there’s any way to maybe take the pressure off the amount of prep you have to do for them…and somehow channel that to something maybe more relevance to your individual interests.” (Sue, M)

It should be noted that the view expressed above is demonstrating the more ‘narrow’ view of research methods training that things which are learned should be directly useful to the student’s Masters or PhD rather, as opposed to the more general perspective of the importance of being trained as a social scientist. However, that is not to say that the student, Sue, did not appreciate the importance of general training across a methodological spectrum; Sue does display a cognisance of this elsewhere in her quotations. It is likely that Sue’s view here was connected with acutely perceiving the challenge of ‘being pulled away from’ your own work (in the PhD or Masters) to study something that appears unconnected with your personal interests and the tensions and trade-off decisions faced by students discussed in chapter 6. This can be perceived as more problematic by students when considered in relation to the circumstances students are in with a long list of competencies and requirements within their doctorates and relatively limited time within which to achieve these.

Similarly, the following two quotations from Toni (in weeks 3 and 4 of her video diaries respectively) reveal a mounting frustration with the amount of groupwork she had to undertake to prepare for tutorials, the amount of effort perceived as incongruent with the reward especially when not assessed:

“But the tutorial again I found a bit of a drag. It was a group presentation this week and our group arranged to meet an hour before class, most of my group were late and half seemed to have misunderstood the task in some way. So I maybe I’m just the psycho who likes to be prepared but I was discouraged by the lack of preparation that my fellow students had done. And again *I just feel like I’m giving a lot in these tutorials and not getting a lot out*.” (Video diary – week 3)

“There’s more groupwork assigned for this week, another group presentation to put together around the issues of replicating an ethnographic study. That’s not very relevant for my work and I’m not thrilled about having to complete more group work that isn’t assessed. It takes quite a bit of time and I’m usually the psycho who’s very well prepared and gets easily frustrated.” (Video diary – week 4) (Toni, PhD)

5.13.4 Tutorial group dynamics

As well as aspects of tutor and lecturer quality, how well the students in the tutorial group gelled together and participated during sessions, also affected students’ perceptions of their methods courses.

5.13.4.1 Positive

Particular positive aspects in relation to tutorial group dynamics included: whether a respondent liked their fellow tutorial group members; how well the group interacted; peer learning and a high level of participation from other students.

5.13.4.1.1 Personal group factors

Some students commented on personally liking some of the other students in their tutorial group and feeling that there was a camaraderie between them, as the quotation below demonstrates:

“The rest of the group was nice too and it felt like everyone was equal.” (Aisha, PhD)

5.13.4.1.2 Peer learning and networking

Another important positive aspect of tutorial group synergy was learning from each other and forming postgraduate networks, which was particularly noted by Sue in several of her video diaries:

“Getting to work in groups, getting to learn from other people I did think there was quite a lot of value in that.” (Sue, M)

“It was good to build up a little community over a cross-section of degrees.” (Sue, M)

5.13.4.1.3 Tutorial group participation

The extent to which a student perceived whether other students in their tutorial group participated was also significant in affecting their overall view of their tutorial group. Both positive and negative views were highlighted by students on this. Below Toni, indicates her approval of her some of her fellow students’ participation. More typically, however, she felt that the rest of her group did not engage sufficiently (as can be seen in later quotations from her on this, in the sections that follow).

“I was really impressed by a couple of taught Masters students in my tutorial, who really got amongst the activities and contributed quite a lot.” (Toni, PhD)

5.13.4.2 Negative

By contrast to positive factors highlighted by the students consulted, negative aspects relating to their fellow tutorial group members were also identified. These included: overly dominant students in the group and a low level of participation from others.

5.13.4.2.1 Dominant students

“The tutorials are sometimes dominated by others who have a background in sociology and the discussion gets too thick for me to understand. I have found that mostly it is the same 3 or 4 people who talk and the rest of us just listen.” (Aisha, PhD)

5.13.4.2.2 Lack of participation

Toni highlighted a great deal of frustration and disappointment that she felt being in a tutorial group where the other students only participated to a limited degree. It was Toni’s perception that she was speaking and participating most. This was something that she had not expected, being from a statistics background and having no familiarity with social science qualitative methodologies:

“I found the lack of enthusiasm from other PhD students in tutorials disappointing. Often I was the one doing the most talking, which I found odd as I felt that I had little background in social science.” (Toni, PhD)

Toni reflected on the possible reasons underlying some of her fellow tutorial group's lack of participation. She surmised that shyness, laziness and an unwillingness to explore what seemed like irrelevant methods to their own academic research may have been among the causes for a lack of engagement with tutorial activities:

"I think it was maybe partly because of shyness and partly that some people couldn't really be bothered putting in the effort to get as much out of the course as possible…I feel this [limited tutorial participation from many students] is because the other PhD students were unwilling to explore approaches which were outside of their own specific projects." (Toni, PhD)

5.14 External factors impacting methods course views: video diary and walking interview findings summary

As described above, video diary and walking interview student participants identified a range of external factors and it was clear that these influenced their views of methods training. Some physical issues were highlighted such as the size of the teaching space, larger lecture theatres were perceived as more 'formal' by some and larger classes lead to increased disengagement, as inattention was felt to be less apparent.

Actual course content was also significant in framing responses and both positive and negative views were expressed about this in relation to specific methods courses. Positive views of useful course content included: learning about new / less standard methods such as photo elicitation; research ethics; theoretical positions / ontology and epistemology and researcher values / bias. Negative views of content included: that some areas of content were more effectively taught than others and that content was both incrementally overly challenging for some and excessively basic for others. Quotations from students demonstrated that some of the more complex parts in CQDA course could be too challenging for people who are not using quantitative methods and that the 'Data Collection' course was too simple and not challenging enough for some.

Teacher effects, specifically the quality of lecturers and tutors were also framed as highly important. Positive lecturer characteristics included those who provided: clear explanations; hands-on practice of particular aspects of methods; useful readings and complementary online course materials; were interesting and engaging and used concrete examples or described some of their own research in their teaching. The use of videos to illustrate points was also identified as helpful.

Negative lecturer characteristics were often the reverse of positive ones and include those who: offered poor explanation; taught content in an overly complex way; made poor use of graphical images /illustrations (e.g. complex graphs); had an unengaging presentation style for example, being incoherent / 'rambling', exhibiting nerves, speaking in a monotone, being 'boring'. Moreover, in direct contrast to good lecturers who were identified as supplementing their lecture content on methodology with real examples from their own research, poor lecturers failed to do this, and student understanding suffered as a result.

Similarly to the quality of the lecturers, the quality of the tutors was also extremely important in contributing to students' views of the methods course. A range of positive tutor characteristics were categorised such as: enthusiasm, flexibility, friendliness, engaging with the students without a sense of superiority and being a fellow doctoral student although with more experience. Negative tutor characteristics included: poor quality explanation especially in relation to learning statistics (CQDA) and an inability to accurately assess low level of statistical knowledge among students and the support and teaching required to really teach them effectively.

Finally, the effects of the tutorial tasks and tutorial group participants were also critical to perception formation. Negative aspects identified were: an over-focus on discussing students' own research at expense of actual methods teaching, one said this felt like 'group therapy' session; beginning with overly complex material such as a video contrasting Chomsky and Foucault and also some tutorial groups tasks were rather intensive requiring out-of-class preparation and mini presentations weekly from students whereas other groups did not do this. The actual dynamics of the tutorial group participants was also discussed. Positive tutorial group factors included: personal group factors, students getting on well; peer learning from discussing each other's research and hearing other PhD students' research presentations (in the Research Design Course) and high levels of tutorial group participation from other students. Negative tutorial group factors included both overly dominant and the reverse, non-contributing other students. Some respondents became quickly disillusioned if they felt that they were the primary contributors in the group whilst other students remained silent and did not engage. Frustration also mounted if there was a lack of contribution to pre-prepared group tasks for tutorials by fellow students.

5.15 Chapter summary and conclusion

5.15.1 Compulsory methods training: questionnaire data

Quantitative methods: Most students responding to the questionnaire felt that quantitative methods training should be compulsory (73% agreed). Gender revealed the biggest differences in views on this, which were statistically significant at the 10% level (chi square p value 0.055), with more females disagreeing than males, four-tenths (41%) of females compared with just under a fifth (19.2%) of males disagreed. Other key independent variables (age groups, year of study and PhD research methods) did not show much variation.

Qualitative methods: Regarding compulsory qualitative training, slightly stronger support existed than for quantitative; more than three-quarters (78.3%) agreed with compulsory qualitative methods training. Again, the most important variation was in gender, more than twice the percentage of females than males disagreed (35% of females disagreed compared with 16.3% of males). Results were statistically significant at the 10% level (chi square p value 0.088) and weakly associated (Cramer's V 0.2121). No clear pattern for age emerged with peaks and troughs occurring across the age ranges. There was a clear trajectory of declining support for compulsory qualitative training as students progressed through their PhD. Strongest disagreement with compulsory qualitative methods rather surprisingly manifested among students who were using mainly qualitative methods in their own PhD.

Summary: Only gender and views of compulsory training were statistically significant at the 10% level (for both quantitative and qualitative training) and there were no statistically significant relationships between any of the other independent variables and support for compulsory quantitative / qualitative training. Females in the questionnaire sample were generally less likely to agree with any compulsory methods training (either quantitative or qualitative) than males However, crucially the type of methods training appeared largely unimportant, its compulsory nature was what females appeared to be opposed to. This suggests that females tend to be uncomfortable with prescriptive elements within postgraduate methods training believing instead that students should have the freedom to choose their methodological studies. A fuller discussion reflecting on the possible effects of gender and interactions with other variables such as study status and age on attitudes towards formalised methods training is presented in section 6.6.3.1 in Chapter 6 of this thesis.

5.15.2 Compulsory methods training: qualitative data

Conversely, the qualitative part of the research revealed that the majority disagreed with compulsory broad methods training for PhD students; only 4 out of 21 students and 1 of the 4 experts felt to some degree that broad training should be compulsory for all. The remaining 3 experts argued that broad methods training should not be compulsory for PhD students but that it should be mandatory at Masters degree level. Among reasons given why methods training should not be compulsory were that: students felt studying what they perceived as 'irrelevant' methods was inappropriate as doctoral students have enough academic maturity to decide upon their methods of study. Issues of time constraints; tensions and trade-offs between elements of what needed to be accomplished within a relatively short 3-4 year PhD degree programme and the stress of trying to understand methods which are not perceived as a good fit for the student / not within their area of interests).

Clearly higher degrees of support for compulsory broad methods training exists among the students responding to the questionnaires (approximately three-quarters agreed with this), than those participating via the qualitative methods the majority of whom were not supportive (only 4 out of 21 agreed).

5.15.3 Views of specific broad methods courses becoming increasingly negative

Some evidence emerged from the students' video diaries of an increasing disengagement with the compulsory course 'Research Design'. Three participants expressed views indicating that the lectures and / or tutorials felt increasingly irrelevant and of diminishing usefulness to them and 2 would have ceased attending if not for the fact they were completing video diaries for this research study.

5.15.4 Motivations for PhD study and broad training views: quantitative and qualitative data

Regarding motivations for PhD study and questionnaire data, the key driver was 'interest in the topic', an intrinsic motivation chosen by nearly four-tenths, 38.5% (30 respondents out of 78). Just under a quarter were motivated by the instrumental motivation of improving their prospects for an academic career. 57.9% of those with 'topic interest' motivation (strongly) agreed with broad methods training compared with 76.5% (strongly) agreeing with broad training whose motivation

was an ‘academic career’, clearly demonstrating increased support for broad methods training among instrumentally motivated doctoral students. This accords with findings from other studies, such as Orton-Johnson and Webb (2011).

Turning to PhD study motivations and qualitative data, the 13 current student interviews (11 walking interview participants plus the 2 pilot interviewees) revealed slightly stronger support for broad training among students who studied for a PhD to gain the necessary qualification for later employment, than for intrinsic motivations, yet differences were not stark.

Comparing quantitative and qualitative results on PhD motivations and broad training views, although both sets of results showed increased support for broad training among instrumentally motivated postgraduate students, arguably this was stronger in the quantitative rather than the qualitative branch of the study. Regarding the quantitative data, 76.5% of instrumentally motivated students compared with 58% of intrinsically motivated students agreed with broad methods training. The qualitative findings are not as conclusive; among the 4 instrumentally motivated students, 2 expressed positive views of broad training, 1 mixed and 1 negative whilst the 2 intrinsically motivated students were split between mixed and positive views.

5.15.5 External factors affecting views of methods courses

As well as motivations for PhD study and career aspirations, a range of other factors both external and internal can impact postgraduate students’ perspectives on particular broad methods courses. A range of external factors were identified from comments in the qualitative data including: the nature of the physical teaching space; course content; lecturer / tutor quality effects and tutorial group dynamics. Of particular importance in framing views of specific courses was teaching quality, both tutors and lecturers. When lecturers exhibited positive qualities such as providing clear explanations, being interesting and engaging in terms of their presentation style and using real-world examples from research including their own (and sometimes videos), to illustrate points, students tended to have far more favourable views of a course.

Enthusiastic, warm and engaging tutors were also very important in developing positive views of a course, whereas tutors who did not accurately assess students’ starting levels of knowledge and effectively teach and support them (especially in relation to quantitative methods and statistics) quickly frustrated and upset students.

It is worth noting, as was stated earlier in this chapter for example by Sasha who was commenting on the 'Data Collection' and 'Research Design' courses, that some students commented that having a tutor who was a PhD student further on in their studies and had already experienced similar things to the on-course students current or forthcoming experiences can be extremely useful. The 'distance' between the teacher and those taught can influence how students experience a course. People further on in their careers may be too temporally distant from students, and also perceived as too senior, for the connection to be as strong or as relevant as that between a learning student and a teaching student. Arguably the teaching student and the learning student share more common experiences, yet the teaching student has the advantage of having already encountered particular challenges and obstacles during their doctorate and identified solutions which they can then pass on. This can be extremely reassuring and helpful for earlier year Masters and PhD students. However, tutors being PhD students did not work well in all cases. For example, regarding quantitative methods courses with statistics involved Leah found that her CQDA tutor severely underestimated the level of statistical knowledge among the students, and how therefore to approach teaching them effectively. Perhaps this is due to inadequate training of how to teach statistics to students, which has been widely recognised as a difficult thing to do well. This may indicate a need for further training for students who are going to teach statistics in potentially successful pedagogical approaches for this particular set of methods.

Finally, tutorial group dynamics with fellow students, such as whether they participated and engaged effectively, and whether the amount of effort required for tutorial tasks roughly equated to their perceived benefit and relevance were also influential factors. These factors (teaching effects and tutorial tasks and dynamics) were arguably even more important than the course content itself in affecting how students viewed a particular methods course.

Internal, or within-person, effects (including disciplinary and methodological identities, students' prior experiences of methods training and their abilities, attitudes and anxieties regarding particular methods) can all also affect methods training perceptions' and were discussed in chapter 4.

Chapter 6, the 3rd results chapter which follows, will pose the questions of whether studying broad methods courses compromises the amount of time available for advanced and subject-specific methods study and the issue of time pressures and expectations; is too much now expected of doctoral students now within a 3-4-year PhD degree? Discussion of this will be linked with the 'infinite shopping list' theme. Additionally, problems with the relatively untailored approach to

postgraduate methods training drawing on the ‘one size fits some but not all’ theme will also be elucidated. Issues with the untailored approach are firstly, the inappropriate timing of some broad courses and particular content within the courses and secondly, a lack of sufficient course information to enable students to make truly informed choices about which methods courses to take. Finally, participants’ suggestions on how broad training delivery and content could be improved will be described.

6 Chapter 6 Results: Advanced methods training, internal factors impacting on methods course experiences, problems with methods courses and suggestions for improvements

"In designing Masters programmes in social research, you've got the constant problem of trying to get quarts into pint pots." (Expert 3)

6.1 Introduction

The quotation from one of my expert research participants above illustrates the challenges in designing postgraduate degree programmes with all that ideally should be included within these.

In addition to the core or broad methods training discussed in results chapters 1 and 2, the ESRC postgraduate training and development guidelines (2005; 2009 and 2015) state that postgraduate social science students should also undertake 'advanced' training for their subject area and discipline. The 2015 ESRC guidelines stipulate that institutions' 'training pathways' must show 'how individual students will progress to develop advanced skills in the later years of their doctorate' (p 10) and that a learning outcome of the PhD is 'the development of advanced research skills and techniques relevant to their field of study (p. 8).

In terms of what the ESRC envisages advanced training comprises they explain that this will vary by subject and discipline, that is what is considered advanced in one discipline may be viewed as comparatively basic in another:

> Some advanced training will be discipline or subject specific (e.g. specialist training in econometric modelling), whilst other training may have a wider application (e.g. statistical analysis techniques). What constitutes advanced training will differ between discipline areas. A method or theory considered to be advanced in one area of social science, may be deemed to be core to another. For example, game theory would form part of the core training in Economics but might be considered advanced training for a social scientist working in another area. (ESRC, 2009, p. 13).

The ESRC emphasise that ESRC funded students should be monitored by institutions to ensure that they are undertaking an appropriate set of broad and advanced methods training by means of

a ‘training needs analysis’ (TNA) and that this should be ongoing and not a one-off analysis of training needs:

> As a minimum requirement, a rigorous training needs analysis (TNA) must be undertaken for all ESRC-funded students that will ensure they develop a progressive training agenda over the lifetime of their programme that addresses both the depth and the breadth of the training received (ESRC, 2015, p. 23)

This chapter analyses and reports on the results from the quantitative and qualitative research with current social science postgraduate students and the experts relating to the theme of participants’ views of, and reactions to advanced methods training and whether having to study broad methods sacrifices the available time for specialist training. Issues of the available timeframe of 3-4 years for the current doctorate, in tandem with the expectation and requirements of what is to be achieved, are considered.

The chapter also reflects upon the ways in which current postgraduate methods training at universities may not be working successfully. Firstly, the variation between postgraduate students as they are not a homogeneous group (Collinson and Hockey, 1997) is considered and the influence of ‘internal’ or within-person factors on postgraduate students’ learning experiences. For example, internal factors such as students’ previous levels of methods training and their experiences of this can shape their postgraduate methods learning experience. Prior expertise in quantitative methods, or lack of, can be especially important. Other internal factors such as statistics ability and statistics anxiety are also considered and how these affect students’ learning in relation to quantitative methods. Comparisons are made where appropriate between the findings in this PhD study and relevant results from other studies in the literature, for example Williams, Payne and Sloan’s (2016a) quantitative studies of sociology and social science undergraduates’ views of quantitative methods courses and statistics.

Differential conceptual framings of methods and also disciplines, academic tribalism and how these interplay with students’ disciplinary and methodological identities are also deliberated. Such perspectives can also influence how students respond to and engage with research methods training. The effect of personal characteristics such as a student’s status i.e. studying full-time or part-time or being an international or domestic student, as well as their gender, on views of broad methods training is also examined and discussed in relation to hypotheses drawn from the literature.

Challenges to the ‘one size fits all’ approach to methods training are outlined. Issues of the standardised training programme potentially suppressing individuality and innovation; the inappropriate timing of some methods courses within doctoral students’ overall programme of study and lack of sufficient information about course options, which were compulsory and the content of these to enable students’ informed choices about their studies, are also discussed. Findings suggesting that combining Masters and PhD students to study broad courses together is unsuitable due to differing needs and the lack of differentiation of the learning needs of students who are ‘consumers’ as opposed to producers of particular research methods are debated.

In order to mitigate these problems suggestions from participants, both students and experts, on how to improve broad training delivery and content are described. Suggestions include, for example, learning about methods through applying them in a practical sense and embedding methods courses within substantive topic and theory courses so that research methods are more explicitly contextualised within the overall research process and to students’ subjects and disciplinary fields as opposed to appearing disconnected and isolated. The chapter concludes by considering ways students can learn about research methods other than university term-long postgraduate courses, such as using online resources and reading books / journal articles, and discussing the relative merits and usefulness of each of these before closing with an outline of the final results chapter.

6.2 Advanced / specialised methods training

My research explored 2 key parts to this within the quantitative branch of my study: 1. whether PhD students should learn advanced methods and 2. whether having to spend time learning broad research methods sacrifices the time available for undertaking advanced training during the doctorate.

6.2.1 Whether PhD students should learn advanced methods

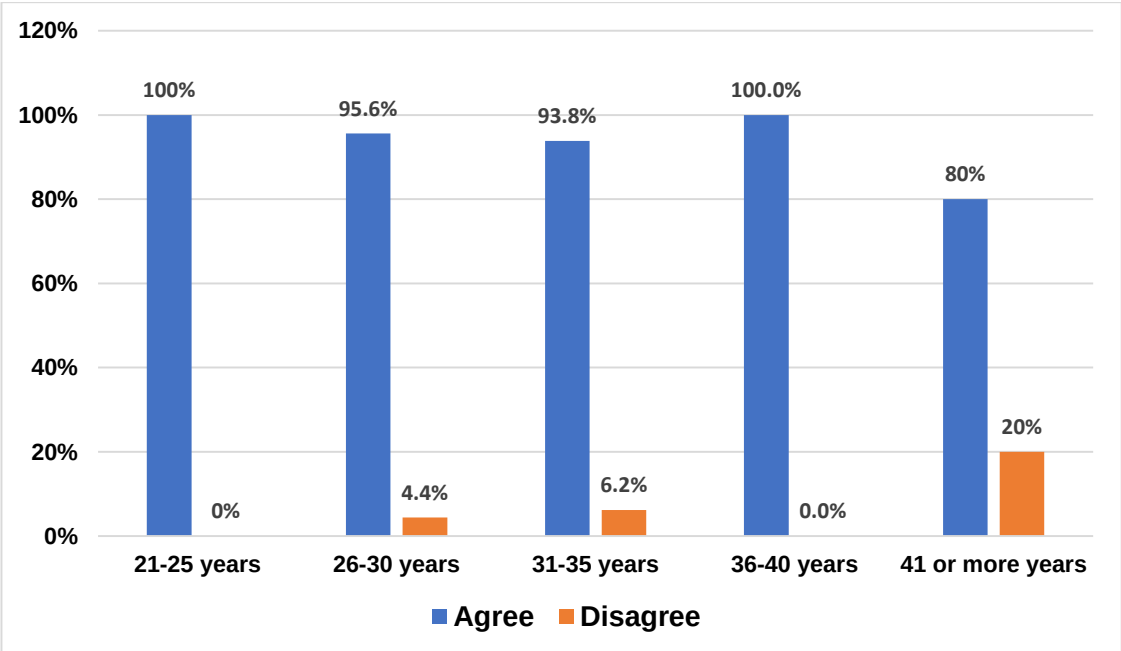
6.2.1.1 Questionnaire findings: Current PhD students

The overwhelming majority of current students responding to the questionnaire thought that in principle doctoral students should undertake advanced methods training, 94.4% agreed and only 5.6% disagreed.

Gender: There was virtually no difference between the genders on whether advanced training should be done. Females were slightly more likely than males to agree that advanced methods training should be carried out, 95% of females agreed compared with 93.4% of males, however, the difference is clearly negligible. Gender and views on available time for advanced methods training were very weakly associated (x^2=0.85; p≤.05; V=0.02).

Age: As shown in Figure 19 below, agreement with learning advanced methods during the doctorate showed a fairly U-shaped curve pattern, beginning high at 100% agreement in the youngest age group, dipping to at 93.8% at age 31-35 then increasing again to 100% with the older age groups (except for age 41 and above where it dipped again to 80% agreeing). Age and advanced methods training are weakly (although approaching moderately) associated (and not statistically significant (x^2=0.26; p≤.05; V=0.27).

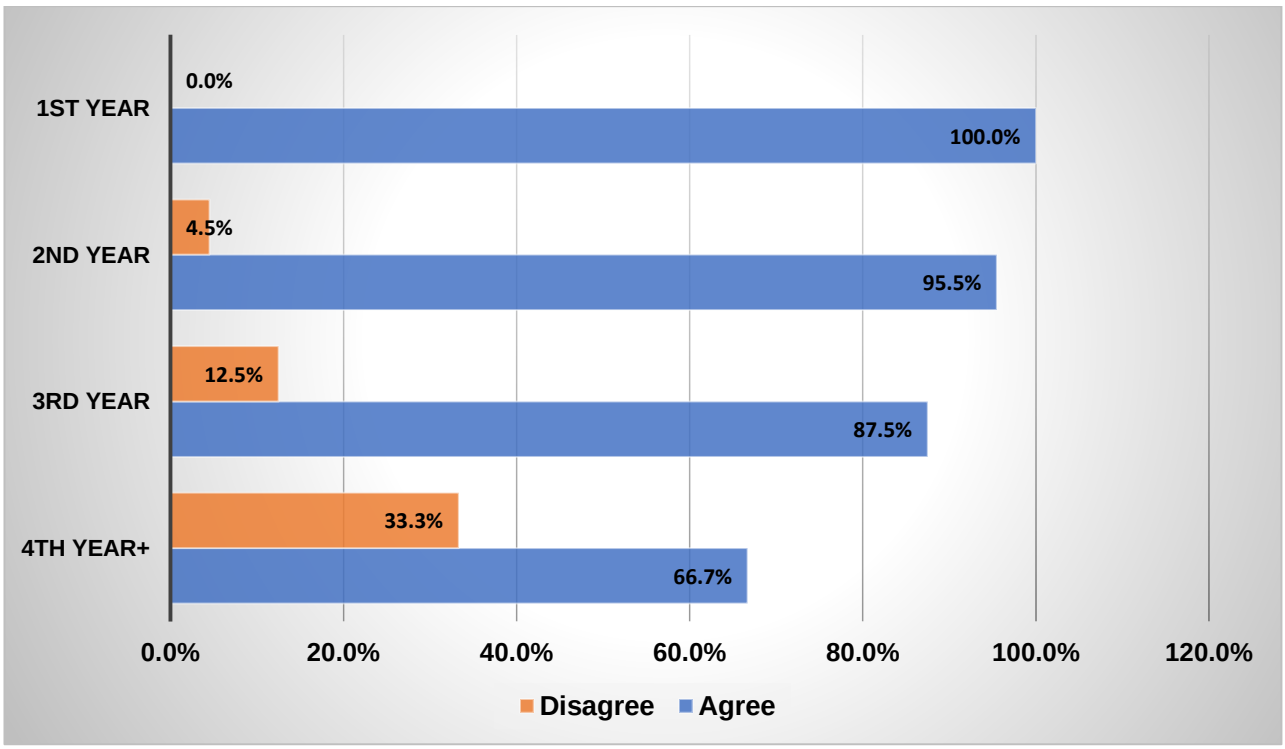
Figure 19: Whether PhD students should learn advanced methods by current PhD students' age groups



Year of study: As shown in Figure 20 below, agreement that students should study advanced training during their doctorate fell as students progressed through their PhD, beginning with 100%

agreeing in 1st year and decreasing to 87.5% agreeing by 4th year. The results were weakly associated and not statistically significant (x^2=0.23; p≤.05; V=0.29).

Figure 20: Whether PhD students should learn advanced methods by current PhD students' year



The decreasing agreement that PhD students should study advanced methods as students progressed through their PhD journey is perhaps reflective of a growing recognition of the fact that many students did not actually have time to undertake advanced training, as is discussed in the following section below, despite wishing to in principle.

Students' PhD research methods: Agreement with studying advanced methods was high and very similar across different types of doctoral research methods use, although this was highest among those using mixed methods. Regarding those using mainly qualitative methods, 92.5% agreed, 90% using mainly quantitative methods agreed and 100% of those using mixed methods agreed. The results were weakly associated and not statistically significant (x^2=0.29; p≤.05; V=0.23).

6.2.1.2 Employed PhD graduate questionnaire

Nearly all employed graduate respondents thought that advanced training should be undertaken during the doctorate, 97.7% (44 / 45) agreed and 2.3% (1 / 45) disagreed with this.

Comparing current and former, now employed, PhD students / graduates those employed were slightly more likely to agree with advanced methods training during the doctorate compared with current students, 97.7% employed respondents compared with 94.4% current students agreed. Again this may indicate a growing awareness of the need for specialisation and advanced methods knowledge once a person is employed and requires these skills for work.

6.2.2 Whether studying broad methods sacrifices time available for advanced training

This next part of the chapter examines research participants' views on whether learning compulsory broad methods means that the time available for specialist and advanced methodological training is affected.

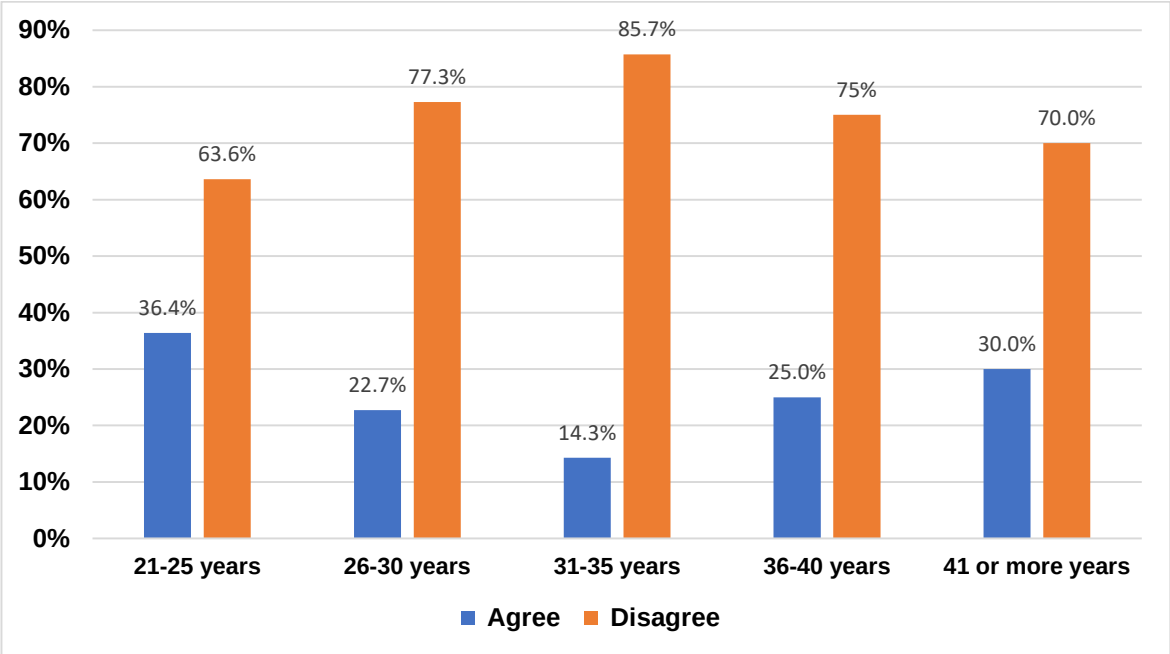
6.2.2.1 Current PhD students: Questionnaire findings

The majority of students responding to the questionnaire did not view compulsory broad training as compromising the opportunity to study advanced training. Approximately three-quarters (75.4%) disagreed that learning broad methods does not leave time to learn advanced methods and a quarter (24.6%) agreed.

Gender: Females were more likely than males to agree that learning core methods leaves no time to learn advanced methods, with around a third (33.3%) of females agreeing with this compared with around a fifth (19%) of males. Gender and views on available time for advanced methods training were weakly associated and not statistically significant (x^2=0.20; p≤.05; V=0.16).

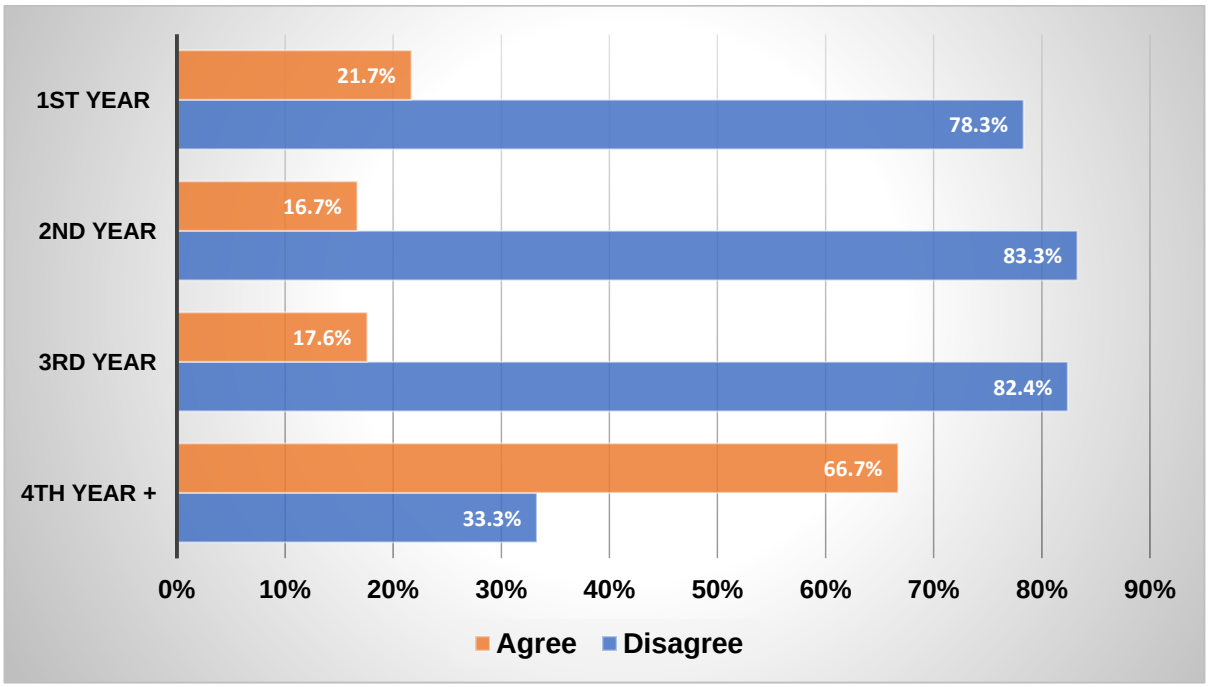
Age: As shown in Figure 21 below, disagreement with whether learning core methods leaves no time to learn advanced methods showed a clear curve pattern increasing with the respondent's age until age 35, peaking at 85.7% of 31-35 year olds, and reducing to 75% for 36-40 year olds and 70% of those aged 41 and more. Age and advanced methods training are weakly associated and not at all statistically significant (x^2=0.77; p≤.05; V=0.16).

Figure 21: Whether learning core methods sacrifices time for learning advanced methods by current PhD students' age groups



Year of study: As shown in Figure 22 below, disagreement that broad training sacrifices time for advanced training was largely similar in the first 3 years of doctoral study with just under four-fifths (78.3%) in 1st year and 82.4% in 3rd year disagreeing. Interestingly, a complete reversal occurred in 4th year, with disagreement falling to a third and agreement to two-thirds (33.3% disagreed; 66.7% agreed). The results were moderately associated and *were statistically significant* at the 5% level (x^2=0.04; p≤.05; V=0.39).

Figure 22: Whether learning core methods sacrifices time for learning advanced methods by current PhD students' year



Students' PhD research methods: Regarding those using mainly qualitative methods, nearly three-quarters (73%) disagreed and just over a quarter (27%) agreed. Disagreement with the view that breadth compromises time for specialisation was even higher among those using mixed methods with 88.2% disagreeing and 11.8% agreeing. Views were mixed for those using mainly quantitative methods in their PhD, however, with a completely even 50 / 50 split between those disagreeing and agreeing with this. The results were weakly associated and not statistically significant (x^2=0.12; p≤.05; V=0.28).

6.2.2.2 Employed PhD graduate questionnaire

The majority of employed former PhD students (86%) strongly disagreed / disagreed that having to study broad methods during the doctorate sacrifices the amount of time available for advanced methodological study. Only 14% agreed with this.

Comparing former and current doctoral students' views, employed graduates were more inclined to view both broad and advanced training as possible to achieve within the doctorate with 86% of employed graduates disagreeing that broad training sacrificed available time for advanced compared with 75.4% of current PhD students.

6.3 Views on advanced methods training: questionnaire findings summary

6.3.1 Whether students should undertake advanced methods training

Summarising respondents' views of whether *in principle students should* undertake advanced methods training during their doctorates, the majority of 94.4% agreed. Neither gender nor the type of methods used by PhD students showed much variation in relation to whether respondents thought advanced training should be undertaken. Age showed a slight U-shaped curve pattern, the youngest and oldest age groups tended to agree most. Perhaps the most interesting finding, is that agreement that students should study advanced training during their doctorate decreased as students progressed through their PhD, beginning with 100% agreeing in 1st year and decreasing to 87.5% agreeing by 4th year. This is arguably in line with the literature such as Orton-Johnson and Webb (2011) which suggests that support for broad methods training increases among later year PhD students, thus support for advanced methods training which is opposite to broad training could debatably reduce. I speculate that this declining agreement is perhaps reflective of a growing recognition that, despite desiring in principle to undertake advanced training, many students did not actually have time to do this. Results on whether respondents felt that having to study broad methods sacrifices time for advanced training clearly support this hypothesis, showing a sudden and substantial increase from 17.6% in 3rd year to 66.7% in 4 year agreeing.

6.3.2 Whether broad methods training sacrifices time for advanced training

Summarising the findings on respondents' views of whether learning core methods sacrifices the time available for advanced method learning, only around a quarter agreed that it did. There was some difference by gender with around a third of females agreeing that having to learn broad methods affects the available time for pursuing advanced training compared with only around a fifth of males. There was a clear curve pattern by age groups; the youngest and oldest age groups tended to agree most that broad training compromised depth training. Respondents' year of study showed a rather interesting picture with relatively low levels of agreement of around a fifth among 1st – 3rd year PhD students spiking in 4th year to two thirds agreeing that breadth sacrifices depth. Regarding differences in views by students' doctoral research methods, there was quite widespread agreement that learning core methods sacrifices the time available for advanced

methods learning among those using primarily quantitative methods (a 50/50 split between those agreeing and disagreeing), however this reduced to just over a quarter (27%) agreeing among those using qualitative methods and just over a tenth (11.7%) of those using mixed methods.

6.4 Whether broad methods training sacrifices time for advanced training: walking interview and video diary findings

Although the findings from the qualitative element of the research largely painted a picture of supportiveness in principle for both broad and specialised training among postgraduate students, respondents indicated concerns that time constraints in carrying out a PhD could mitigate both training types being actually achievable in tandem, as the quotations below show.

"I think most postgrad students, we all feel strapped for time. Part of that is the Masters programme is just a year long. So, they really pack in a lot even though the terms are so short that they can't pack in that much….and you need the time to write-up the [Masters] dissertation. I think definitely broad training is really important but…you also have a lot to get done in only a year, particularly with the Masters." (Leah, PhD)

When asked to directly consider whether they had *actually been able* to study advanced courses, a clear view emerged from several students that insufficient time was available for them to undertake advanced /specialised training within the 3-4 PhD year degree programme. Part of this involved weighing up relative importance of their personal limited resources of both time and money.

Marion, for example, described this as making 'trade-offs' between various possible activities during a doctorate:

"Well if you've got 3 years to do your thesis, then you've got a time and financial pressure, which most people do. So then you are making trade-offs and difficult decisions all the time." (Marion, PhD)

A sense emerged from students that they took many things into account when making decisions about advanced training such as attending and presenting at conferences, publishing research and also gaining teaching experience.

Aaron, for example, referred to the pressures that doctoral students face in attempting to gain the general and transferable skills proposed by the ESRC. In attempting to do this, and additionally ensure that he would emerge with doctoral research of sufficient quality, Aaron reflected that for him, advanced training had to be deprioritised:

"If I'm honest with myself I probably would find time to do something [advanced courses]. But I think that I have everything in my bag that is needed to carry out my research properly…And there's other things that I have to do, there's conferences, there's applying for grants, there's publishing. A lot of things to do aside of your actual thesis which are also time-consuming. At one point I really had to set a priority list and additional [advanced] courses are not high on this list." (Aaron, PhD)

Marion argued that the ESRC training requirements for students could be attained if the PhD timeframe was sufficiently long. Yet within the reality of the 3 or 4-year doctoral programme the smorgasbord of tasks, requirements and activities was not actually feasible. Interestingly she described the doctorate as a 'kind of factory machine', giving a sense of churning out people with PhDs from university:

"There's time to do the generalist stuff and the specialist stuff, if the degree time is long enough. But if there's this kind of factory machine of PhDs, then you're going to be limited in everything…If you also want to have publications in that time you probably can't do the general stuff, the specialist stuff, do your thesis, go to conferences, actually get publications forthcoming…I don't think you can do that much in 3 years…. I don't think I could do all that in 3 years." (Marion, PhD)

The views expressed above by some students regarding the relative interplay of advanced versus broad training are suggestive that many of the postgraduate students consulted via the qualitative methods did not have time within the earlier stages of their PhD to study both effectively**.** This in turn, indicates that the ESRC's proposals in the 'guidelines' documents presented at the beginning of this chapter of PhD students learning advanced methods are largely not being met, due to too many requirements to be achieved within the timeframe. Simply put, something has to give in such circumstances. It is not possible to keep adding more elements in, without removing others from the set of requirements. This crucial aspect of my research will be further discussed towards the end of this chapter, where a suggestion will be made for potential modifications in the timing delivery of broad training, which may help to mitigate against this failure to provide the circumstances in which doctoral students can learn both broad and advanced methods in the timeframe. Issues identified with advanced training are also supported to some degree by the

literature. Although not precisely the same as whether students had time for advanced training, Bartholomew (2015) found that the 'Advanced Training Network' (an NCRM run resource for advanced training) was not working as well as had been anticipated.

Some particular aspects were identified by postgraduate students that could influence whether an individual could actually undertake advanced as well as broad methods training including: how long they have available to do their PhD (and the influence of funding on this) and the degree to which their PhD research topic is decided upon at a relatively early stage so that they can commence working on it.

Aaron proposed that it could be possible to do both advanced and broad training, however, this would be dependent on the particular student and their circumstances, for example in relation to funding, and also the rate at which an individual is personally able to undertake all the necessary components within a doctorate:

"It really depends on the individual…if I look around at my fellow politics PhD students, we're all the same year, we started the same time yet we're at very different stages of our research. So if you ask me is it possible to get all the necessary courses, all the training you need and finish everything including publishing, and going to conferences in 3-4 years, I'd say it really depends on the individual. I know I tried to do it in 3 years, because I don't want to study for ever. Some people are not really in a hurry, for different reasons. There are people that have scholarships, who might be less pressured in terms of money than people who have no scholarships and who are like 'the sooner I'm done, the sooner I earn money." (Aaron, PhD)

Marion also identified individual circumstances of doctoral students as being important in terms of what they could achieve within 3-4 years, however, she conceptualised how clearly defined the doctoral research was from an early stage as being crucially important. In situations where the PhD research project was well defined at an early stage, then doctoral students may have time to do both core and specialised methods training, as well as completing their doctoral thesis in that timeframe. If, however, their PhD topic and methods are under revision for a period of time before being narrowed down, Marion argued that this would make both core and specialised methods training far less possible:

"Maybe you can do a PhD in 3 years if you have a pretty much well nailed down topic and a really good understanding of how you're going to find out about that….But if students are not 100% certain about what they're doing before they get here, it doesn't leave much time for error basically,

there's not a lot of chopping and changing you can do. So I think you need to be quite well defined before you get here, and I certainly wasn't. I don't think in 3 years I could have done the general stuff, the advanced stuff, and write and submit." (Marion, PhD)

6.4.1 Whether broad methods training sacrifices time for advanced training: walking interviews and video diaries findings summary

Overall, the students consulted were in favour of both broad and specialised training for postgraduate students in principle, yet they voiced serious concerns that the time constraints of doctoral study could mitigate both training types being achievable in practice. None of the qualitative research PhD participants had been able to study any advanced methods at the time of interview. Lack of advanced training was rationalised as due to making 'trade-off' decisions on the relative importance of all the components they must achieve during their PhD within a landscape of limited time and financial resources. Certain factors such as source of funding, the amount of time a student could take to do their PhD (if time and money were no object) and how well-defined the doctoral research project was at a relatively early stage all played into such decision-making. The most significant aim for students was to successfully carry out their doctoral research and write up and submit a PhD thesis. Of secondary importance were aspects that could gain competitive advantage for later employment such as teaching, publishing and presenting research. Undertaking advanced methods training was perceived by students as being of limited benefit to their overall goals of employment compared with other elements, although this is at odds with the ESRC's guidelines that students should pursue both broad and advanced methods training.

6.5 Influence of 'internal factors' on views of broad methods training

This next section of the chapter discusses internal, namely within-person, factors which can affect how students respond to methods training, and some thus elements which pose problems for the 'one size fits all' type approach advocated by the ESRC in postgraduate methods training. Standardised approaches to methods training assume that postgraduate students are a relatively homogeneous group, a conjecture questioned in the literature (Collinson and Hockey, 1997) and by this research. As shall be discussed below, postgraduate students are anything but homogeneous and their needs, backgrounds and perspectives in relation to methods and training are varied and thus standardised packages with no room for tailoring can be problematic.

As was posed in the literature review chapter, there is the question of 'academic tribalism' and the tensions between this on one hand and inter-disciplinarity and being a generalist social scientist (which broad methods training seeks to encourage) on the other. 'Academic tribalism' can include a fierce degree of attachment to particular elements of a specific discipline and / or a clearly defined methodological identity, as particular methods are often associated with specific disciplines for example, econometrics with economics and ethnography with anthropology.

Multiple factors feed into the formation of a student or researcher's methodological identity. One such influence is students' experiences of methods study and whether these are broadly favourable or unfavourable with respect to particular methods (Murtonen, 2005; Byrne, 2012). Moreover, natural abilities in particular areas, for example, whether they tend to find maths and that way of thinking relatively straightforward or not, can affect students' abilities in, and attitudes towards, statistics and quantitative methodologies (Chamberlain, Hillier and Signoretta, 2015). As identified by authors such as (Williams, Payne and Sloan, 2016a) for those ill at ease with a maths-type way of thinking the prospect of studying statistics, and quantitative methods generally, can be disquieting. Comparisons in these areas between the findings of those studies and this study are made.

Data from the walking interviews and video diaries relevant to 'academic tribalism', both discipline and methodologically related, and how prior methods experiences can influence views of current methods training, are discussed below. Students' conceptual framings of social science as more similar to arts / humanities or science / maths from this study's questionnaire data and comparisons with Williams ***et al's*** (2008) findings on this are also presented.

Before moving on to discuss academic tribalism with respect to methodological identity and then disciplinary identity, qualitative data findings on students' previous experiences of methods study and also their attitudes to quantitative methods training (together with concepts of levels of ability in statistics and statistics anxiety) will both be discussed. Deem and Brehony (2000) postulated in their qualitiatve study that student status such as part or full-time, domestic or international and personal characteristics such as gender can influence views of broad training and comparisons are made with their findings. These are all 'internal factors' which can influence how a student responds to the idea of broad methods training as well as to specific types of methods, such as statistics. External factors such as course content, teacher and tutor quality and tutorial group dynmaics, which can affect perceptions of broad methods training, were considered in chapter 5.

6.6 Effect of personal characteristics such as student status (full-time or part-time; international or domestic) and gender on views of broad methods training

Deem and Brehony's (2000) qualitative study using interviews and focus groups with students indicated that student status, such as being full-time or part-time or an international versus UK domestic student can influence views of broad methods training. Deem and Brehony (2000) argued that part-time students were less supportive of broad training than full timers and international students were more in agreement with it than their domestic student peers. These hypothesises from the literature were tested out in relation to the two sets of data from this doctoral research, the qualitative and the quantitative, and are reported below.

6.6.1 International versus domestic student status and views of broad methods training

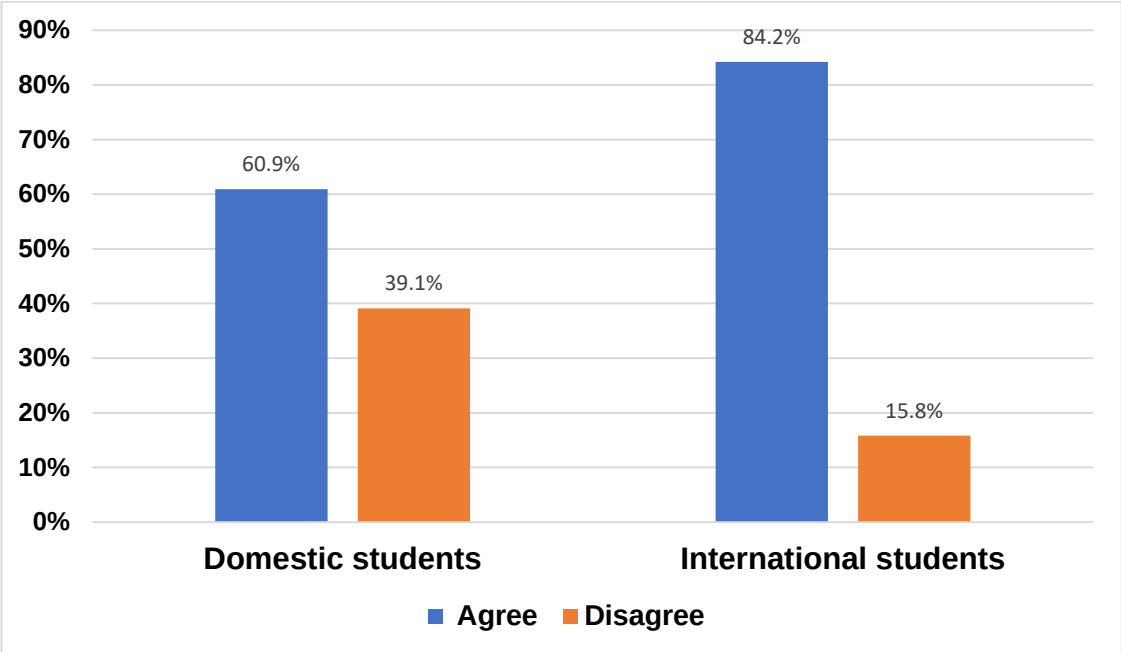
6.6.1.1 Questionnaire findings

56.4% of the PhD students responding to the questionnaire had studied for their undergraduate degree at a UK or Republic of Ireland university (classified as domestic) and 43.6% at a non-UK university (classified as international).

Clear differences were observable between the two groups with international students far more likely to agree with broad methods training in general, as well as quantitative and qualitative training, being compulsory than domestic students. All results were statistically significant either at the 10% or 5% level.

Views of broad methods training: As Figure 23 below shows, 60.9% of domestic students agreed with broad methods training compared with 84.2% of international students. The variables are weakly associated and statistically significant at the 10% level (x^2=0.09; p≤0.1; V=0.26).

Figure 23: Current PhD students' views of broad training by whether domestic or international undergraduate student



Views whether quantitative methods training should be compulsory: 65.5% of domestic student respondents agreed with compulsory quantitative training compared with 86.4% of international students. The variables are weakly associated and statistically significant at the 10% level (x^2=0.09; p≤0.1; V=0.24).

Views whether qualitative methods training should be compulsory: 67.9% of domestic student respondents agreed with compulsory qualitative training compared with 90.9% of international students. The variables are weakly associated, and they are statistically significant at the 5% level (x^2=0.05; p≤.05; V=0.27).

Thus, it is evident that Deem and Brehony's (2000) conclusion that international students are more likely to agree with broad methods training than their domestic counterparts is also borne out by this study's quantitative findings. This is also the case for views on whether qualitative and quantitative methods training should be compulsory in this study, which was not specifically investigated by Deem and Brehony (ibid).

6.6.1.2 Walking interviews and video diary findings

16 PhD students contributed to this doctoral study either via a walking / pilot interview or a video diary, 10 of these were international PhD students and 6 were domestic (the remaining four

participants were Masters students and therefore not included in this discussion of PhD students views). Students were classified as either international or domestic students from whether they had studied for their undergraduate degree in the UK or another country outside of the UK. Of the 10 international students 4 students held mixed views of broad training overall, 4 held positive views and 2 possessed negative views. Regarding the 6 domestic PhD students in the qualitative sample, 5 held mixed and 1 had positive views of broad methods training. Thus, it can be seen that international students in the qualitative part of the study arguably held slightly more positive views of broad training, supporting Deem and Brehony's (2000) findings.

Overall, both the qualitative and quantitative findings in this study support Deem and Brehony's (2000) argument that international undergraduate students are more in agreement with broad methods training than domestic students.

6.6.2 Full-time versus part-time status and views of broad methods training

6.6.2.1 Questionnaire findings

As would be expected, the majority of nearly nine-tenths of respondents studied for their PhD full-time (88.6%) and just under a tenth (11.4%) studied part-time.

Views of broad methods training: There was no real difference between respondents in terms of whether they agreed PhD students should study broad methods in terms of whether they were part-time or full-time doctoral students. 73.6% of full-time respondents agreed with broad methods training compared with 75% of part-timers agreeing. The variables are weakly associated (Cramer's V 0.0109) and not at all statistically significant (x^2=0.9; p≤.05; V=0.01).

Views whether quantitative methods training should be compulsory: Full-time students were more likely to agree that quantitative methods training should be compulsory than their part-time counterparts; 62% of part-time students agreed compared with 74.6% of full-timers. The variables are weakly and negatively associated and not statistically significant (x^2=0.45; p≤.05; V=0.08).

Views whether qualitative methods training should be compulsory: Full-time students were far more likely to agree that qualitative methods training should be compulsory than their part-time counterparts. 50% of part-time students agreed compared with 80% of full-time students. The variables are weakly and negatively associated and they *are statistically significant* at the 10% level (x^2=0.09; p≤0.1; V=0.19).

Regarding the quantitative sample in this study, Deem & Brehony's (2000) findings noting differences between part-time and full-time students' views, with full-timers being more supportive of broad methods training, were not upheld regarding whether broad methods should be studied overall but were reinforced on whether quantitative and qualitative methods training should be compulsory.

6.6.2.2 Walking interviews and video diary findings

Analysis for this is not very meaningful as the PhD students in the qualitative sample were primarily studying full-time (14 students out of 16) with only 2 being part-time. Of the 2 part-time students, one held a mixed view of broad methods training and the other had a positive view. Regarding the 14 full-time students, 8 held mixed views, 4 positive and 2 negative views of broad methods training. Due to the small numbers of part-timers in the qualitative sample for this study it is not valid to infer whether Deem and Brehony's (2000) finding that part-time students are less supportive of broad methods training than their full-time counterparts are borne out by this part of the study.

Overall it can be concluded that this study to some degree concurs with Deem and Brehony (2000) that part-time students tend to be less supportive of broad, and in particular compulsory, methods training than full-time ones.

6.6.3 Gender and views of broad methods training

Quantitative data on the potential effects of being male or female were already presented in results Chapter 1 on views of broad methods training and results Chapter 2 on views of compulsory quantitative and qualitative methods training, however, a consideration of gender in the qualitative branch of the current study is made below to compare with findings from Deem and Brehony's (2000) qualitative study.

6.6.3.1 Questionnaire findings

Little difference in views was noticeable by gender concerning views of broad methods training overall, with similar proportions apiece; 74.4% of males agreed and 70.6% of females. Differences by gender do begin to emerge in the current PhD study when whether methods training *should be compulsory* is examined. Males were more likely than females to agree with compulsory training,

with 80.8% of males compared with 59% of females agreeing that quantitative methods training should be compulsory and 83.7% of males compared with 65% of females agreed with compulsory qualitative training.

Thus, more evidence of potential effects of gender with males showing a higher overall degree of supportiveness of (compulsory) broad methods training than females was found in both branches of this study, and more males were supportive of broad methods training in the qualitative element of this study than in Deem and Brehony (2000). Males were more supportive of *compulsory* quantitative and qualitative training than females in the questionnaire data of this study.

Turning to consider this finding of reduced female supportiveness of compulsory broad methods training in relation to the literature. As commented upon in the literature review chapter, few studies directly investigate postgraduate students' views of broad methods training, and thus potential gender differences in these. Orton-Johnson and Webb (2011) and Collinson and Hockey (1997) both engage with postgraduate student's attitudes towards methods training yet neither explicitly identify gender as fundamental in shaping views. Deem and Brehony (2000) researched whether varying types of postgraduate students experienced disparities in access to different types of cultures: research student cultures (such as student peer community networks); research training cultures (of primary importance here in terms of attitudes to broad methods training) and academic research cultures (such as shared disciplinary knowledge and values and departmental practices). Deem and Brehony (2000) concluded that there were some differences by gender, yet this was not as marked as for other variables they investigated, for example international / domestic student and part-time / full-time study statuses. Moreover, only some females experience reduced access to the above 'cultures' and thus gender differences were inconclusive (Deem and Brehony, 2000). Deem and Brehony (2000) did argue, however, that males typically have increased confidence in their own academic abilities and had higher self-esteem than females (p. 161). Although not specifically about methods training views, Hockey (1994) argued that a PhD student's personal characteristics and circumstances, such as being a mature student and / or having caring responsibilities that may compete with doctoral studies, could negatively impact upon the ease of their adjustment to social science PhD student life. Hockey (ibid) did not, however, explicitly highlight gender as an influencing factor upon doctoral student adjustment. Notwithstanding this, with many women in the general population aged 30 and above having families and partners, many female, mature doctoral students also have dependents. For example, in the 'Thematic Review 2017-18: Mature Students and Student Parents and Carers Final Report' study conducted

by the University of Edinburgh, 7% of all students declared having dependents when beginning their university studies. Of the University of Edinburgh students with dependents, the majority (80%) were postgraduates - 58% were taught postgraduates, 22% research postgraduates and 20% were undergraduates. Discussing 'National Union of Students' (NUS) data, the University of Edinburgh 'Thematic Review' report identifies that more mature students are female than male, and many female mature students study part-time (ibid p.4). Hockey (1994) proposed that negative effects on transitions to PhD student status such as being a mature student with external responsibilities remained the case, even where certain positive factors associated with a smoother transition were in place, such as being part of a research student peer network (termed by Hockey the 'research student subculture') (p. 185):

> "The student's biography may contain features which work against the positive factors operating at departmental and subcultural levels (Rudd, 1985, pp. 49-62). Many of the students interviewed were far from the mythical norm of young, recently graduated and single. They were often mature, married or in established relationships, with children, mortgages and the whole panoply of responsibilities which can come with advancing age Such factors may dilute the impact of the aforementioned factors." (1994, p. 185)

Some have criticised formalised methods training as being created around an idealised model of a young, male, full-time PhD student without the kinds of external responsibilities highlighted in the above quotation from Hockey (1994): "the typical social science research student is assumed to be male, 21 or 22 years of age, studying full-time, geographically mobile and with few or no domestic responsibilities." (Collinson and Hockey, 1997, p. 374).

Notions of gender impacts on doctoral completion rates, in particular perceived differences between STEM and social science PhDs completions and students' capacity for intensive study, and the relationship between these disciplines, age and gender, were also echoed in my study's qualitative data by key expert 1:

"They [politicians] had an idea that sciences had a good completion rate, because the 22-year-old, white man got into the lab in the morning, stayed there until 6 at night working flat out on his project, and then went to a pub with his supervisor and research team or went out and played cricket or something and they didn't do anything else."

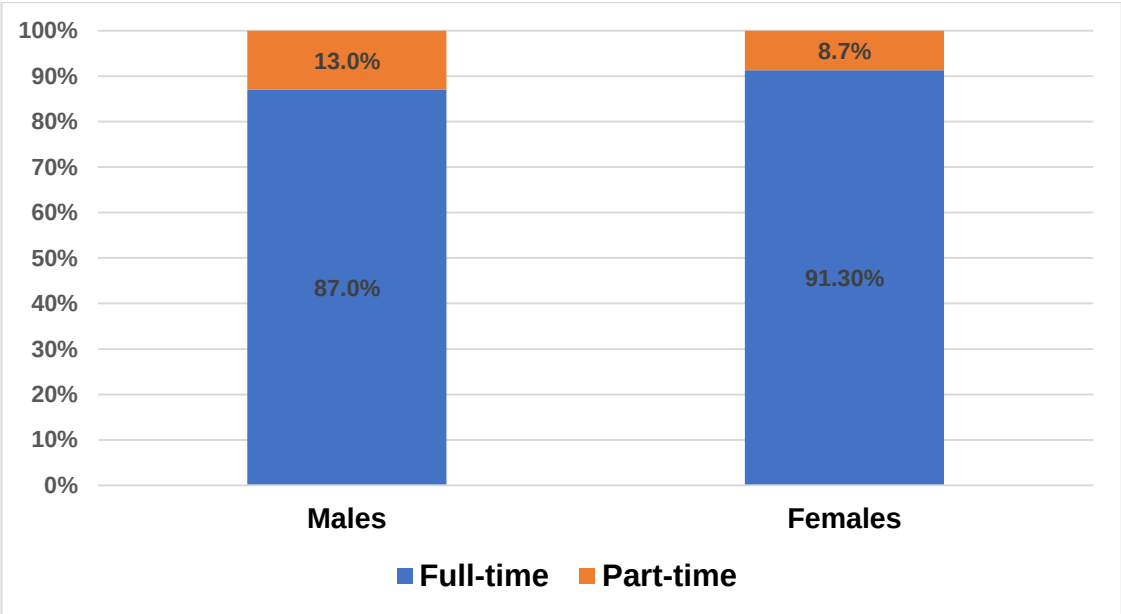
"On the whole STEM subjects don't have mature students, they don't have many women, they don't have part-time students, they only have overwhelmingly full-time, white men."

I shall now turn briefly to consider recent work on statistics anxiety and gender differences in reactions to learning quantitative methods, as one example of a type of broad methods training. Ralston *et al.* (2020) explored this, hypothesising that female undergraduate students would exhibit disproportionately high levels of statistics anxiety based on the international literature, however, their findings concluded that females were only moderately likely to state they felt statistics anxiety thus gender did not appear to have the anticipated effect.

Thus, I argue interpreting gender impacts upon student's views of broad and compulsory methods training is not clear cut. It is possible that being female is not what gives rise to more negative views of compulsory training, but that there are confounding variables such as age (i.e. being a mature student or not) and mode of study (i.e. part-time or full-time) which are influencing views. This would seem possible, as evidence of impacts of being a mature student and mode of study variables on attitudes to methods training was highlighted more frequently within the literature than gender. In order to further explore this hypothesis, I conducted further analysis to investigate whether more females in my sample were part-time and mature students than males.

Regarding full versus part-time study status and gender, as shown in Figure 24 below surprisingly slightly more males in the sample studied part-time than females, 13% of males studied part-time compared with 8.7% of females (just over 4% difference).

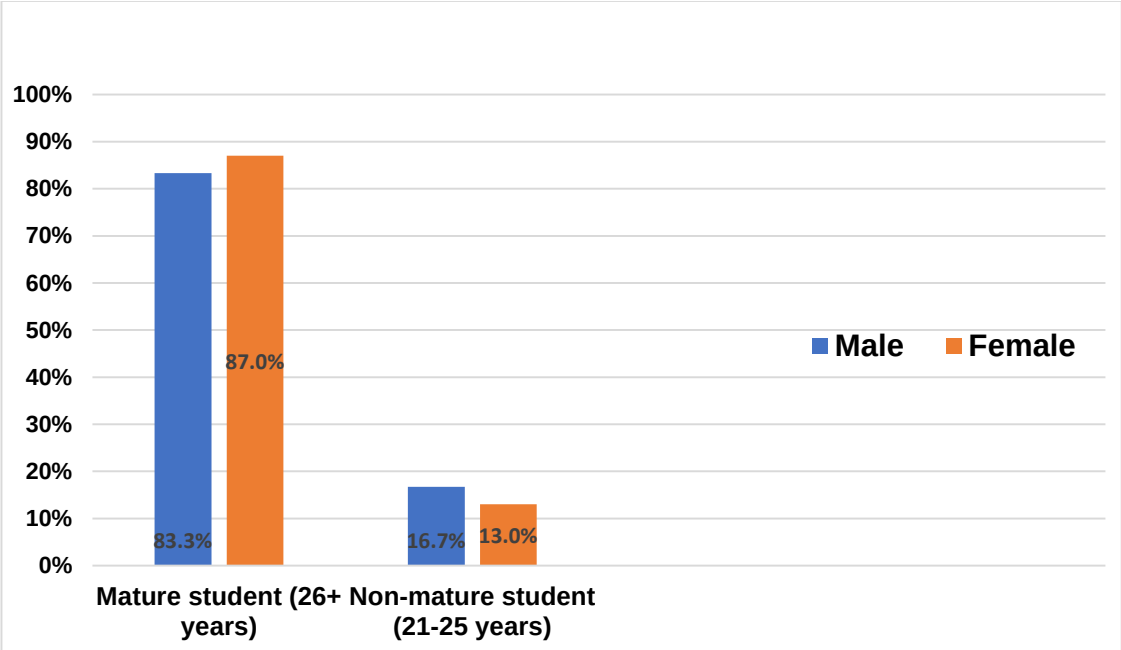
Figure 24: Full and part-time study status by gender



Thus, I concluded that statistically significant differences with females being less supportive of compulsory broad training than males in my sample is not a result of a larger number of part-time students being female because they are not.

Exploring whether being a mature student or not is actually impacting formalised methods training views more than gender, I analysed the percentage of mature students who were female in my sample compared with males (Figure 25 below). This time slightly higher percentages of mature students are female than male (87% compared with 83.3%) thus nearly a 4% difference in the other direction. This may indicate that females' diminished supportiveness of broad, compulsory methods training could be at least partly as a result of their age, as opposed to solely due to their gender.

Figure 25: Whether mature student or not by gender



6.6.3.2 Walking interview and video diary findings

More females took part in the qualitative branch of this study than males, 12 females and 4 males. Arguably more positivity about broad methods training was manifested by the males in the qualitative part of the study than females, with 3 males exhibiting overall positive views and 1 negative. Of the 12 females, 9 held mixed, 2 positive and 1 negative overall views of broad methods training.

Deem and Brehony (2000) wished to examine the effect of gender in their qualitative study on differential access to 'research cultures' including views on research methods training. Although Deem and Brehony commented on some indications of gender impacts in relation to student-supervisor relationships and differences in access to academic and staff cultures they stated that there were too few examples of gender differences to conclude it had a significant effect. Deem and Brehony (ibid) offered no comment regarding gender specifically in relation to accessing 'research cultures' i.e. students' attitudes to broad methods training, indicating there were no particular notable findings on this.

6.7 Key problems with the 'one size fits all' approach to methods learning: walking interview and video diary findings

The current ESRC DTC / DTP structure and delivery of doctoral methods training is ripe for accusation of being a 'one size fits all' type approach that lacks tailoring to the needs of students more individually. Results chapter 1 on students' and experts' views of broad methods training, analysed research data in relation to the 'quick wins' theme, i.e. what has worked well in relation to the ESRC's vision for postgraduate training and development. This following section of chapter 6 outlining views on compulsory broad methods training, will now investigate research material in relation to the 'one size fits some but not all' theme, which argues that the relatively untailored training package delivered to Masters and PhD social science students works well for some but does not suit all of them.

In addition to the criticisms of broad methods training noted elsewhere in this thesis, students participating in the walking interviews and video diaries raised 5 key challenges to the 'one size fits all' approach regarding ways in which broad (and compulsory) methods training was deficient and / or problematic including: 1. that it could suppress innovation; 2. the inappropriate timing of broad courses or particular content within the course; 3. the lack of sufficient course information provision to enable informed choices about whether to study particular broad methods courses; 4. the inappropriateness of combining Masters and PhD students to study broad methods courses together was inappropriate due to their differing needs and potentially varying levels of methods knowledge and 5. insufficient differentiation between students as 'consumers' or as 'producers' of particular research methods and their associated learning needs.

6.7.1 Suppress innovation / cutting edge thinking

Jason raised one concern with all students studying the same broad methods courses that this could stifle innovation by not fostering individuality of thinking and learning:

"If you've got all the students doing this base level of courses, are you stifling innovation? Are you stifling the inventor who is outside of the normal bell curve, who's on the tail end? Are you stifling their innovation by making them conform?" (Jason, PhD)

6.7.2 Incorrect timing of course material / methods course

In relation to the issue of the time pressures of studying for a PhD, some students also raised that the timing of some of the broad methods courses, and specific elements of content within the courses, were not right for them in terms of feeding in to what they needed to know at the right time.

For example, Aisha noted that the timing of choosing a particular method to focus on for the Data Collection assessment, was not helpful for her as she had not yet chosen her doctoral research methods. The most useful way of using the assessment in the methods course to her advantage would have been to choose to practice a method she was going to use, and possibly generate some data that she could utilise in her doctoral research project. She experienced a similar problem in relation to the timing of task for the 'Research Design' course assessment:

"For Data Collection I wasn't really in a position at that time to know what methods I wanted to use for my PhD. However, I decided to do interviews for the assessment to get some practice at them." (Aisha, PhD)

"Research Design [the assessment was to write down your research design] again this was the wrong timing for me; I wasn't ready to do this." (Aisha, PhD)

On the timing of knowledge exchange / research impact lecture in Research Design course, Aisha and Sue highlighted that this was more appropriate for far later on in the research process than their Masters / 1st PhD year:

'Although it was an important discussion to have but this was more like an after research thing, which for me is too far away and so I am not even thinking about it. My focus right now is on learning sociological research skills and only then would I be anywhere near thinking about how I would be sharing my research and making an impact.' (Aisha, PhD)

The similar view was expressed by Sue:

'I was stuck there thinking this is about exchanging knowledge and disseminating my research results. I was struggling because we're talking about trying to bring communities together, so how research would be used, in communities, in groups and how you could bring the use of research

together with those doing the research and just make it all a lot more effective. And so whilst academically very interesting, I was thinking, well surely this is after we've done our research?' (Sue, M)

It should be noted that teaching students about knowledge exchange and impact early on in the research process was intentional as unless this is considered from the outset it is difficult to do this sufficiently well. The commitment to this is demonstrated, for example, by the fact that all ESRC funding applications must include a well-considered 'pathways to impact' section. Sue's comment above links with the 'future self will thank you theme' that students are not always aware at the time of what will later benefit them.

6.7.3 Lack of provision of course information to enable informed choices

Practical and course administration factors emerged as an important theme for some of the students consulted in terms of framing their responses to broad training courses. One such factor was the provision of information on course content, in order to enable students to make an informed choice on the relevance of a particular course, if it were not compulsory for them. Several PhD students who could have exercised some degree of will regarding which courses to study, were not actually aware whether a course was compulsory. Some expressed they acquiesced to study a particular course perceiving a lack of agency:

"While I was doing them I wasn't aware that they were compulsory…I probably knew the programme of study means you do this, and this and choose. So I probably went through the process of accepting to do these courses and choosing the optional ones… I did complain that I have to do these things…to my supervisor and to friends. But, I don't know, I mean you don't have much choice, do you?" (Phoebe, PhD)

I had no idea what other courses were available. In fact, I still haven't come across any official list of courses that PhD students can choose from." (Aisha, PhD)

Aisha raised two key issues. The first, was that she had felt she had to take the 'Research Design' course when it was suggested by her supervisors, yet reflecting on this now, she was unclear whether it had been compulsory for her programme. Secondly, she did not feel sufficiently well-informed about the range of available courses, to have been able to discuss which ones would be

of most benefit to her with her supervisors, and potentially decide not to have studied the 'Research Design' course in favour of other / another course(s). In the quotation above Aisha emphasis a lack of access to a list of available courses and below she refers to a lack of knowledge about course availability and options around choices or lack thereof:

"I am not even sure if this course [Research Design] was absolutely compulsory to take because quite a few of my batch mates are not taking it. I remember my supervisors suggesting me to take up this course and I guess I was too nervous and naïve in the beginning, having come from a completely different academic background, to not put my opinions forward. I also did not know what exactly the system was like here and if I was allowed to take other courses." (Aisha, PhD)

6.7.4 Inappropriate grouping of Masters and PhD students on courses

Although the following quotations below were already provided in results chapter 1 to discuss students' views on broad methods training, they are presented below again to demonstrate students' criticism that combing Masters and PhD students to study on broad methods courses is unsuitable due to their divergent learning needs being at different stages of their studies and their own academic research.

Toni and Sue each commented on the 'Research Design' course during their video diaries. Toni's quotation below is especially useful as it succinctly encapsulates students' views of the lack of appropriateness of grouping Masters and PhD students due to their varying research stages and thus teaching needs. Sue's words illustrate the clear challenge faced by curriculum designers in endeavouring to meet the heterogeneous needs of postgraduate students. This overall view directly led to my recommendation to separate these student groups for teaching purposes, outlined in the final chapter 8.

"The mixing together of Masters and PhD students created a slightly weird dynamic. *The PhD students are itching to get away and work on their own stuff, and a lot of the Masters students did not yet have a firm research question*. So these two groups were not in the headspace of getting the most out of the course." (Toni, PhD)

"I guess this is the problem with the structure of the course, *there are so many different people doing different Masters, PhDs, different things, and so you can't cater to everybody*." (Sue, M)

Building on this point by highlighting that the timing of particular knowledge content can vary for Masters and PhD students Aisha expressed:

"The 'Research Design' course structure is probably good for Masters students and the timing might work well for them, but it's not so good for PhD students. (Aisha, PhD)

6.7.5 Insufficient differentiation between students as 'consumers' or as 'producers' of particular research methods

Training on a particular method has a dual purpose; to teach a student about a method from the perspective of being a 'consumer' of that method and its associated research and / or a 'producer'. Resonating with Earley (2013) and also Gunn's (2017) arguments in the literature about the different learning needs of students who are consumers or producers of particular research methods, several of the PhD students consulted felt that broad methods courses they had studied, especially those on quantitative methods and statistics, had insufficiently pitched the content usefully for students who were consumers rather than producers of a particular method.

Particularly regarding quantitative methods and statistics, several students commented that as a primarily qualitative researcher, what they truly sought to know about quantitative methods and statistics was how to understand published research using those methods and not any unnecessary detail on how to perform statistical calculations. Although the quotations below were also discussed in chapter 4 in the section that examined how well certain ESRC guidelines outcomes had been addressed, they are presented again below as they are highly relevant for the debates on the needs of students as consumers of a method versus producers.

Bella commented on a failing of the CQDA course in preparing her to be an effective consumer of quantitative research:

'I felt like there were details that I would never need to know but I still don't quite understand the broader picture. I think it needs to be pitched so that as a qualitative researcher I can look at quantitative research and have something intelligent to say about it….It needs to be made more so that researchers will have that understanding of a quantitative piece of research.' (Bella, PhD)

Expert 4 made a relevant point on the idea of students potentially requiring differential learning and training on whether they would be producers or consumers of particular research and methods in the final sentence of the quotation below. They also expressed a view on the crucial importance of

students being exposed to a range of methods and courses, that have some sense of being collectively developed, during their doctorate:

“What many of us argued for, and I think the DTCs and the DTPs have got a bit better for it, is having a range of options. So there are expectations that there are compulsory courses, you devise a set of courses that will collectively address an issue. I’d like to see that not just as a module in quant but if you’re going to do your PhD on juvenile delinquency, that you do get exposed to the range of issues that might be important for you to at least think about. Not necessarily to do yourself but to know how to think about.” (Expert 4)

Although Denise felt that she did have some ability to interpret quantitative research articles, it is clear from her quotation below that she did not feel fully confident in this thus the CQDA course had not completely enabled her to do this:

“To be able to read other people’s work and at least I can kind of understand. It was very difficult for me *because I’m not quite wired for quantitative methods*.” (Denise, PhD)

The ESRC’s training outcome: to develop “fully trained and competent social science researchers, who have…are conversant and sympathetic to approaches used by other social scientists” (2009: 10) intended understanding beyond what some students have indicated above.

6.8 Participants’ suggestions for improving broad training

Chapter 4 previously outlined that students were generally supportive of broad methods training. Improvements to the content and delivery of broad training were, however, proposed and shall be discussed below. Participants’ recommendations for positive modifications to broad methods courses included:

- learning about a method in an applied way and practising it or learn by doing
- being given sufficient time to really explore a method in order to link it to the student’s own doctoral research project
- connecting courses / course content and methods to – 1. a wider range of disciplines (so that students could envisage the potential application for their discipline and field), 2. student’s own research project, 3. timing of usefulness of particular content (whether for current studies or short / long-term in working research career)

- inclusion of specific crucial content in broad methods courses – views from experts

Such feedback for modifications to the current delivery of broad training is suggestive that the 'one size fits all' approach does not work well for some students.

6.8.1 Learning by 'doing'

6.8.1.1 Students' views

Several students commented on the improved learning if methods are practised. Phoebe, a walking interview participant, could see the value in the compulsory broad methods courses, however, felt that the methods needed to be more applied, in order to be truly useful learning for students:

"At this stage doing a course…involves quite a lot of discussion about the methods and *sitting and listening about the methods rather than actually doing them*. I think when you're a postgraduate you should be at least capable to go and do it. So if I was thinking of a better way to design this exercise…I could probably design it in such a way that it's relevant to everyone's topics and study, but choose one method, let's say interview and you go and do it, but do it properly." (Phoebe, PhD)

6.8.1.2 Expert view

Expert 1 also voiced the same perspective as the students above that some methods need to be applied in practice to truly understand them, for example, ethnography:

"Ethnography isn't something you can teach. There are certain rules and practices, tricks. But you have to do it." (Expert 1)

6.8.2 Sufficient time to explore method: Student view

Phoebe expanded on the point of learning a method through doing, and felt that it was very important that sufficient time was given to students to actually use the method for an assessment in a meaningful way that can feed into their own postgraduate research, rather than doing it in a rush:

“If you have much more time to develop something within your research project, then that will feel useful because you're seeing your progress within your research, but you also progress in your skill…Well I don't think we should be exposed to them [methods] in the sense that, you know here's ten lectures and each lecture is going to cover a different method and at the end you’re just going to do a little exercise…It would have been a good thing to go and do a couple of interviews that first term. Or if I had the time and the effort to develop that survey that I did. You know, 2 ½ months to be able to use it and develop it, rather than use that time to go and sit through two hours of lecture.” (Phoebe, PhD)

6.8.3 Contextualising individual methods in a broader framework / embedding research methods training

6.8.3.1 Students’ views

Resonating with the literature about the importance of contextualising individual research methods within the methodological spectrum (Buckley *et al.*, 2015) and embedding methods teaching where possible within substantive topic or theory courses (MacInnes, 2014; Parker, 2011; Gunn, 2017), some students also raised that broad methods courses could be improved by striving to connect them to a wider variety of discipline areas and topics and also making the link between a student’s research and the methods training that they are doing more explicit. This was seen to be especially pertinent in the of statistics and quantitative methods, which at times was viewed to be rather abstract by some students, especially if they were not using those methods in their own research and if quantitative methods were not common within their particular discipline. Regarding the CQDA course Leah remarked:

“There wasn’t much of a connection made to anthropology, I mean anthropologists don't really ever produce their own stats really. There wasn’t any kind of connection made to the anthro fieldwork I felt.” (Leah, PhD)

In term of creating a more explicit link between learning methods and a student’s own research, Phoebe commented:

"If let's say I have to do quantitative methods and you lack knowledge in one particular aspect, technique etc. then of course you will go and do it but then you perceive that as doing your research. You won't perceive this as methods training. So I think it's quite important to embed the methods training and doing your research and not keep the two separate. Here I'm learning methods and doing my research, it has to be together to make sense." (Phoebe, PhD)

6.8.3.2 Experts' views

Expert 3 made recommendations to how postgraduate broad methods training could be structured and delivered, to improve it. They suggested, for example, that students could be made aware of a wide methodological range but have more in-depth training, what was referred to as 'flying time' in a few methods. The comment below also links with the theme of consumer versus producer of particular methods highlighted earlier:

"I would advocate…what you could do is you could expose students to a wide range of methods but get them to have what [name of University of Edinburgh quantitative methods lecturer] calls 'flying time' on 2 or 3 methods. So they start to get some expertise in areas that they wouldn't [normally use] …I [personally] only used half a dozen methods through my entire career but I can understand the output and what other methods are doing. *So I'm a consumer of those methods but not actually a producer*." (Expert 3)

Expert 4 also aired views demonstrating the importance of students having a wider perspective on the variety of possible methods that can be used and perceiving the available methodological range, rather than bracketing each methods course into individual silos leading to a perception of them as self-contained units:

"If you're interested in an issue, what makes people do this, really engaging across methods is really fruitful…When you think is the one module enough? I'd say probably not. But part of the difficulty [is] that, it needs to be embedded in a way of thinking across all training that postgrads get, which is to keep encouraging them to not only look at the substantive literature that uses their methodology, but the substantive literature that uses a range of methodologies, because no methodology is king or queen. And that makes for deeper thinking. The experience of Q-Step has been if you can convey that, then it not only helps to allay the anxiety but it stops you treating a methods course as just a methods course." (Expert 4)

6.8.4 Communicating timing of knowledge relevance

When discussing the 'Research Design' course, Sue argued that a mandatory methods course should be especially careful to communicate to students how particular learning fits into their research career, especially in terms of the timing of specific aspects of research knowledge and whether something is useful currently or in the longer term:

"What was really good about this week was that it said, 'this is what's relevant for now, this is what's relevant for later, this is how all of this fits into your research'. However, it didn't come across strongly in a lot of the other lectures. I'd say maybe about 50% did a good job of that, and 50% didn't…. So I think that there is a task for the organisers to make that slightly clearer. If you make a course mandatory, it's got to be very, very clear about what's now, what's future and what the benefit is." (Sue, M)

6.8.5 Appropriate content for broad methods courses: Experts' views

Some of the experts voiced what they felt broad methods training at postgraduate level should include. A range of views emerged from them regarding what quantitative data methods should be taught in postgraduate courses.

One expert who was a specialist in quantitative methods said:

"[Here is] what I think is a basic curriculum. Basic quantitative methods, I would say all of them [postgraduate students] should do a bit of philosophy of social scientific method. Research design, survey / basic questionnaire design. Introduction to SPSS/ data management. Do some basic univariate/ bivariate analysis. Measures of dispersion/ central tendency. ANOVA. Perhaps multivariate analysis to include Ordinary Least Squares, regression, factor analysis. And maybe up to log linear and logistic regression. Qualitative methods, I'm a bit fuzzier here but I think they should certainly do participant observation, they should do interviewing, focus groups. And there should definitely be basic [qualitative] analysis with something like NVivo or NUDIST or something…The bread and butter of social science." (Expert 3)

Expert 3 argued that methods curriculum developers face a challenge in balancing the relative amounts of breadth and depth within methods training content because if content is either too broad or too focused, then students could become disengaged:

“[Are there disadvantages to broad training?] You’ve got to get that balance between introducing students to a range of things but also giving them enough ‘flying time’ in particular areas so they start to come away feeling confident about things…If you try to do too much it’s information overload and students can get bored of having too broad a curriculum in the same way that they can get bored of having too narrow a curriculum. If you do try to do too much, it just skates over the surface. So there’s a balance to be struck.” (Expert 3)

Expert 4 stated that quantitative methods teaching should cover newer quantitative techniques such as dealing with administrative data and big data, and be careful to emphasise the role of various types of method and techniques in statistical analysis:

“Some really proper, deeper engagement with various models of number and data, because it isn’t just surveys, it is other things and increasingly with admin data or big data those are important. Also for those that mainly do statistical analyses, understanding what the appropriate roles are for other types of methodologies. (Expert 4)

Expert 3 also cautioned against an over-focus on quantitative data analysis at the expense of data collection in terms of methods training content, which they felt was a risk of the way that such training is currently organised and delivered:

“Concerning quantitative methods, in Q-Step there’s become a massive emphasis on data analysis. And this follows through into several universities as analysis within the PhD. Now, data analysis is incredibly important but I do worry sometimes that we are leaving behind the skills that people need to have in data collection…I think that there is a risk in all of this now, we’ve started to get quite worried about methods and methodological training and so on.” (Expert 3)

Finally regarding content, expert 3 acknowledged the perennial challenge for Masters programmes developers to determine the methodological content with a plethora of seemingly important methods yet limited time and space in which to teach them. Thus, prioritising a critical list of programme content is highly challenging. This view very much links in with the ‘infinite shopping list’ theme of this thesis; that there is not boundless space within the programme yet there are many opinions on what postgraduate students should learn, which arguably keeps being added to. The quotation below was already provided at the outset of this chapter and is presented again as it encapsulates this issue:

“In designing Masters programmes in social research, you’ve got the constant problem of trying to get quarts into pint pots.” [x] (Expert 3)

It should be noted in the above quotation that a ‘quart’ is a larger measure of liquid volume than a pint, equivalent to two pints. Thus the illustration of attempting to squeeze far more in, in this case double, than is physically possible is strongly evoked.

6.9 Ways of learning about methods other than via standard courses

This chapter has highlighted what has presented challenges to the ESRC ‘one size fits all’ approach to methods teaching and training in terms of students and experts firstly, that undertaking advanced training is not being achieved in practice by most of the postgraduate students in the qualitative branch this study and secondly, concerns about the content and delivery of broad methods training. The standard university term methods course is, however, not the only way that students can learn about how to conduct research. This next section considers findings on other ways of learning about methods in terms of students’ views from the questionnaire and experts’ opinions from the interviews. Students participating in the walking interviews and video diaries did not comment on alternatives to university term-long courses for learning about methods.

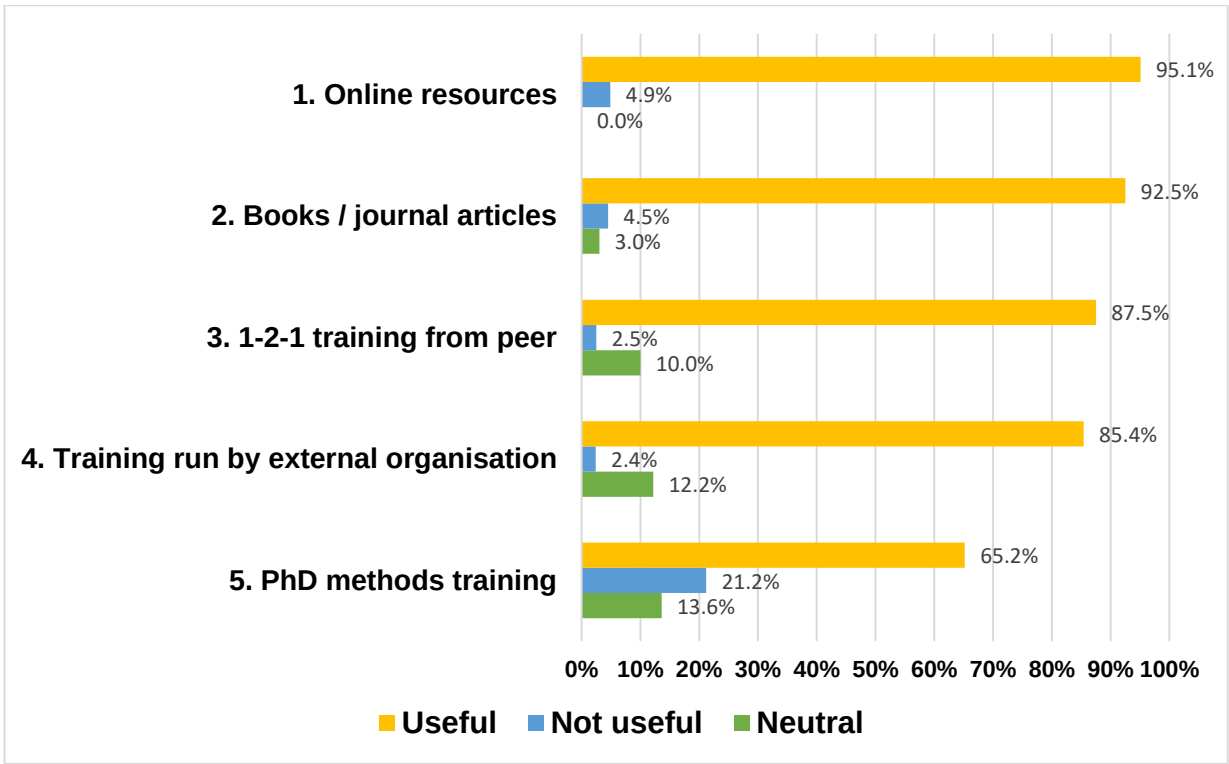
6.9.1 Questionnaire findings: current PhD students

This study’s questionnaire asked current PhD students which ways of learning about methods other than via the training provided during their PhD they had undertaken from a list of options as well as how useful they had found each of those. The response options included learning about methods via: a training course run by an external organisation; one-to-one training from a peer; reading books / journal articles about methods and / or using online resources.

Figure 26 below shows the findings on this ranked by respondents’ preferences with online resources being cited as the most useful (95.1% felt this was useful / very useful) and the least useful of non-PhD training means was methods training run by external courses (85.4% felt this was useful / very useful). Respondents viewed methods training offered in the PhD to be the least

useful of all possible ways of learning about methods with only 65.2% of respondents reporting this as useful / very useful. However, this result should be interpreted with the caveat that the doctoral methods training is provided to students as it is viewed to be of benefit to them (but they do not necessarily choose each element of it) whereas other means of training have likely been proactively sought out by students as they felt they required them.

Figure 26: Current PhD students' ways of learning about methods



6.9.2 Qualitative findings: experts' views

In addition to the entire university term broad methods courses, some of the experts highlighted other useful ways in which students can learn methods skills. For example, expert 4 outlined that engaging in some research work with supervisors or as a Research Assistant can provide highly important research skills and training:

"It does seem to me that the strongest research training is provided…where there's a real mix in ways of training. By that I mean not just formal courses, it's working with supervisors, it's possibly

doing work as an RA [Research Assistant], to help provide funding but that actually also has some real skills development angle." (Expert 4)

Expert 1 also discussed the importance of other ways of learning research methods such as online learning; a full day course; an intensive summer school and so on and that the individual student is best placed to decide what forms of learning suit them:

"The person should know how they would best benefit from learning about whatever. So if they need to know about how to use a CAQDAS software package, they'll know whether they're better off doing it online, going to a day class or for instance going to a summer school or actually going and sitting with someone who uses it, practicing with a postdoc in a research group and taking a week to sit with that postdoc watching while they use that package…I would give them complete autonomy about choosing how they learn it. Because they'll know by then." (Expert 1)

Echoing the point in the literature about students not being a homogeneous group and having different needs and backgrounds (Collinson and Hockey, 1997), expert 1 referred to the potential effects of varying students' demographics and circumstances, for example whether a PhD student has caring responsibilities, and consequently how some ways of learning about methods could be more feasible for them than others:

"Obviously if someone's got twins under 3 something online is probably more practical than suggesting they go for a week's intensive summer school." (Expert 1)

Expert 4 also remarked that short courses are likely to be of most benefit if the students really want to learn the material in the course, and possibly learn a specific technical aspect, and can see the benefit of this knowledge. However, expert 4 felt that brief courses are weaker on enabling students to see the broader perspective on methodology and enabling the kind of contextualisation of methods within the methodological spectrum identified in the literature (Buckley *et al.*, 2015):

"I suspect not all students learn in the same way. That doesn't mean that you shouldn't have compulsory courses but it means you need to recognise that will be better for some students than others. I suspect each of those types of training do different things. So if you think of the kind of short courses and training, I suspect they work best if students are genuinely committed to learning something about it and they may be very helpful in getting at some of the technical complexities but they're not always good at getting people to stand back and take a broad view." (Expert 4)

Moreover, expert 4's point above about compulsory courses being 'better for some students than others' very much resonates with the argument in the literature that standardised methods training assumes homogeneity among students which is not the reality.

6.10 Chapter summary and conclusion

6.10.1 Breadth versus depth in methods training

Questionnaire: Over nine-tenths agreed that doctoral students should study advanced methods although around a quarter felt that in practice having to study broad methods reduces the time available for learning advanced methods. The youngest and older age groups agreed most that doctoral students should study advanced methods and agreement with this clearly declined as students progressed through their doctorate, perhaps reflecting a growing recognition that they had not managed to undertake advanced training. More females than males, the youngest and oldest age groups, 4th year PhD students and those using primarily quantitative methods for their own PhD were most likely to agree that broad methods training sacrifices the time available for advanced methods study.

Qualitative data: findings from students' interviews and diaries indicate that PhD students feel that the lack of time in the 3-4 year PhD and the large set of anticipated requirements and achievements are a key factor in affecting whether students actually undertake advanced training. With limited resources of time and money, students described weighing up various factors and making trade-offs in their decision making. Pursuing activities that would be most likely to enhance later employment opportunities such as presenting, teaching and publishing were prioritised over advanced methods training as well as attaining the overall goal of submitting a successful doctoral thesis.

6.10.1.1 Comparison of quantitative and qualitative findings on breadth and depth training

At first glance, the quantitative findings from the study may seem to indicate less agreement overall with the possibility that breadth sacrifices depth training than the qualitative findings. However, since the majority of walking interview qualitative participants were in later years of doctoral study,

a concordance can actually be noted between the two sets of data in terms of participants' views by their year of study. As discussed previously on p. 226, two-thirds of 4th year students responding to the questionnaire agreed that compulsory broad training sacrificed depth training. The qualitative data also indicated this. Students taking part in walking interviews showed overall supportiveness in principle for both types of training yet expressed a clear concern that there was insufficient time within the doctorate to do both adequately and that as such, undertaking advanced training suffered.

Thus, in relation to the ESRC's guidelines that students should learn both broad and advanced methods, the findings of this study indicate that this is not occurring sufficiently within the current framework. There is simply not enough time within the 3-4 year period to undertake both broad and advanced training effectively, as it is currently structured.

6.10.2 'Internal factors' effects on views of broad methods training

Postgraduate students' previous experiences of studying particular methods and their levels of knowledge in these affect their views of Masters or doctoral methods courses. In particular a negative framing and prior experiences of quantitative methods and statistics on the part of some students, identified in the literature and noted in these research findings, affects their experiences of postgraduate quantitative learning. Statistics anxiety can play into this. Negative views of number work can stem from challenging experiences of learning maths at school and be compounded by a large time lag between such study and learning statistics during an undergraduate degree. Academic tribalism including tightly-held identities surrounding methods and / or disciplines are also crucial factors in shaping responses to methods training and particular methods. For example, some students who self-identified as qualitative researchers felt they were not a 'numbers person' and found quantitative methods difficult to learn. Individual disciplinary identities sit at odds and in tension with a more generalist social science identity and perspective.

Students' personal characteristics such as their gender and also their study status were also found to affect views of broad methods training. In resonance with findings from the literature results showed that international students are more likely to agree with broad methods training and this being compulsory than their domestic counterparts. Moreover, part-time students tended to be less supportive of compulsory broad methods training than full-time ones. Males were more positive about broad methods training than females in the qualitative part of this study and males

responding to the questionnaire also agreed more with compulsory quantitative and qualitative training than females.

6.10.3 Issues with broad methods training and possible solutions

The chapter concluded by presenting respondents' views on problems with the standardised approach to methods training and possible improvements. Criticism of the standardised approach are: 1. that it could suppress innovation; 2. the inappropriate timing of broad courses or particular content within the course; 3. the lack of sufficient course information provision to enable informed choices about whether to study particular broad methods courses; 4. the inappropriateness of combining Masters and PhD students to study broad methods courses together was inappropriate due to their differing needs and potentially varying levels of methods knowledge and 5. insufficient differentiation between students as 'consumers' or as 'producers' of particular research methods and their associated learning needs. Participants key recommendations for improvements to broad methods courses were to enable students to learn by doing, to embed methods courses in students' substantive topic and theory courses and connect them more strongly to their disciplines so that they can contextualise methods within the bigger picture rather than seeing them as something outside of that. Finally, ways that students can learn about methods other than through their PhD courses are discussed with online resources being the most useful means and doctoral training identified as one of the least useful.

Chapter 7 will conclude the reporting of results of this study, presents findings on how well social science PhDs prepare students for employment and how their beliefs around the purpose of a doctorate and whether this is instrumentally-orientated around gaining employment for study influence respondents' views on this.

7 Chapter 7 Results: Effectiveness of doctoral methods training for employment, career aspirations and how the DTCs and DTPs were established

7.1 Introduction

The ESRC postgraduate training and development guidelines 2015 emphasise that postgraduate methods training should prepare students for subsequent employment. 'On completion of the training, the student should be equipped with knowledge required to undertake further independent research at the frontier of the field or take up employment in policy or practice communities that exploit such knowledge.' (ESRC, 2015, p. 10)

However, to what extent do postgraduate students agree that a PhD should prepare them for work, and do they think it successfully achieves this? This final results chapter addresses relevant results from the data on this as well as investigating the link between research career aspirations and views of broad and compulsory methods training. A final discussion of experts' views on the formation of the DTCs and DTPs is presented before concluding the results chapters and moving on to the discussion and conclusion chapter of this thesis.

7.2 PhDs and employment

Two elements of the quantitative data findings will be considered in turn together for this theme of doctorates and employment:

1. What is the overall purpose of a social science PhD and has this changed over time? Should one of its fundamental purposes be to prepare students for employment?
2. Do PhDs prepare students effectively for research / teaching employment?

7.2.1 Should PhDs prepare students for employment?

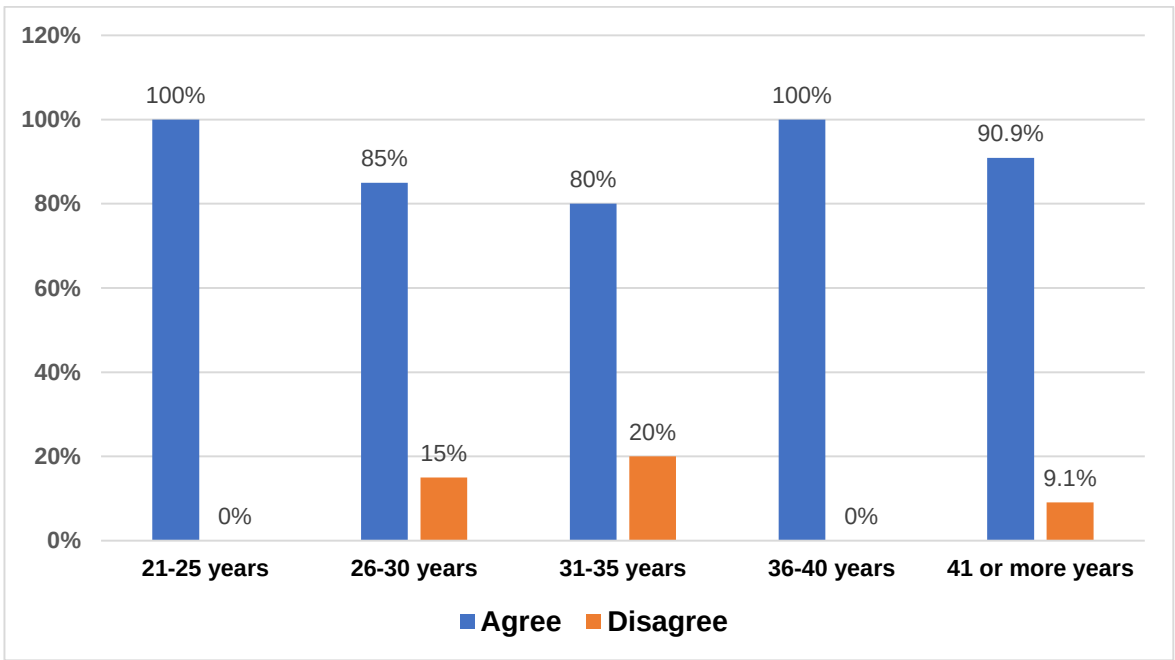
7.2.1.1 Questionnaire findings: Current PhD students

Overall, nearly nine-tenths agreed (89.2%) that a PhD should prepare for employment and one tenth (10.8%) disagreed.

Gender: Although overall both genders agreed that PhDs should prepare students for employment, more females than males disagreed with this (21% compared with 6.8% respectively). Around four-fifths (79%) of females agreed and over nine-tenths of males agreed that a key purpose of a PhD should be readying students for employment. Gender and views on whether doctorates should prepare for employment were weakly, negatively associated *but were statistically significant* at the 10% level (x^2=0.09; p≤0.1; V=-0.2).

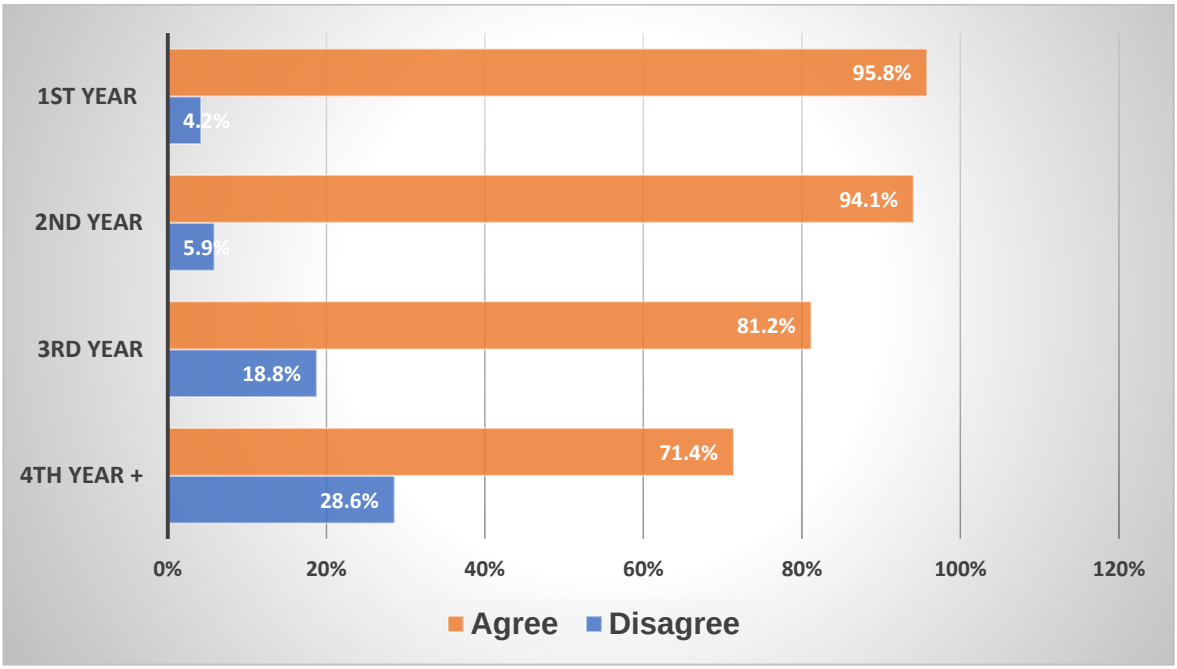
Age: Regardless of their age, the majority of students agreed that a PhD should prepare students for employment, however, some differences were apparent. As shown in Figure 27 below, the youngest and older age groups showed most agreement with a slight dip in the intermediate age range. All respondents in the youngest age group (age 21-25 years) (100%) agreed that a PhD should prepare students for employment, but supportiveness for this fell slightly until the middle age group (with 85% of 26-30 year olds agreeing and 80% of 31-35 year olds agreeing). Agreement that a PhD should prepare students for employment increased again from age 36 onwards, with 100% agreeing and 90.9% of those aged 41 and more agreeing with this. Age and views on whether doctorates should prepare for employment are weakly associated and not at all statistically significant (x^2=0.40; p≤.05; V=0.25).

Figure 27: Whether a PhD should prepare students for employment by current PhD students' age groups



Year of study: Although the majority of students, across all years of study, thought that a PhD should prepare students for employment, as shown in Figure 28 below it is apparent that agreement decreases as students progress through their doctorate. Comparing across years of study, 95.8% of 1st year doctoral students agreed that a PhD should prepare students for employment, falling to 94.1% in 2nd year, 81.2% in 3rd year and 71.4% in 4th year. There was only one respondent in 5th or more year category and they agreed. The results were weakly associated and not statistically significant (x^2=0.28; p≤.05; V=0.27).

Figure 28: Whether a PhD should prepare students for employment by current PhD students' year



Students' PhD research methods: The majority of students agreed that a PhD should prepare students for employment, regardless of their own doctoral research methods. However, some differences in strength of opinion, were notable with all of those using primarily quantitative methods agreeing, falling to 93.8% of those using mixed methods and 86.5% of those using primarily qualitative methods. The results were weakly associated and not statistically significant (x^2=0.40; p≤.05; V=0.22).

7.2.1.2 Employed PhD graduate questionnaire

The vast majority of employed doctoral graduates agreed that a PhD should prepare students for employment; 92.7% agreed (38 / 41) and 7.3% (3 / 41) disagreed. Interestingly, the percentage

agreeing with this is slightly higher than current PhD students, 89.2% compared with 92.7%. This may reflect the increased value placed on being prepared for work and gaining employment-relevant skills during the doctorate by those who are now in employment, as these are required to successfully carry out their job roles.

7.2.1.3 Student walking interview and video diary findings

The students consulted via the walking interviews were asked what they viewed as the purpose of a PhD, should it be carried with the perspective of gaining future employment, within or beyond the academy or is study purely for the sake of gaining knowledge and / or providing an original contribution to a field of study a more appropriate framing of the doctorate.

Relatively few qualitative research student participants expressed views on this. Most who articulated an opinion felt that a PhD should prepare for employment, at least to some extent, by enhancing professional research skills. As can be seen towards the end of this section below, this was true even for some students such as Kenny who considered that the purpose of doctorates should additionally be imparting pure academic knowledge devoid of over-preoccupation with subsequent wealth.

Regarding doctoral employment-preparation narratives, Fiona perceived broad research training during her Masters as useful in providing knowledge on a range of methods as well harnessing an ability to weigh up the relative suitability of methods. She mentally processed a link between this skill and what would be expected in entry level research employment:

“Going forward into a career, that's really useful, as in an entry level job you will be expected to know about all the different methods that are out there. Be trained in how to use them, know the pros and cons, know when it's appropriate to use each one.” (Fiona, M)

Moreover, Charlotte conveyed during her walking interview that postdoctoral researchers should have both quantitative and qualitative methodological skills to do their job and that PhDs should teach these:

“If you want to be a researcher then there are going to be times when you’re going to need to use both quantitative and qualitative methods.” (Charlotte, PhD)

Dual purposes of doctorates were outlined by Kenny and Leah. Kenny articulated that the doctorate should both be for the purity of academic study rather than what he conceptualised as

an over-focus on remuneration, yet later expressed in his interview that PhDs should facilitate acquiring teaching experience:

“I think that it’s just academia in general, that should be the main purpose. That still should always be the goal of academia, it shouldn’t just be ‘oh you get a degree and then you get money, money, money.” (Kenny, PhD)

However, Kenny also viewed that PhDs should prepare students for teaching employment, if that is what they would like to do after their doctorate. He expressed that Edinburgh university achieved this more successfully than his experience of institutions in Belgium:

Me: “Do you think a PhD should prepare postgraduates for employment whatever that may be later on?
Kenny: I think it should. If I compare this PhD and the way they frame it and then looking PhDs in Belgium, what they do there is just they give you research. They don't prepare you teaching-wise, you don't do anything. And then after four or five years you're done. If you don't have a position, well tough luck and they just toss you out. I think here if you get a sense of ‘well this is where I want to go’ [into academic teaching] you can get the resources and the means to pursue that. So that's helpful for preparing you just in case. Preparing you to get prepared for what you want to do.” (Kenny, PhD)

Similarly, Leah felt that a PhD has a dual purpose; to produce useful research via an original contribution to knowledge and to develop students as skilled researchers, fit for future employment:

“The purpose in my head of what the PhD is one, to produce good research, to produce good, new, insightful research information on a topic. And the other half is also to create quite a skilled researcher. OK so you want to produce something that's quite concrete, that is written down. This is what we know about something because the research has been done. But also someone that can continue on doing other projects, because they're well versed in their ability to do research.” (Leah, PhD)

The final part of Leah’s view above expresses a view that doctoral students should be able to apply their skills more widely beyond their PhD topic due to wider methodological expertise, and synergises with the overall intention of the ESRC guidelines of broader applicability.

7.2.1.4 Expert interview findings

Turning now to the views of experts on whether the purpose of doctorates should be employment preparation or adding valuable and original knowledge to a particular field. Experts' views were split between those who conceptualised the purpose of social science doctorates as primarily an original contribution to knowledge and those who felt it should generate both knowledge and researcher skills equally.

7.2.1.4.1 Original contribution to knowledge

Interestingly, and somewhat marking a deviation from the direction taken by the ESRC in proposing that social science PhDs should be primarily training and skills-focused, some key individuals felt that the doctorate should remain principally an original contribution to knowledge:

"It's a tricky thing. I think it should be a contribution to knowledge." (Expert 1)

"I would say the priorities in social sciences PhDs should be first and foremost an original contribution to knowledge. That's the most important thing." (Expert 2)

Expert 3 added to the debate by acknowledging that although adding to knowledge in an original way via doctorates remains important, as the body of empirical knowledge increases, complete originality becomes increasingly difficult to achieve:

[On whether a PhD is changing from the focus being an original contribution to research to something different]

"Possibly, it could well be inevitable. I think there's a good reason for that, and the reason is it's more difficult to do a completely original PhD these days. If you do something like the ethnography of the Lithuanian zookeepers or something, maybe you can find something original to say. But it starts to become a bit exotic.. … PhDs that are done in the UK in social science…Most of them are fairly traditional still. But I'm not sure where that's going to go." (Expert 3)

7.2.1.4.2 Original contribution and skills development

Echoing the perspective expressed by some of the student interviewees above, one expert felt that the doctorate's purpose occupied some degree of middle ground. They viewed the PhD as being partly an original contribution to research, or at least that there should be cognisance that the

research produced must met the standard of doctoral work, yet that the purpose extended beyond this to postgraduates gaining suitable research skills:

“I think there’s been a sense of a move away from the PhD only being about doing an original piece of research. I think that it is right that it is still about doing a piece of research that bears the postgraduate intellectual mark, so it is an original piece of research. But a recognition that the PhD is more than that, partly because of where students go afterwards. And partly because of the focus on the need for a certain type of skill.” (Expert 4)

Expert 4 later added in their interview a further remark on the importance of broad training and methods knowledge being afforded as part of the doctorate:

“The institutions themselves have taken historically a much more direct view of what the role of a PhD is, that it isn’t just a lone student working for 3 years with his or her supervisors. It is about providing a wider range of training and a wider range of tools people can use.” (Expert 4)

7.2.1.4.3 Variation in PhD purpose between social and natural sciences

Deepening the discussion of doctoral purpose still further, several experts commented that this purpose can vary depending on the social science discipline as well as between completely different disciplines not within the social sciences. One of the experts also especially remarked upon differences between natural sciences / STEM and social science PhDs in terms of their purpose and execution.

“The biggest thing I’d say is that the disciplinary cultures, and that’s absolutely clear in all research literature, the notion of what a PhD is entirely different in STEM disciplines.” (Expert 2)

Expert 1 argued that a PhD in sciences and STEM disciplines was typically set up in advance for the student, rather than being on a topic chosen by them as tends to be the case in the social sciences, and formed part of a bigger team on a programme of work:

“It’s going to sound like a stereotype, but it actually is sort of true. In the STEM disciplines the PhD is a very small building block in a much bigger wall. And the big thing there is that the student doesn’t just do the project, there’s a studentship that is to do a piece of work as part of the ongoing programme of that lab.”

Adding to this, expert 1 opined that is not meaningful to discuss doctoral purpose without reference to which discipline the PhD sits within and the 'disciplinary culture':

"It's a really different thing, [in the] social sciences the student has to choose the topic, and they have to be fired up about it. And it's theirs only. … 'is it an original contribution to research, or preparing students for employment or something else'? I don't think that's a meaningful question unless one takes notice of the disciplinary culture." (Expert 1)

Similarly, expert 2 viewed social science and (natural) science PhDs as having important contrasts, such as the science PhD topic being determined in advance by the supervisor. The expert also mentions the CASE (previously called Collaborative Awards in Science and Engineering) studentships, discussed in the literature review chapter when doctoral training provision models and infrastructure was considered. CASE were PhD studentships collaboratively funded by a research council and an employment organisation, intended to provide the student with some employment-related / industry input.

It should be noted that collaborative studentships, with a non-academic partner organisation, are again encouraged by the ESRC either including some or all of: co-funding, knowledge-exchange, user engagement and / or internships / work placements ESRC, 2015) but are no longer called 'CASE' in the social sciences. The ESRC expects 30% minimum of doctoral students in DTPs to have some degree of non-academic partner collaboration (ibid p. 19).

[On the difference between social science and science PhDs]

Interviewee:" It is [very different], although there's a bit of an overlap. The science PhD, it's the supervisor's project that you work on.

Me: You're in a team, more?

Interviewee: Usually. And this is why a supervisor gets their name on your application because they designed the project. There were things like the old CASE awards." (Expert 2)

Expert 1 stated that in STEM disciplines, the topic of the doctoral research becomes quickly out-of-date and is primarily useful for post-doctoral employment soon after the PhD, in terms of learning relevant skills. This contrasts with what the interviewee viewed as being the case for social science PhDs, whereby the topic a doctoral student conducts their PhD on, may well continue to be one of their primary research interests throughout their academic / research career:

"So a classic person who was in our study [referring to a particular research study they conducted] X said, 'I wasn't interested in the genetics of the cow when I took the studentship, but I am now.'… And for social scientists that sounds like that's not a proper PhD at all, that doesn't sound original, owned by the student. But that's social science and humanities projects, because in the sciences that's how you work. And your PhD is a very small building block and within 2 or 3 years, it's stale potatoes, it's old news. It doesn't provide you with your whole career. It skills you up to be a postdoc…That's quite, quite different from arts and social sciences, where the topic of your PhD may well still be fuelling your career 25 years later." (Expert 1)

7.3 Previous PhD models

Of crucial importance, as was identified in the relevant literature, is additionally the way in which the doctoral training infrastructure and social science PhDs in general have evolved over time and how this has been shaped by factors such as changes in employment, HE massification, shifts in the interplay between academic, the economy and work and the increasingly monitoring and influential role of research councils such as the ESRC on training agendas (Tomlinson, 2012; Budd *et al.*, 2018). This clearly indicates the socially constructed nature of the doctorate and research training.

The way in which social science PhDs were previously organised and structured before the more recent ESRC guidelines in 2009 and 2015 was also discussed during the interviews with key individuals.

Commenting on the length of time that PhDs took, and whether they included methods training or not, expert 2 remarked that typically students took longer to do a PhD in the past, at times even as long as 7 years. Importantly the interviewee indirectly referred to relatively recent changes by the ESRC to improve the timeliness of PhD submission rates, which was not the case in the past. Universities can be sanctioned by the ESRC if they do not meet the threshold of a sufficient number doctoral submissions within 4 years, by the possibility of studentship funding being withdrawn, with the penalty being applied at the end of 4 years:

Interviewee: It's very congested for UK [PhD] students because you've got to get it out in 3 years…Whereas I can well remember people taking 7 years to do a PhD."

Me: In the past, they used to take a lot longer?

Interviewee: Yeah. Not necessarily funded, technically the funding was only for 3 years. But there was no penalty attached if people took [more than] 4 years. And people used to do part-time teaching." (Expert 2)

Expert 1 discussed the length of time anticipated for students to complete their PhD, and for which funding is granted for those fortunate enough to be in receipt of. Although the recommended completion period is 3 years, and up to 4 years maximum which is the same as identified by expert 1, they highlighted the paucity of research training in past doctorates, with the inference being that this was problematic:

"I mean I've been through the bygone days where you had 3 years to do your PhD, you didn't have to have a Masters and nobody trained you at all." (Expert 1)

7.3.1 Problems with old model of the doctorate

As was outlined in the literature review chapter, literature such as Park (2007) identified that the impetus for changing the social science doctorate had been that questions were raised as to its fitness for purpose and concerns voiced regarding the piecemeal nature of research methods training.

Key individuals foregrounded various ways in which the old-style social science doctorate had been problematic. Resonating with the literature, critical issues were the lack of methods training and also isolation, which was still identified more recently as a matter of concern for PhD students in the literature (Deem and Brehony, 2000; Budd *et al.*, 2018)

"There is no doubt at all that in the days before the Winfield reforms, there were people getting doctorates, and people dropping out of doctorates, who reported that problems with finding out about methods and using them properly were one of the biggest barriers they had…And isolation which is of course, an old problem." (Expert 1)

Being restricted in the methodological spectrum was demonstrated, according to expert 1, by their perception that many social scientists continue solely to use their doctoral research methods throughout their research career:

“I’m absolutely sure that the fact that most social scientists only use the methods that they learned to use to get their own doctorate, meant that the quality of knowledge about research methods was rather low.” (Expert 1)

Extending beyond the typical focus on doctoral research methods training as employment preparation for research careers, expert 1 also pinpointed the limitations of an exclusively theoretical PhD in the 1980s for those gaining a subsequent lectureship. A theoretical PhD would not imbue the student with the requisite skills to be able to effectively teach research methods and supervise PhD students who were using a range of methods as a lecturer:

“If you went back pre-Winfield, let’s just take sociology for a minute. Somebody could do an entirely theoretical PhD, which is fine, but if they then want to get a lectureship…unless they were lucky to get a lectureship just teaching theory, they actually would not have done postgraduate level [research / research / training]. They would have no basis for reading empirical work as a postgraduate let alone…supervising any…If you’re going to supervise doctoral students, unless all your doctoral students are going to be pure theorists, if you’ve never done a piece of empirical work how are you going to do that?” (Expert 1)

Supporting the literature on paradigm shifts in the nature of postdoctoral employment (Tomlinson, 2012), expert 2 commented that it was far easier to gain a lectureship in the past, and it was not even necessary to have a doctorate to do so:

Interviewee: “I mean I was a senior lecturer before I did a PhD…Because I got a job within LSE.

Me: Because it wasn’t necessary to have a PhD to get a lecturing job…?

Interviewee: Yeah it wasn’t important.” (Expert 2)

“Bear in mind I was [part of] the lucky generation. Not least in the sense of being able to get out with a stonking great big pension. But in a generation where at the age of 26, I had a permanent job, which in principle I could only be dismissed [from] for gross immoral conduct. It was a very different, different world.” (Expert 2)

7.4 Effectiveness of PhD research methods training for employment

Having examined whether questionnaire and interview respondents thought a doctorate *should* prepare students for later employment, I will now turn to whether questionnaire respondents felt *it actually does.*

7.4.1 Current PhD students' questionnaire

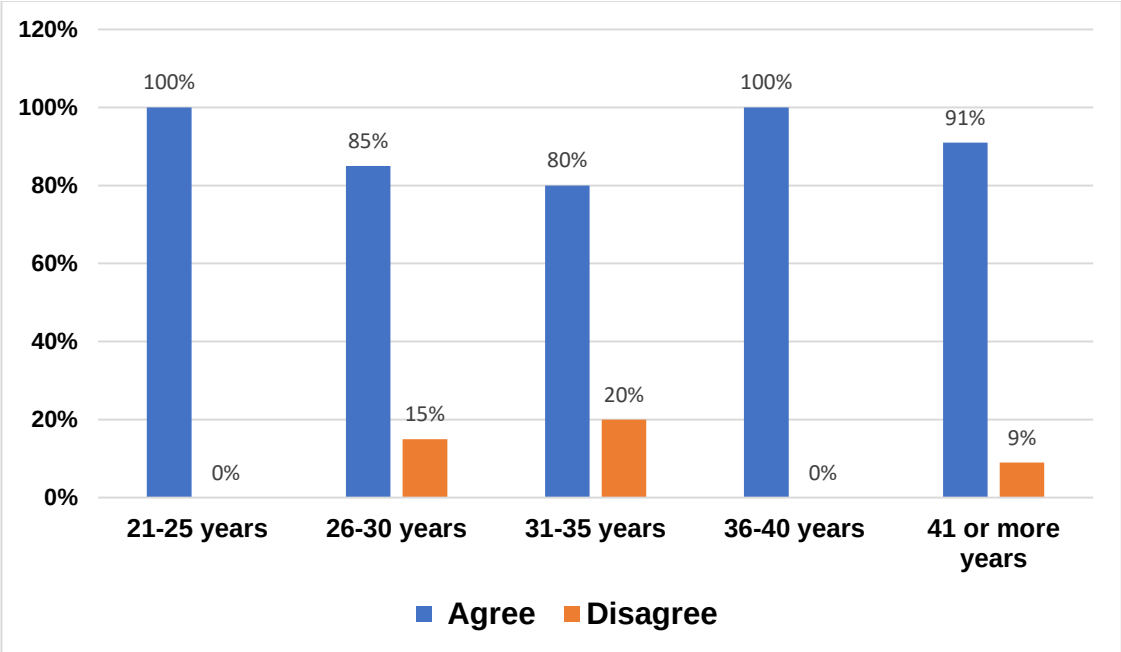
Respondents were asked the extent to which they agreed that research methods training courses during their PhD were likely to be effective preparation for employment, on a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree' with strongly agree and agree being combined to form 'agree' and strongly disagree and disagree being combined to form 'disagree'.

Nearly nine-tenths (88.9%) agreed that a PhD is effective preparation for employment and only just over one-tenth disagreed (11.1%).

Gender: Both genders overall agreed that PhD research methods training was likely effective preparation for later employment, although males were more in agreement than females with this. 93.2% of males agreed that a PhD is effective employment preparation compared with 79% of females. Gender and views on whether doctorates are effective preparation for employment were weakly associated but statistically significant at the 10% level (x^2=0.09; p≤0.1; V=0.24).

Age: Difference in students' views according to their age was notable in the sample, with the youngest age group of respondents having more positive views of how effective doctoral research methods training was for employment, with this decreasing until the middle age group (31-35 years). There was then a spike increase in the 36-40 year age group who again showed very positive views on employment preparation, as did the oldest age group (41 years and more); Figure 29 below shows the exact percentages for each age group. Again, however, it should be noted that the raw counts in some of the cells were small, for example 3 respondents in the strongly disagree / disagree age 26-30 years category, thus too much emphasis cannot be placed on differences in views across ages. Age and views on whether doctorates prepare for employment are weakly associated and not at all statistically significant (x^2=0.40; p≤.05; V=0.25).

Figure 29: Current PhD students' views PhD employment preparation effectiveness by age



Year of study: Some difference in views of the effectiveness of PhD research methods training was observable by students' year of doctoral study. More positive attitudes about this were notable among the 1st year students (with 88.4% agreeing that PhD methods training effectively prepares for employment) than other years of doctoral study. Positive views briefly dip in 2nd year (64% agreeing) before climbing again in 3rd year although not to the level of agreement with effectiveness expressed in 1st year (with 68.4% agreeing). 4th year and beyond students showed views broadly comparable to 2nd year students (with 66.6% agreeing).

These findings are perhaps surprising and go against what might have been expected, as a previous study (Orton-Johnson and Webb, 2011) noted more positive views of doctoral research methods training among PhD students nearing the end of their studies. My findings on this, however, were weakly associated and not statistically significant (x^2=0.29; p≤.05; V=0.24).

Students' PhD research methods: Differences were notable in whether students felt doctoral research methods training effectively prepared for employment by which methods they used for their own PhD research. Those using primarily qualitative methods showed slightly less agreement about the effectiveness of such training for employment than those using primarily quantitative or mixed methods, however, the majority in all categories agreed that the training was effective.

Of students using primarily qualitative methods, 86.5% agreed and 13.5% disagreed, for those using quantitative methods 100% agreed and those using mixed methods 93.8% agreed and 6.2% disagreed. The results were weakly associated and not statistically significant (x^2=0.34; p≤.05; V=0.22).

7.4.1.1 Whether learning statistics useful for employment

Current PhD students were also asked specifically whether they thought learning statistics would be a useful skill for employment. Two-thirds (67.3%) agreed that it is and one-third (32.7%) disagreed.

Before considering this finding alongside those in the literature, it should be noted that empirical evidence on views of perceived usefulness of statistical skills for employment has been largely confined to undergraduate students. Thus, although both Chamberlain, Hillier and Signoretta (2015) and Williams, Payne and Sloane (2016a) investigated the views of undergraduate social science students, my findings on postgraduates would seem to occupy a position somewhere in the middle of these two. Chamberlain, Hillier and Signoretta (2015) found that just over half of the students they consulted (52%) deemed that employers seek statistical skills and just under a tenth (8%) thought that having statistical analysis skills will likely improve their job prospects. The percentage of students agreeing 'good numeric skills will help me get a job' in Williams' *et al's* 2013 study was far higher at 80% (Williams, Payne and Sloan, 2016a). My research findings on postgraduate students occupying the middle ground with two-thirds (67.3%) agreeing that learning statistics is important for later employment. There are manifold reasons for these differences. It is possible that views vary between undergraduate students and postgraduate students on the importance of statistics for employment, although it is clear both student types do see this type of skill as valuable. Other explanations are that because the samples were from different locations around the UK, the variation is due to that and / or to the slightly different timeframes of data collection with my research being the most recent. Finally, although each study collected data on social science students, there was some variation in the disciplines that views were gathered from.

7.4.2 PhD research methods training employment effectiveness: Employed PhD graduate questionnaire

Employed former PhD students were asked the extent to which they agreed that their doctoral research methods training had been effective employment preparation. As shown in Table 11 below, the majority of 54% agreed that it had been.

Table 11: Employed PhD graduates: views effectiveness of PhD methods training for employment	
	% (count)
Strongly Agree	10% (5)
Agree	44% (22)
Neutral	32% (16)
Disagree	12% (6)
Strongly disagree	2% (1)
Total	**100% (50)**

With neutral position chosen by 16 respondents removed, recalculated proportions are: 79.4% (27 / 34) agreed and 20.6% (7 / 34) disagreed. Comparing these findings with the current doctoral students, it is apparent that employed graduates are less convinced of the effectiveness of the doctorate in terms of employment preparation than current PhD students. Nine-tenths (88.9%) of current PhD students agreed that a PhD is effective preparation for employment compared with 79.4% of employed doctoral graduates. This may indicate that employed graduates have found their PhD research methods training less useful than they had anticipated it to be whilst studying.

7.4.3 PhD research methods training employment effectiveness: Walking interview findings

Having presented the students' views on whether doctorates prepare for employment from the questionnaire data which was broadly positive, findings from the walking interviews and video diaries with students will now be assessed. Some positive findings from the qualitative data were discussed earlier about links between research methods training and employment preparation on p.147. By contrast, however, a relatively strong set of views emerged from students participating in the walking interviews on the ways that their Masters and PhD degrees had failed to prime them for paid work later on. Particular issues identified by some students were that postgraduate

degrees did not equip students with some of the ESRC's anticipated 'core researcher development skills' such as: teamworking skills, event / conference organisation, how to plan and deliver an academic lecture and design a course, or facilitate what is required to publish their research in academic journals including issues of lack of time to do this with all that must be achieved during a doctorate. It was also perceived by some that their PhD had not imbued them with adequate statistical skills for successfully gaining a job using quantitative techniques.

These views are potentially concerning to those developing the HE doctoral infrastructure given that a very specific aim of the ESRC guidelines is that social science doctoral students should emerge with both 'general' and 'transferable' skills, as well as highly developed research skills (ESRC 2005; 2009; 2015). The general 'core researcher development skills' highlighted by the ESRC include: bibliographic; computing; teaching; engaging with research users and learning about the ethics and legal aspects of research. Moreover, anticipated transferable 'core researcher development skills' incorporate: communication (including dissemination); networking; leadership (also learning about the funding process); managing relationships and research management.

7.4.3.1 Lack of 'core researcher development skills' preparation for employment

Lack of teamworking preparation: Nathan felt that he had little opportunity to connect with other students who are also interested in particular methods, as the course student numbers were so large, and students are from various disciplinary areas. Moreover, he viewed the way that the courses are structured and delivered does not facilitate networking with other students or team working, which he felt are important skills for later employment. Crucially Nathan also identifies a lack of networking and postgraduate community-building opportunities at university especially those in his own discipline, a perennial problem which also emerged in the literature (Deem and Brehony, 2000; Hockey, 1994)

"About the courses' organisation in a wider way, I think they're very individualistic. In a way it's good because it makes the students work on how to discipline themselves to study. But in an actual job, I have been working lots with teams and I don't think that we build teamwork in these in these courses. We don't have that opportunity in 'Data Collection' or in 'CQDA'. And the biggest critique on my programme would be that there is no way of building networks with other students from my programme, because I never see them. I just have a class with one hundred students in these two courses and most of them don't have the same interest as I have because I'm studying social research they are doing something else. So I would like to get to know more people that are doing

social research and are interested in different methods so I can share my experience and know more about them, build networks and know better how to work in teams. That's what I think should be better in both courses." (Nathan, M)

Lack event organisation and academic lecturing preparation: Denise articulated that she felt other job roles and experience she previously gathered better prepared her for employment than her PhD has. She viewed that students are under-prepared during their doctorate in some key employment skills related to an academic position such as course design and lecturing:

"I went to this IAD (Institute for Academic Development) workshop where we were looking at an advert for an early career research position. There were all these different things, and I feel like my University of Edinburgh experience has not prepared me at all for any of this. If anything, my hobbies doing stuff with EUSA has done more to prepare me for a job of some sort…But I feel as far as academically, I've had a couple of tutoring positions, but I've never had the opportunity to design a course. I wouldn't know the first thing about designing a course. They don't tell you how to deliver lectures, they don't tell you how to design a lecture. There's absolutely nothing on this." (Denise, PhD)

Insufficient time to publish or attend conferences: The need to publish in terms of attaining 'transferable' skills during a PhD and also being an important aspect by which potential academic job candidates are judged, weighed heavily on some students' minds. Denise described her worries around having time to publish and expressed not feeling sufficiently supported in this:

"Because I'm doing inductive sort of work I don't really have a lot to publish, and I'm not going to have a lot to publish until after I complete my PhD. And it's very difficult to get postdocs even unless you have [published]… I feel like I didn't have the support or time to publish or to go to as many conferences as I would have liked to." (Denise, PhD)

Marion echoes this point about the importance of publications being what people with PhDs are judged on in relation to securing academic posts. High quality methods training is emphasised during the doctorate yet this will not necessarily gain someone with a doctorate an academic role:

"So what's the pay off between the publications versus the general introductory courses you have? Well, actually your publications will mean more on your CV. So if you can't do all of it, what do you prioritise? In the crude direction of what's going to get you your next job, it's really the publications

and nothing else, publications and a thesis. Nothing else counts, does it? That's not the way you're evaluated." (Marion, PhD)

7.4.4 Inadequate statistical preparation for employment – quantitative skills deficit: Students' views

Several students outlined a concern that although they had undertaken some statistics and quantitative methods training during their doctorate, this would be insufficient to enable them to gain postdoctoral roles using statistical methods, even in part. This resonates with findings from the academic literature and higher education policy documents that a quantitative skills deficit exists in the UK among university students (Williams, Payne and Sloan, 2016a; British Academy, 2012; Chamberlain, Hillier and Signoretta, 2015; MacInnes, 2009; ESRC 2005; ESRC 2009; ESRC, 2015; Lenihan and Witherspoon, 2018).

Denise critiqued how far some of the core methods courses had truly prepared her for later employment. She felt that CQDA in particular did not go far enough in imbuing her with the quantitative skills that she would need in order to get a Research Assistant job using quantitative methods. Denise even expressed a feeling of inadequacy in not having a sufficient level of quantitative skills for these types of roles:

"I'm really put off when I look at applications even for Research Assistant, they want you to have experience of this particular programme. I see a lot of things for data management and that's very lacking, I don't have that experience. I took one quantitative course and it helps me to maybe read articles and maybe if I wanted to do a quantitative study in the future I could revisit it. But I wouldn't feel comfortable just going into working as a Research Assistant and trying to crunch some numbers. I don't know how to use databases. I feel very inadequate." (Denise, PhD)

Megan echoed this describing an occasion where she had applied for a post involving statistical analysis but had been unsuccessful in gaining this position competing against candidates who had used statistics during their doctoral research:

"I applied for a research position using statistics because there wasn't many related to my PhD. I didn't get that post. I think because they really needed people more specialist than me. So I did the interview; on the research side I knew enough but my statistics skills were not as good

compared to people who have finished their PhD completely using statistics and were able to analyse data on that." (Megan, PhD)

7.4.5 Experts' views: quantitative skills deficit

The next section explores view from experts on their perception of a quantitative skills deficit. This can be related to the idea of broad methods training 'levelling the playing field' elucidated by the student interviewees discussed in the first results chapter (chapter 4) as it helps postgraduate students to attain a reasonably similar base level of knowledge regardless of their prior methods learning background. One of the experts interviewed, who was a specialist in teaching quantitative research methods, commented that many doctoral students lack quantitative research skills when they first commence their PhD. He had noted this when he ran an 'Introduction to quantitative research for qualitative researchers' course and was stunned at the number of PhD students wishing to attend it. This indicated that the students felt their quantitative skills were lacking and that they needed to improve their competency in these skills and had explicitly sought out further training on this:

"…A colleague of mine and I a couple of weeks ago delivered a course for NCRM. It was 'Quantitative research for qualitative researchers'. And it was full, it was really popular and it's going to be repeated. Now that, to my mind, much of what we were doing should have been done within the DTCs, because these were mostly doctoral students that we had. If it had been professionals, for example, then that would have been perfectly understandable. You know people working as researchers in the workplace, that would have been perfectly understandable. So…there are holes in which training is falling through, I think." (Expert interview 3)

The expert went on to express further concern that the Masters level training had not taught the doctoral students quantitative methods sufficiently well, as they felt the need to study such an introductory quantitative methods course:

"I think that raises all sorts of questions about 'well what on earth were they doing in their Masters?' This was really quite a basic course. …those students most of them had done their 1 [Masters], and then they'd start on their PhDs and realise that they either needed to work with relatively basic quantitative data, or understand quantitative data or indeed actually do quantitative research themselves. And they felt they were under-equipped to do that." (Expert interview 3)

Another expert voiced concerns about the lack of quantitative data skills among UK academics:

“It is always a lack of number and data skills. And it always worries me for a variety of reasons. I want to stress it isn’t saying that number and data skills are primary or that everybody needs to have the same level of skills.” (Expert 4)

Expert 4’s opinion about the lack of quantitative skills deepened into a point on how the best research takes account of structural factors in society as well as getting behind why people think as they do. The role of quantitative data in unpacking this can be highly relevant to those who primarily utilise qualitative techniques. The expert cautions that some qualitative researchers have realised this yet unfortunately many did not and mistrusted, or did not fully appreciate, the role of quantitative methods and data:

“But you saw too many really bright, young people who had a very shallow appreciation of how their work fitted in to a broader field. Who had a shallow, knee-jerk critique, because when they had been taught about methods for surveys, they’d been taught they are inherently misleading and they can never do what qualitative [research does] so why do them? They couldn’t look at a table or a description of the population of the people they were trying to cover. They weren’t always aware of sophisticated discussions about structural causality… We know from every piece of numerical analysis carried out that it’s really important to understand how people think and what they think. But it’s also important to realise that we’re caught up in structural relationships that we may not always be distinctly aware of. And the very best qualitative researchers of course understand that and can embed it in that wider discussion. And yet you saw too many who didn’t, who took it at face value.” (Expert 4)

Two experts expressed disquiet that there was insufficient numbers-related training for some social science disciplines at undergraduate and even postgraduate level, specifically politics students (mentioned by both participants) and sociology students (mentioned by one):

“The fear I might have about politics or sociology students, too many of them don’t do anything involving numbers or data at an undergraduate or postgraduate level.” (Expert 4)

“But the discipline that actually worries me a bit is actually politics, because on the whole undergraduate courses in politics have no research methods in them. And it’s quite difficult to have politics students in an MRes because there are often politics staff who can’t be part of a teaching team because they don’t do methods. And also the range of methods used in politics is not very

great, so it's therefore very difficult to include politics students because there's not a big literature, there aren't journals of political methods….And every politics professor that I've ever known who turns up at ESRC DTC type meetings says that's actually a bit of a problem because that's just not been a discipline that uses a lovely wide range of methods... And I think therefore one slight problem I bet all the DTC directors may be finding that if they've got a methods deficit in a discipline, it might be in politics." (Expert 1)

Some students consulted also noted a lack of quantitative skills among their peers which meant that these skills became a useful commodity due to their relative rarity:

"I hope that I'll be able to do some more quantitative methods training courses, maybe during the summer when I'm not teaching. But again, this is partly thinking about the fact that having such skills is valued. Not everyone has them." (Phoebe, PhD)

The quotation from the student Phoebe above also supports the recommendation that I make in chapter 8 of running refresher 'broad' methods training for PhD students as they near completion of their doctorate and moving towards seeking employment.

7.4.5.1 Past quantitative skills deficit

One of the experts also referred to the fact that there has been a lack of quantitative skills in the UK in the past also and that this is not solely a contemporary issue:

"Here in the United Kingdom, it was very clear to me when I came here to LSE (London School of Economics) that I did have more statistics background than most of the people doing my general sociology Masters." (Expert 4)

The expert noted that having quantitative skills placed them at a competitive advantage in the UK within the job market:

"My original plan had been to go back to the US and do a PhD and get an academic job. But I was out looking for work and it was just very clear to me that I would have skills using the kind of statistical analyses that were in scarce supply then in the United Kingdom." (Expert 4)

7.5 Recency and recall issues of quantitative training: reinforcing 'quantitative skills deficit'

The ESRC postgraduate training and development 2015 guidelines state that postgraduate training should not be solely undertaken during the Masters but instead that methods training should be carried out throughout the PhD to most usefully feed in to what the student needs to learn and know at key points:

'The ability to provide training throughout the PhD programme creates greater flexibility in the timing of training delivery. Rather than being frontloaded into a Master's year, it can be spread out across the PhD programme, matching delivery more closely to actual needs.' (ibid p. 5).

Two key issues emerge in the data, recency of training and thus challenges in recalling it when required for many students participating in the qualitative research. Part of the problem of the typical frontloading of methods training into the Masters or 1st year of the PhD is that much knowledge has been forgotten as the student approaches the end of their doctorate and is preparing to seek employment. Quantitative methods training in particular has been identified as being problematic to call to mind if not recently undertaken and, if not refreshed in circumstances when some time has elapsed since studying such methods.

Exacerbating the issue felt by some students that the quantitative training had been overly introductory and basic to be able to gain research roles requiring quantitative skills previously outlined in results chapter 4, were matters of the timing, recency and recall of such training within the doctoral programme.

7.5.1 Students' views

Many PhD students outlined during their walking interviews their fears that there is a 'use it or lose it' quality to quantitative methods. Once a student stops learning and using these types of methods, they are quickly forgotten:

"I feel that methods training is like learning a language, if you don't practice it, you don't do it then you don't retain it…. You can learn the rudimentary aspect of the skill…but you yourself do not become skilled unless you actually practice it." (Leah, PhD)

“If you don’t practice numbers then you forget them. The first couple of months were hard to be honest, but then once you get back into this rhythm of thinking with numbers and thinking statistically, things become a bit easier.” (Barry, PhD)

“I’ve forgotten it all by now because I haven’t used it. I think if I’d maybe looked back over a few notes or maybe retook [the course] if I wanted to use quantitative then I think I could understand it better second time around. Maybe it would stick a little bit more.” (Denise, PhD)

Consequently, a potential solution to the problems of recency and recall could be to move the timing of broad training, especially quantitative, to the latter stages of the doctorate, to most effectively prepare for employment, or at least offer an option of such training at the latter stages, perhaps as a quick refresher, as well as earlier for those students that require this. This will be discussed later in this thesis, when a proposal around modifying the timing of such training will be presented in chapter 8.

7.5.2 Experts’ views

One of the experts also discussed students’ ability to recall quantitative methods learning, not specifically for employment, but at any later stage when re-engaging with quantitative methods. They argued that quantitative methods are sometimes taught focusing on enabling students to pass the assessments, rather than truly retain the knowledge and learn the methods in a more in-depth way:

“There’s a kind of a collusion between the students who don’t really want to do it, and the staff who’ve got to get the students through the exams at the end of the semester. So I’m not saying that standards have dropped, but…quite a lot of the time, it’s assessment-led, let’s get these students through these exams. I think that’s a problem at the heart of it. Now, does that have an effect when they’re exposed to it. Use it or lose it [regarding statistics learning / techniques]? I think to some extent that’s true, but I don’t think it’s wholly the case. “(Expert 3)

Expert 1 articulated that if methods skills are learned early on during the PhD and / or during the Masters year, then recall can be an issue when it comes to attempting to apply such skills in employment:

“[In terms of] forgetting methods skills if they’re not used, I think that obviously people can get rusty. “(Expert 1)

“The next problem possibly arises after someone’s [nearly] got their doctorate and they’re still writing up and they get a job. You might find yourself getting a job where somebody expects you to know how to do RCTs and although you did it in your M [Masters] you haven’t done it since.” (Expert 1)

Expert 3, however, was of the opinion that having been exposed to the methods in the past at least meant that students had some prior knowledge to draw on, which could then assist subsequent learning in statistics and quantitative methods:

“I think that what sometimes happens is that students will get exposed to quantitative methods and they may not use them. But when a lot of students then… come back to it later a light will go off, ‘Oh year I remember doing something about that. Yeah, we did something like ordinary least squares regression, that was pretty straightforward. Yeah ok so logistic regression is a bit like it, yeah ok.’ So, there’s a kind of familiarity there through exposure.” (Expert 3)

7.6 ‘Future self will thank you’: theme of not knowing what you need at the time

Turning now to a theme which arose in the analysis of the qualitative data, which I have entitled ‘your future self will thank you’. This analytical theme relates to students’ overall views of broad methods training and whether this should be compulsory (presented earlier in results chapters 1 and 2). It is also associated with the discussion above of views on whether a PhD prepares for employment, linking with the question of even though a student undertakes some methods training, if they have forgotten it by the time they need to use it in employment, how successful has that really been in terms of employment preparation?

7.6.1 Students’ views

As was also identified by Orton-Johnson and Webb (2011), students’ views of broad methods training becoming increasingly positive as their PhD unfolds is conceptually linked with students not knowing what they need at the time of studying a particular course. Some of the walking interview and video diary participants expressed an increasing appreciation that they had studied

particular methods courses especially as they neared the time that they would be leaving university to seek employment, even though they did not perceive the value of these courses at the time of studying them. This can be conceptualised as a student's 'future self will thank them' for doing something, which felt unpalatable or irrelevant at the time.

For example, Marion did not enjoy studying CQDA at the time, however, she later saw the value in principle of undertaking such a course:

"Having done them [the core methods courses] and looking back I think there is a purpose in doing them, although I do think they could be improved, like [how] to teach statistical concepts to people who don't understand them…But I think that in principle it [core research methods training] is useful*. Looking back, and also looking forward, I think they're a good thing. So from that point of view I'm glad I've done them. Although I don't think I found doing the course that grea*t." (Marion, PhD)

Marion identified two key benefits to having a broad methods knowledge: firstly, to be in a better position to reflect on an appropriate research design and why particular methodological choices have been made (from an informed position about the range of available methods from which to select) and secondly, to broaden the possible range of methods that could be used in a research career / post doctorate in later employment:

"But when I've done my PhD and if I'm doing a postdoc or doing some research, I might want to use more methods, I may be sick of the methods that I've been using, or be asking a question that really does require different methods. If I've got no grounding at all in any of them, then that doesn't make me at a very useful starting point. So I think there is that longer trajectory, when you think about it on a longer term, that you can identify that there are lots of useful reasons to have some basic introductory knowledge across the methodological spectrum. But then also in the more immediate term in using it to reflect on your methodological choices. So I think there is that more immediate reflexive benefit, which I certainly didn't understand at the time, but I do now that I'm part way through my PhD. I get the purpose of that."

Importantly Marion added:

"But when you're right in the middle of doing something, you don't have the perspective of the times at which you've recognised it's been helpful in the 4 years after that course." (Marion, PhD)

Echoing a similar view to Marion, Megan voiced:

“How do you really know what’s the best for you when you are still a student?” (Megan, PhD)

Aisha also commented on a particular week’s topic in the ‘Research Design’ course which focused on quantitative methods. Although these were not within her current research interests, she acknowledged that she did not know whether this could be useful later on:

“I didn’t find it to be very relevant for my research but I enjoyed the first half of the lecture. It was good for gaining extra knowledge and who knows I might have a liking for quantitative data in future.” (Aisha, PhD)

Initially opposed to studying quantitative methods in the CQDA course, Andrew reconsidered this perspective in light of advice from his supervisor on the potential benefits of this type of knowledge for long-term rather than immediate use:

“I’m not using quantitative actually in my research, so that was a problem for me. I was not interested really in using this. I told my supervisor and what she told me…is that it’s never bad to know something else. So I know more about quantitative research. If in my academic life I eventually want to do something about quantitative, now I will be able to do it. So probably now in the short term, I’m not going to use it, but I don’t know if eventually I will have to use it in a form of research. So I think it’s a good idea that they encourage us to take these kinds of courses.” (Andrew, M)

7.6.2 Expert view

In addition to views from students on how postgraduates’ perspectives on the value of broad methods training can change over time ‘your future self will thank you’, one of the experts raised a number of interesting points in relation to this. One especially important point is that some PhD students only realised the value of quantitative training once employed. The expert also more generally discussed how students’ views on matters can shift.

Reflecting on a specific piece of research evidence, the expert discussed the fact that doctoral students who had used primarily qualitative methods for their PhD research project and were initially opposed to having to study quantitative methods during their doctorate, later recognised the salience of quantitative methods training once in paid subsequent paid employment following their PhD and found they required those skills:

“Let me give you one example of a piece of research that I think certainly influenced the ESRC back in the 2000s, and that was a study of some of the students at the NCRM, some of whom specialised in qualitative research and some of whom did more statistical work. When they asked students who were doing their PhD what they thought about the moves within NCRM in those days to have more compulsory number training, you had virtually to a person having all of the students doing qualitative work saying they really didn’t think they should do it, it wasn’t helpful, they needed more time understanding the craft skills of qualitative research directly. They really felt that they weren’t having enough time to do that. *And then when those same students were re-interviewed a couple of years after they’d graduated and they were working,* some were in academic institutions and some in other settings*.* Virtually to a person *they actually wished they had spent more time in understanding a range of methods in empirical research because to do the work they needed to do, they needed those skills.*” (Expert 4)

Echoing the theme in the literature of an antipathy towards quantitative methods which can begin early on when pupils study maths at school (Williams, Payne and Sloan, 2016a), as well as reinforcing the ‘future self will thank you theme’, as demonstrated in the following two quotations expert 4 highlighted how students’ views on what is important or interesting is mutable:

“What feels uncomfortable at the time, particularly in a world where I’ve said many students going on to do social science Masters and PhD literally have dropped subjects or curricula that are at all stretching with numbers and data when they’re 16, so I appreciate the anxieties that provokes. *But actually it makes you realise that what you feel passionately when you’re in the midst of your training, isn’t always what it looks like something you need later on*.” (Expert 4)

“If you want to encourage *both deep and nimble thinking*, then it’s important to remember that what you choose as your unskilled toolkit at age 16 or 18, 19 or 21 or 34 isn’t always what it will be all your life. And I mean that, not just in terms of methods training but even about issues that you might be interested in.” (Expert 4)

Expert 4 further outlined their view on the mutability of students’ views on methods and also highlighted that education systems should be relatively flexible in order to facilitate this kind of dynamism:

“And students can genuinely change their minds. I’ve kept up with the evaluations of Q-Step and I think it’s very clear that a lot of students came into their Q-Step courses and streams within their departments thinking, ‘well I need to do this for my CV’. Then some of them got really interested

and were very good at it and realised that just because they didn't have 'A' level maths they could still do really interesting and important work. So, we want an education system that allows people to expand [into] different things." (Expert 4)

7.7 Postdoctoral career aspirations and PhD study motivations: questionnaire findings

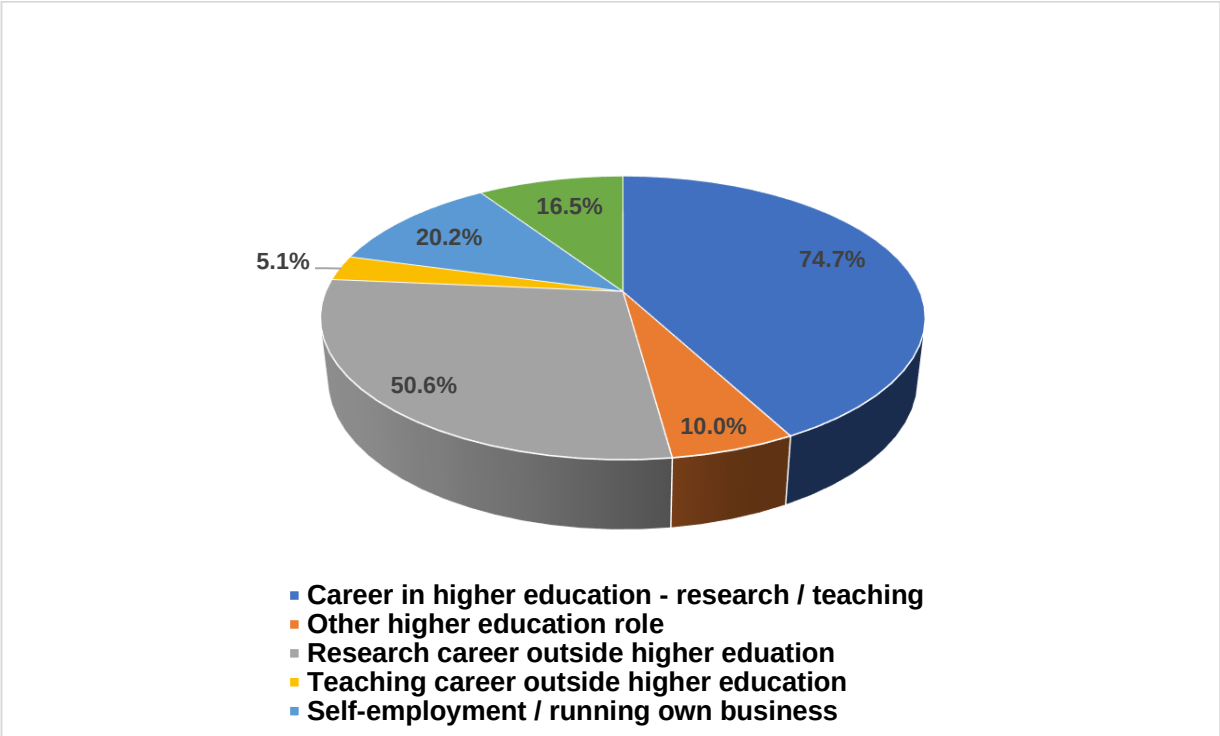
As discussed above, research participants' motivations for studying for a PhD and their postdoctoral career aspirations are clearly linked with each other, especially in circumstances where students were originally instrumentally motivated to engage in doctoral study. The interplay between reasons for wanting to study for a PhD and the kinds of careers PhD students seek after their doctorates shall now be examined. Following this, the potential effects of the kinds employment aspirations on whether they agree with broad methods training will be discussed.

7.7.1 Postdoctoral career aspirations (multiple choice): Current PhD students

Current PhD students were asked what their career aspirations were after they qualified with their PhD. They were permitted to select as many options as they wished from 6 possible responses: a career in higher education (research and / or teaching; a career of another role in higher education; a research career outside higher education; a teaching career outside higher education; Self-employment / running their own business or other. Due to respondents being permitted to select multiple options, it should be noted that the percentages below do not sum to 100%.

Most respondents, three-quarters (74.7%), sought 'a career in higher education - research and / or teaching' (Figure 30). The 2nd most popular answer with just over half (50.6%) of respondents choosing it was 'a research career outside higher education'. 'Other – please specify' (responses not covered by the pre-set options) was chosen by 16.5%. The 'other' career roles cited by respondents included working: in the voluntary sector; in industry; for an NGO; in a private sector hospital / health; as a policy analyst or continuing previous professional roles such as being a social worker or community development officer. A 5th (20.2%) sought 'self-employment / running their own business' and just over 5% (5.06%) chose 'a teaching career outside higher education' as one of their career aspirations.

Figure 30: Current PhD students' postdoctoral career aspirations - multiple responses permitted



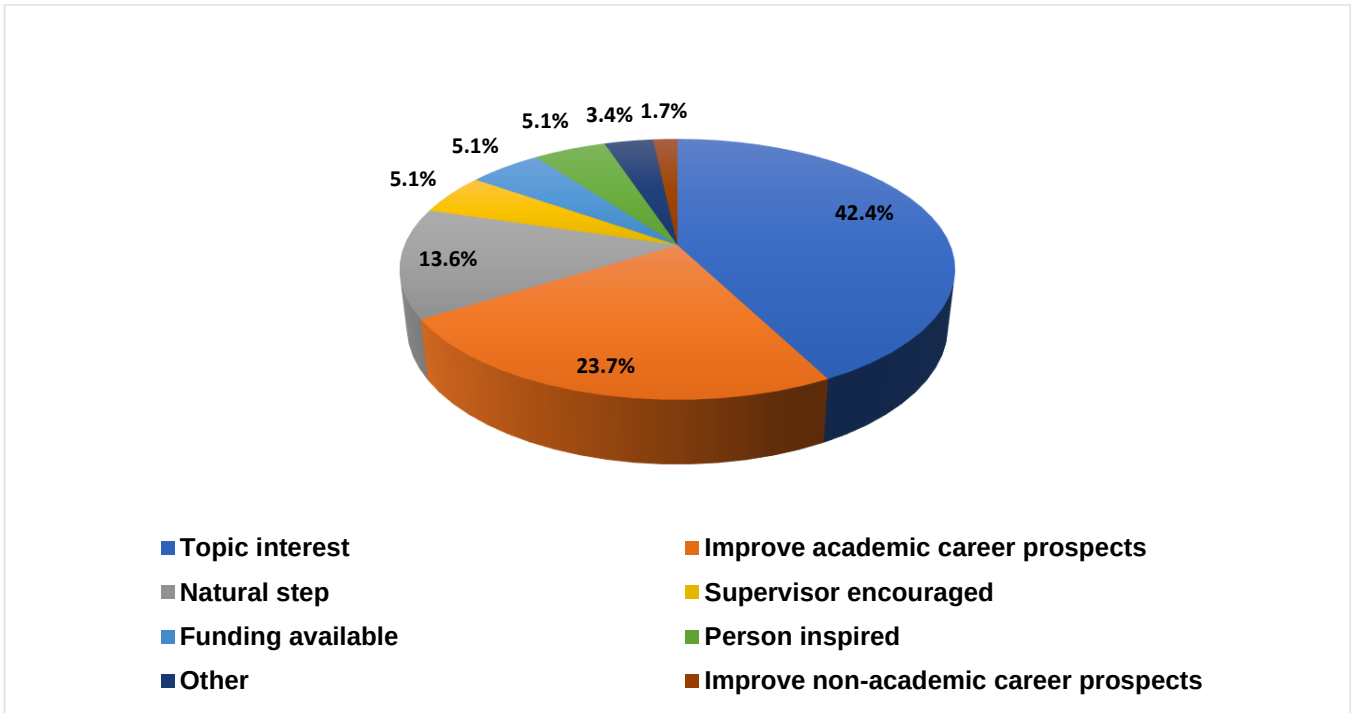
7.7.2 Effect of main motivation for PhD study on academic career aspiration: questionnaire data: current PhD students

Now turning to whether the principal reasons underpinning why PhD students chose to undertake doctoral study influences whether they aspire to a postdoctoral academic career.

As stated above, three-quarters of respondents (74.7%) sought an academic career in research and / or teaching (as one of their possible postdoctoral career aspirations). Examining each main motivation for PhD study in turn (see Figure 31 below), of those who aspired to an academic career just over two-fifths (42.4%) did a PhD due to interest in the topic, just under a quarter (23.7%) to improve their career prospects for an academic career, and 13.6% because it felt like a natural step. Far less popular main motivations were, 5.1% of those seeking an academic career elected to study for a PhD due to their (undergraduate or Masters degree) supervisor encouraging them, 5.1% because funding was available, 5.1% because they felt inspired to work with a particular academic, 3.4% for an 'other' reason and 1.7% to improve their career prospects for a non-academic career. The results were moderately associated (Cramer's V 0.3773) but not statistically significant (chi square p value 0.134). (x^2=0.34; p≤.05; V=0.22).

Thus, the largest proportion of respondents who sought an academic career had chosen to do their PhD for interest in the topic rather than to improve their academic career prospects. This result is surprising and contradicts what would logically be anticipated and was also the result in previous studies, that those who are instrumentally motivated for doctoral study are more likely to seek a postgraduate career in higher education (Orton-Johnson and Webb, 2011; Collinson and Hockey, 1997).

Figure 31: Effect of primary PhD motivation on current PhD students' career aspirations



7.7.3 Research career aspirations and views of broad and compulsory methods training: Questionnaire findings

Having discussed in what ways students' main reasons for engaging in doctoral study affects their later career aspirations, the potential relationship between aspiring to a research career and views of broad methods training will now be explored. The literature indicated that those who were instrumentally motivated for PhD study, and thus seek postdoctoral non-academic / academic research careers, are more likely to be content to study broad methods on a compulsory basis as they recognise this training will provide employment-relevant skills (Collinson and Hockey, 1997; Orton-Johnson and Webb, 2011).

The questionnaire divided views on compulsory methods training into quantitative and qualitative, thus responses to each method branch were also analysed in relation to postdoctoral aspirations for an academic or non-academic career.

7.7.4 Academic career aspiration and views broad and compulsory methods training

Agreement with broad methods training: respondents were permitted to select from a multiple-choice list of possible career options and to choose as many options as they wished. 66% of the respondents (who answered both questions, that is on their career aspiration and their view of broad methods training) agreed with broad training. The results on this were rather unexpected, however, further discussed below. The result was statistically significant at the 5% level with a chi square p value of 0.025. The analysis was close to the boundary between weak and moderate negative association with a Cramer's V of -0.2875. This negative association is due to the fact that a surprisingly higher percentage of respondents who said they did not seek an academic career agreed with broad methods training (94%) than those who did seek an academic career (66%).

Agreement with compulsory quantitative methods training: 68.5% of those who answered both relevant questions agreed with compulsory quantitative methods training. The variables were weakly and negatively associated (Cramer's V -0.1901) and not statistically significant (chi square p value 0.109). Again, this negative association is because higher levels of agreement with compulsory quantitative training was present among those who did not wish to pursue an academic career following their PhD than those who did (88.2% compared with 68.5% respectively).

Agreement with compulsory qualitative methods training: 71.7% of those who answered both relevant questions agreed with compulsory qualitative methods training. The variables were weakly and negatively associated (Cramer's V of -0.2368) and the result was statistically significant at the 5% level (chi square p value 0.046). Once more, the negative association is because higher levels of agreement with compulsory qualitative training was present among those who did not wish to pursue a research or teaching career in higher education following their PhD than those who did (94.4% compared with 71.7% respectively). When levels of support for compulsory training are compared across the two methodological types, it is worth noting that overall slightly more students who wanted a postdoctoral academic career supported compulsory qualitative training than quantitative (71.7% compared with 68.5%).

7.7.5 Non-academic research career aspiration and views broad and compulsory methods training

Agreement with broad methods training: Turning now to those respondents who sought a non-academic research career and how they viewed broad methods training. 64.5% of those who answered both relevant questions agreed with broad training. The variables were weakly negatively associated (Cramer's V -0.2139) and the result was statistically significant at the 10% level (chi square p value of 0.095).

Agreement with compulsory quantitative methods training: 75.7% of those who answered both relevant questions agreed with compulsory quantitative methods training. The variables were very only weakly associated (Cramer's V 0.0574) and the result was not at all statistically significant (chi square p value of 0.629). Comparing findings between whether respondents did or did not want a non-academic research career, the percentage of students who sought a research career outside higher education and agreed with compulsory quantitative methods training was slightly higher than those who did not want such a career (75.7% compared with 70.1%).

Agreement with compulsory qualitative methods training: 80.6% of those who answered both relevant questions agreed with compulsory qualitative methods training. As with quantitative methods above, again the variables were very weakly associated (Cramer's V 0.0750) and the result not at all statistically significant (chi square p value 0.527). The percentage of students who sought a research career outside higher education and agreed with compulsory qualitative methods training was slightly higher than those who did not want such a career (80.6% compared with 74.3%).

7.7.6 Walking interview / video diary findings

Qualitative research student participants' career aspirations were discussed earlier on p.179, when the motivations for doctoral study are outlined and whether these were instrumental in nature i.e. directed towards gaining a particular type of career after the PhD and shall not be outlined again here.

7.8 Employed PhD graduate questionnaire analysis

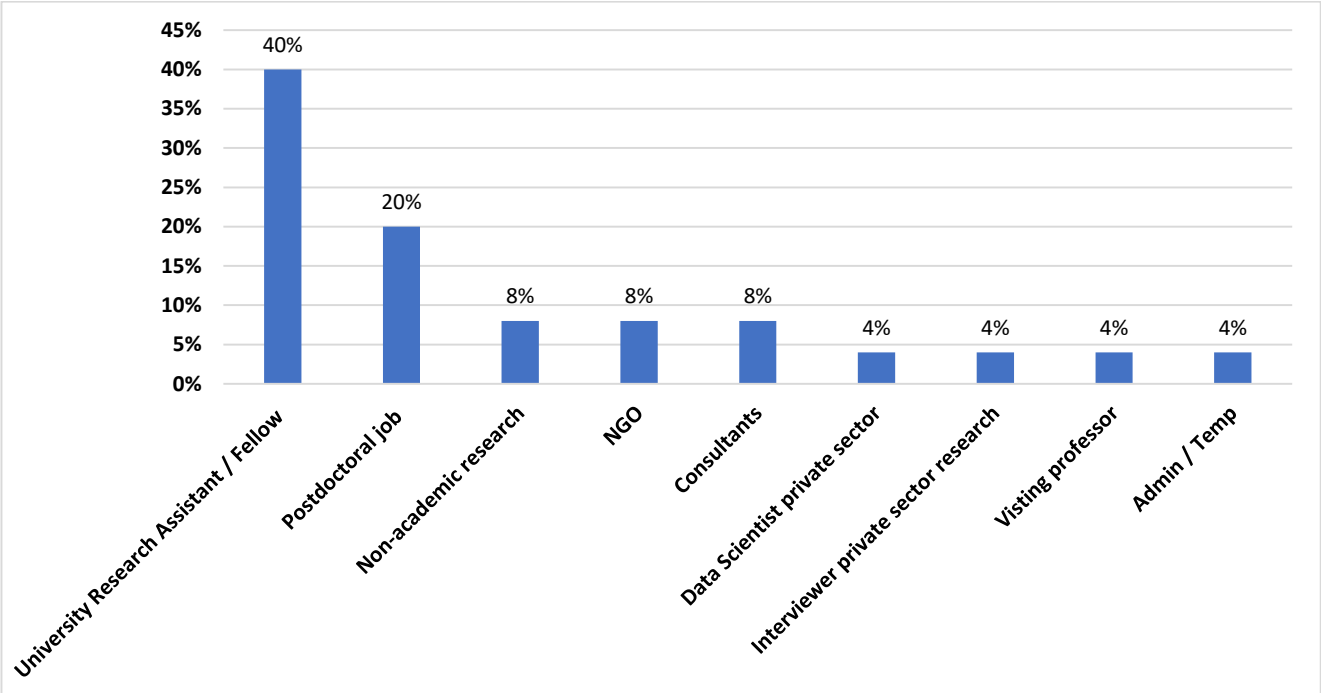
7.8.1 Types of postdoctoral employment

Former doctoral graduates were asked about their current employment and were provided with an open text box in which to type their responses. Responses were then coded for similarity and the results are as follows. Only half (25 / 50) of the respondents provided answers for this question.

Forty percent (10 out of 25 respondents) were in a university Research Assistant / Research Fellow role; 20% (5) in another postdoctoral job (most commonly this would be a research role within a university); 8% (2) were in non-academic research roles 8% (2) working at Non-Government Organisations (NGOs) / not for profit organisations; 8% (2) were consultants (unspecified), 4% (1) a data scientist in the private sector, 4% (1) an interviewer for a private research organisation; 4% (1) visiting professor and 4% (1) working in admin / being a temp.

Figure 32 below summarises respondents' current postdoctoral job roles.

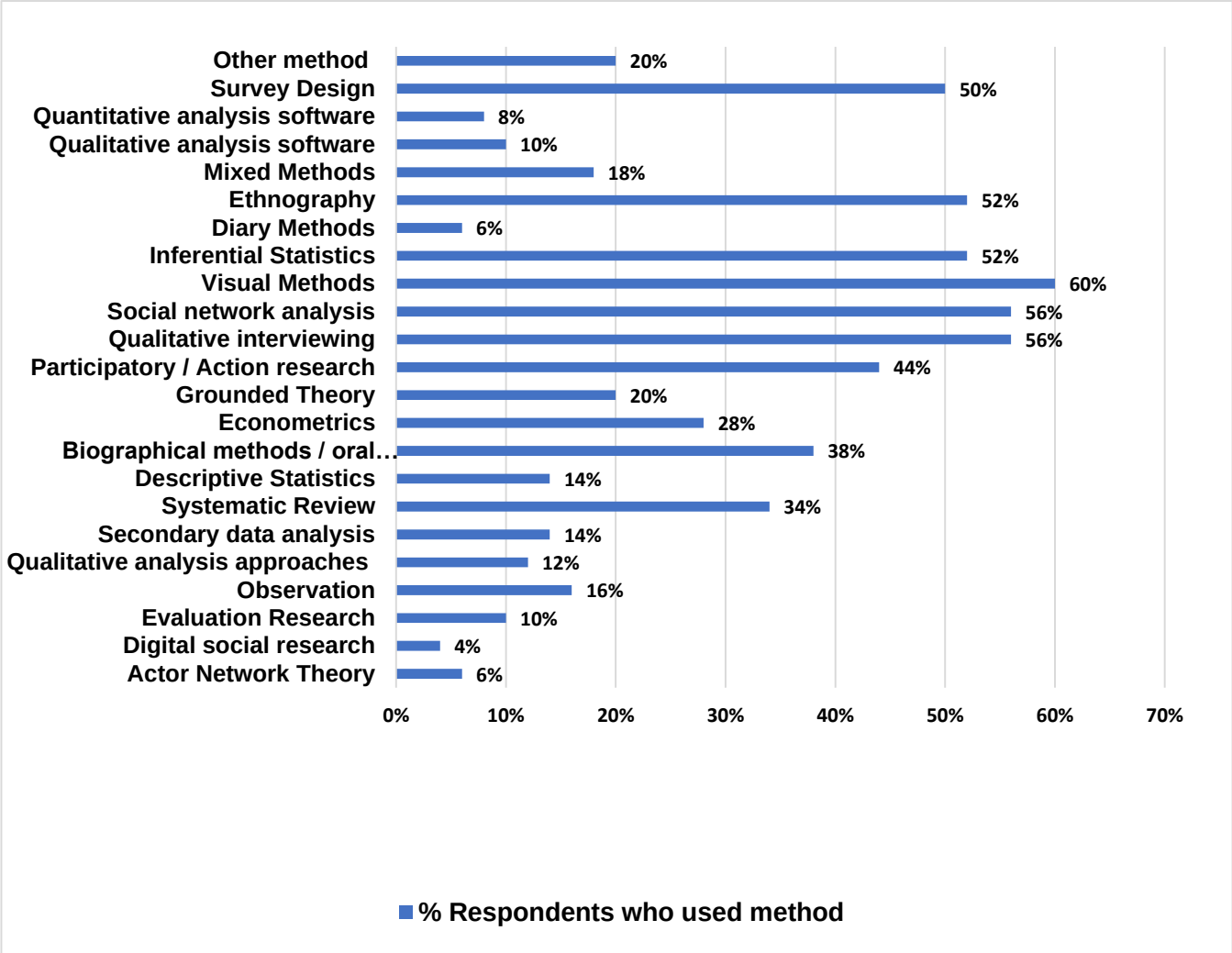
Figure 32: Employed postdoctorates' current employment



7.9 Research methods used and known about in employment

As can be seen in Figure 33 below, the 50 now employed former PhD student respondents had used a wide range of methods in their postdoctoral employment positions.

Figure 33: Research methods used in postdoctoral employment



The most commonly used research methods used in postdoctoral employment by respondents were: visual methods (60%); qualitative interviewing (56%); social network analysis (56%); ethnography (52%); survey design (50%); participatory / action research (44%); biographical methods / oral history (38%) and systematic review (34%). Among the least used methods in employment were: digital social research (4%); diary methods (6%) and actor network theory (6%) (Figure 34).

The top three research methods that employed postdoctorates found it useful to know about, even though they did not use them directly were: 1. quantitative data analysis software; 2. mixed methods and survey design / ethnography (Figure 34). The most common useful method to have

knowledge of was quantitative data analysis software such as SPSS, Stata and R with 62% of respondents saying this. Knowledge of mixed methods was also very important (58%), survey design (50%), ethnography (50%), a range of qualitative techniques including interviewing, qualitative data analysis software such as NVivo and qualitative data analysis approaches such as discourse analysis, content analysis, grounded theory etc. (46% of respondents selected each of these) and also descriptive statistics (46%).

Figure 34: Employed postdoctorates' top useful methods to know about

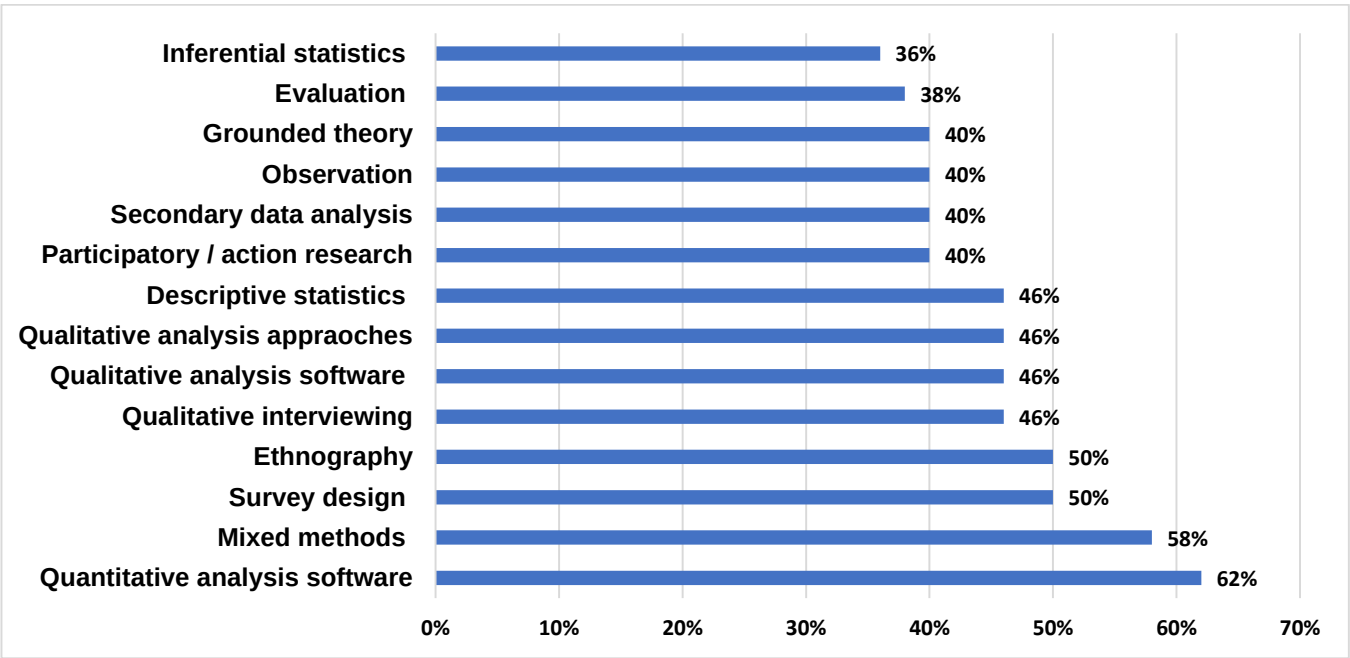
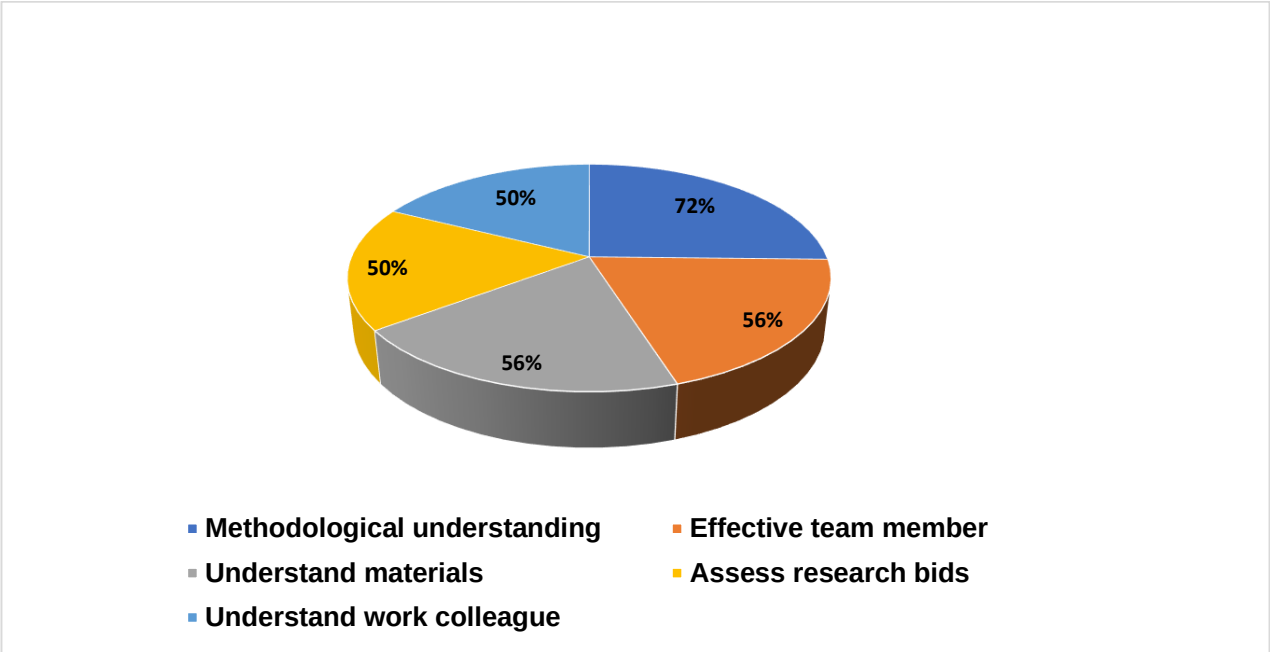


Figure 35 below shows the reasons underpinning why employed postdoctorates felt it was useful to know about methods that they did not directly use. The majority of nearly three-quarters (72%) felt it was important to ‘have an understanding of the pros and cons of different research methodologies and design’; 56% ‘to be an effective research team member’; 56% to ‘understand a journal article / seminar etc. better’; 50% ‘to understand research bids and tenders for work; 50% to ‘understand the work of a colleague’. It is clear from Figure 35 below that respondents could choose multiple answers to this question as the percentages sum to more than 100%.

Figure 35: Employed postdoctorates: why useful to know not directly used methods - multiple responses permitted



7.10 Experts' views of DTPs and DTCs

It is important to consider the formation of the DTCs and DTPs, participants' views on this and how this policy change initiated by the ESRC has impacted upon the form of the social science doctorate and the research and other training expected to be undertaken when studying for such a degree.

Students did not discuss DTCs or DTPs at all in their interviews or video diaries and were not asked any direct questions about this. Affirming findings from the literature that many postgraduate students are relatively unaware of the DTCs and DTPs and the fact that their academic institution is part of one and what this involves (Budd *et al.*, 2018), the Masters and PhD students in my research study also appeared not to be especially cognisant of the DTCs / DTPs.

The experts in my study who all had direct experience of either being part of a DTC / DTP or a policy role in dealing with or shaping them, outlined views on the transition from ESRC directly managing the funded PhDs to the less hands-on approach of the formation of the DTCs (and now DTPs), as well as their overall opinion of the DTCs and DTPs.

Expert 2 articulated that the ESRC, and some HE institutions, had believed that research methods training would be restricted to being carried out in a small number of institutions, but that they felt this had not ultimately been the case:

“I clearly think that at one point the ESRC, and Oxford in particular and the LSE [London School of Economics] thought all of the research training in the UK would be done in a very limited number of centres. It didn’t turn out like that.” (Expert 2)

Almost in direct contrast, expert 3 viewed that the move to the DTCs had meant that methods training became focused in a relatively small number of institutions. They felt that some worthwhile institutions had not been included in the DTCs and had consequently experienced both a decline in student numbers and had lost high quality teaching staff to other universities. This echoed the point made by Budd *et a.l* (2018) regarding the impact of DTC creation on institutions that were excluded from becoming DTCs, and these were frequently post-92 universities.

“The first problem is that it concentrated the excellence in methods teaching into just a handful of universities. Lots of universities, and Plymouth was one of them, Leicester was another one, and Loughborough were left out when the DTCs were created. So that meant that there’s been a sapping of methods teaching talent from those universities and everybody has suffered. These were often regional universities…That means their PhD programmes are not being serviced with good training in the PhD programmes. I believe this has declined in social sciences across the non-DTC universities… Whether deliberate or not I don’t know but it was a great pity. It chopped out an awful lot of really excellent innovation in teaching.” (Expert 3)

Expert 3 expanded on the above point explaining how postgraduate degrees at some non-DTC universities consequently had to be discontinued and some high-quality academic teaching staff left to gain positions at other (DTC) universities. Geographical issues such as large distances between where a student lives, and which institution offers the correct postgraduate degree programme for what they wish to study or particular one-off shorter training packages, can also exacerbate problems:

“It was kind of a vicious circle. The staff moved [away] so there was less expertise, because there was less expertise they could do less. And because they could do less they had fewer students. Fewer students, less interest. So after 24 years the Masters in Social Research at Plymouth has now closed. And I suspect if you looked at other universities outside of the DTCs and DTPs, you’d

probably find a similar pattern across the country. So it's removed that possibility for regional training in lots of places." (Expert 3)

According with Budd *et al.*'s (2018) point about non-DTC universities being 'outside the golden circle', expert 3 opined that the shift from previous ESRC accreditation to more university-centred control under the DTCs meant that certain institutions were casualties under the new system in terms of the amount of postgraduate degree programmes, amount of postgraduate training they could offer and studentships that they had. Thus, as expert 3 says below, such institutions 'went into…decline':

"Under the old accreditation system, well I mentioned the idea of the gold standard…You got this stamp of approval and you could say in your prospectus, PhD students will…or for Masters students our training is ESRC-approved. And you had to be ESRC-approved to get ESRC studentships. Now once they switched to the DTCs those studentships disappeared at the non-DTC universities. So that meant there was less need for the Masters training and in fact other postgraduate training, and the graduate schools very often in fact declined. I'm thinking of one university in particular, Plymouth. It went into pretty much terminal decline after the DTCs existed. I think it was probably true of some other places as well, but that was one I knew best. (Expert 3)

On the positive side, confirming Budd *et al*'s (2018) finding that the creation of the DTPs after the DTCs had once again broadened participation and improved inclusivity to now include some post-92 institutions, expert 2 stated that a positive step was that institutions which had previously been polytechnics, were now part of the DTPs:

"Although of course in the new DTPs former polys are now usually included which has been a big shift." (Expert 2)

7.11 Experts' views of the ESRC Postgraduate Training and Development Guidelines and Doctoral Programmes Restructuring / Changes in Delivery

Linked to participants' views on the establishment of the DTCs and DTPs, and concomitant effects of that, expert interviewees also discussed what they thought of the ESRC's postgraduate training guidelines.

Expert 1 had a positive view overall of the ESRC training guidelines, especially as they believed they had been carefully developed by a group of knowledgeable people:

“I liked the [pre-DTC] training guidelines, I thought they were a very good thing because they were peer produced. Panels of people sat down and said, ‘what does a geographer need to know, what does an education researcher… need to know?’” (Expert 1)

However, a few of the key individuals expressed some concern that they felt the move to DTCs meant less control over which methods postgraduate students learn about than under previous ESRC recognised training outlets. As a consequence, as an academic assessing postdoctoral job applications, they no longer feel certain what kind of methods knowledge someone is likely to have:

“The thing that has upset me personally the most about going to the DTCs and the DTPs is that with [the pre-DTC] training guidelines gone, if I were to recruit somebody from the +3 stage here I can’t any longer know what they know. So I think that abandoning the training guidelines, and devolving everything to individual universities, actually was a retrograde step. Personally, I would have stuck with…that nobody could be DTC or a DTP now unless they actually ensured that they provided M [Masters] level training on every pathway, according to the guidelines.” (Expert 1)

Expert 1 voiced a concern that the lack of certainty over what methods knowledge a student applying to do a doctorate may have, could lead to universities tending primarily to accept students who had already studied for a Masters at their institution, to study for a doctorate as the institution could be more certain that way about what the content student had covered:

“And I think that may encourage people to recruit +3 people who’ve done their own one [Masters degree]”. (Expert 1)

Developing this point further, expert 1 explained that Masters degree programmes were previously developed according to a ‘national syllabus’ and ‘benchmarking guidelines’, which they felt provided a higher degree of consistency than the more devolved training under the DTC / DTP system:

“I liked it when the MRes was done to a national syllabus…I sat on the benchmarking steering group for the QAA [Quality Assurance Agency] when we were starting to do benchmarking guidelines for Masters programmes.” (Expert 1)

Expert 3 expressed a similar view to that outlined by expert 1 of a concern that there was less centralised control over, and standardisation of, what postgraduate students are taught during their degree programmes following the establishment of the DTCs than before:

"The second problem is that actually since then we've gone back to the kind of pre-accreditation phase where universities can pretty much within the DTCs teach what they want. It's not quite as a free-for-all as it used to be and I think it might even go back a bit under the DTPs. I'm thinking of one university now that's in a DTC. I'm not going to name the DTC or the university, but it was pretty much possible for a student to undertake certain programmes in areas like Business Studies and so on and do hardly any methods whatsoever, other than those that they would use to do their own research. So they weren't getting exposed to other methods very much…But a kind of diversity has grown up and there's not that kind of national standard anymore. It's huge diversity between DTCs, DTPs and within that between the universities themselves. And I think that is a pity. (Expert 3)

7.12 Chapter findings' summaries and discussion

7.12.1 Whether a PhD should prepare for employment

Questionnaire findings: Summarising the findings on respondent's views of whether PhDs should prepare for employment, the vast majority of nearly nine-tenths agreed (89.2%) that it should. There was some difference by gender with more females than males disagreeing (21% compared with 6.8% respectively and this was the only statistically significant relationship at the 10% level in this set of analysis. Almost a clear U-shaped curve pattern emerged by age groups with agreement being strongest in the youngest and older ages and dipping in the middle. Respondents' year of study revealed an evident picture of agreement decreasing as students progress through their PhD. Regarding differences in views by students' doctoral research methods, those using quantitative methods were most likely to agree that PhDs should prepare for employment compared with mixed and qualitative methods users.

Student qualitative data findings: Relatively few qualitative research student participants expressed views on this. Most who articulated an opinion felt that a PhD should prepare for employment, at

least to some degree, by enhancing professional research skills via broad methods training and preparing postgraduates for teaching if they wish to pursue such employment later.

Expert qualitative interview findings: Experts' views were split between firstly, those who conceptualised the purpose of social science doctorates as primarily an original contribution to knowledge and secondly, those who felt it should generate both knowledge and researcher skills. Some experts particularly spotlighted the difference between natural and social science PhDs, whereby the former is typically set up in advance for the student with the doctoral topic already pre-selected, and the student carries out research to fit in with a larger body of research in a team. Experts stated that in social science doctoral topics are frequently chosen by the student themselves and that such topics key into their particular research interests. A expert opined that often that same topic area will sustain that student, and subsequent academic, long into their research / teaching career.

Experts also outlined their views on how social sciences PhD were structured previously. Views were expressed on the fact that previously sometimes PhDs took longer to execute but this is not permitted now with the 3-4 year submission requirement and associated sanctions of universities for students not completing in a timely manner. Issues with the old doctoral model were also articulated including: lack of appropriate methods training which affected students' abilities to have a more holistic approach to research problems; the fact that purely theoretical PhDs used to exist which were inadequate preparation for teaching and undertaking methodological research; doctoral student isolation, which is still argued by many to persist and shifts in the ease with which postgraduates could gain employment, including academic occupations, following their degree, sometimes even only possessing a Masters was sufficient.

7.12.2 Whether a PhD effectively prepares for employment

Current students' questionnaire findings: Summarising the findings on respondents' views of whether PhDs do prepare for employment, nearly nine-tenths agreed (88.9%) that it should. There was some difference by gender with more males agreeing than females (93.2% compared with 79% respectively) which was statistically significant at the 10% level. Almost a clear U-shaped curve pattern emerged by age groups with agreement being strongest in the youngest and older ages and dipping in the middle. Respondents' year of study revealed an evident picture of the most positive views being among 1st year PhD students (88.4% agreed), with the percentages of

students agreeing that PhDs are useful employment preparation being within the 60s among 2nd – 4th year PhD students. This was opposite to what might have been anticipated from the findings of some prior research (Orton-Johnson and Webb, 2011) that positive views of broad training increases as students journey through their doctorate. Regarding differences in views by students' doctoral research methods, those using quantitative methods were most likely to agree that PhDs effectively prepare for employment (100%) compared with mixed (93.8%) and qualitative methods (86.5%) users.

Student qualitative data findings: It seems from the qualitative research findings with postgraduate students that one of the ESRC's key aims of the ESRC's of improving employment skills is not being fully achieved in relation to quantitative methods training. Although students had undertaken broad quantitative training, this was seen by many as insufficient preparation for quantitative / statistics employment and a strong view emerged on the inadequacy of quantitative methods training. Two parallel difficulties emerged, the level of the training was too and the timing of it was not suitably recent for employment entry, discussed in this chapter. Students with some broad and introductory quantitative training were in labour market competition with those with high level quantitative skills, for example, those who used solely quantitative methods in their PhD and / or forthcoming undergraduate Q-Step graduates. Issues of the timing of quantitative methods training occurring early in the doctoral degree, led to a situation whereby relevant knowledge had been forgotten as the student neared the completion of their PhD and forthcoming employment applications. Experts also made comments on methods recall issues, which is further discussed below. No particular comments were made by students on inadequate qualitative methods training relating to employment preparation so this would appear to have been largely successful.

Moreover, the non-research specific skills that the ESRC intends postgraduate students to learn, such as teamworking and communication with others by means of event organisation etc. were not being sufficiently imparted according to some student research participants. In circumstances where they are stretched, students typically gravitate towards improving and delivering those outcomes that they will give them most 'bang for their buck', for example those that they will be judged on for employment such as gaining publications and securing a successful PhD thesis.

Expert interview findings: Some experts raised issues with recall of methodological techniques. These are typically taught either in the Masters year or early on during a PhD. This kind of frontloading of methods learning presents challenges in remembering how to use such methods in

postdoctoral employment. One of the experts indicated issues with students' recalling quantitative methods in particular, partly due to failings in the way these are taught. The expert argued quantitative methods are frequently taught in a short-term way to pass assessments rather than in sufficient depth to enable true understanding and retention. This reaffirms Epstein's (2019) arguments on the critical importance of gradual, 'deep learning' for it to be truly successful and effective.

"Your future self will thank you": Turning briefly to discuss findings from students and experts on what I have classified as the 'your future self will thank you' theme. Considering views of broad, and at times compulsory, research methods training some participants opined that although they held negative views of the training at the time of study, they retrospectively gained an appreciation of such training as the prospect of postgraduate employment approached. Experts also stated this point. Broader knowledge was seen to be useful in the longer-term rather than in the immediate sense, when it was frequently perceived as an irritation and a distraction. A perspective encapsulated by Megan of "how do you really know what's the best for you when you are still a student?", emerged in the views of many students. Students' perspectives on what is important or what they enjoy can be mutable, a point made by expert 4, shifting during or after their doctoral studies.

Several students ascertained the salience of a wider knowledge across the methodological spectrum in enabling more informed methodological choices for research.

7.13 Postdoctoral career aspirations: Summary

Analysis of the data posed the question, are the reasons why PhD students originally chose to undertake doctoral study linked with whether they seek to have a research career (either academic or non-academic) following their PhD degree? Additionally, it was investigated whether being instrumentally motivated towards doctoral study was related to more positive views of broad and compulsory doctoral methods training.

The data revealed that yes, reasons for doctoral study may affect academic career aspirations but not in the way that might have been expected. Surprisingly more respondents who were motivated to study for a PhD by interest in their topic (intrinsic motivation) aspired to an academic career (83.3%) than those who primary motivation was improving career prospects (71.4%). These results

are contrary to what would likely be expected that those who are instrumentally motivated to engage in doctoral studies would be more likely to seek an academic postdoctoral career than intrinsically motivated students.

It was hypothesised that students who aimed to work in the academy following their PhD (an instrumental driver) would be more likely be in favour of compulsory methods training, perceiving this as a useful way of gaining employment skills. Surprisingly, more students who did not seek an academic career supported broad methods training than those who did (94% compared with 66% respectively). In terms of views specifically on quantitative and qualitative compulsory methods training, again a pattern of not seeking an academic career was surprisingly associated with agreement, with approximately 20% more respondents who did not seek an academic career than those who did aspire to that type of career agreeing with compulsory methods training of either type. This may reflect the even greater need for people working outside of the academy to have a solid grounding in a range of research methods.

Turning now to how respondents who sought a research career, although not in the academy, felt in relation to broad and compulsory methods training. Once again, confoundingly a higher percentage of respondents who did not seek a research career outside higher education agreed with broad methods training (83% compared 64.5% respectively). However, agreement with both types of compulsory methods training was slightly higher among those who did seek a non-academic research career compared with those who did not, approximately 5% difference for each of quantitative and qualitative methods. These results are far more in line with what would be logically anticipated, that those who have an instrumental motivation for doctoral study (in this case a non-academic research career) are typically more likely to agree with broad and compulsory methods training due to envisaging a direct employment-related benefit.

Having presented and discussed all of the key original research findings, I shall now turn to a concluding discussion of my thesis in the final chapter, revisiting my research questions, contextualising my main findings within the literature, setting out the limitations of my research study and possible areas for future research. I will conclude by offering some recommendations for structuring social science PhDs and their associated methods training.

8 Chapter 8: Concluding Discussion and Recommendations

8.1 Discussion

This doctoral thesis has investigated the expansion and standardisation of research methods training for social science postgraduates in the UK initiated by the ESRC. It has posed and sought to answer difficult questions regarding the social science PhD itself today in the UK. What does today's social science doctorate look like? Who is it for and what is its purpose? Moreover, what does the generic research training programme underpinning today's social science doctorate look like? How have the new training programmes developed within universities, and Doctoral Training Centres/Partnerships, what intentions have informed them, and which stakeholders have driven, and been involved, in this process? How effective have changes to methods training been and would modifications to the current system be beneficial?

In this thesis I have agreed with arguments that things did have to change in relation to the UK social science PhD and doctoral methods training of the 1980s. The piecemeal research methods training of the UK in the 1980s and 1990s which was arguably an institutional lottery dependent on the PhD supervisors' own methods knowledge, and on that of the teaching staff at a particular university (Collinson and Hockey, 1997), was clearly unsustainable (MacInnes, 2014). This situation was unfair to students in terms of their university education and moreover did not facilitate the link that should exist between doctoral-level education and subsequent employability. Before the Winfield Report (1987), the doctorate was largely focused on generating new, specialised knowledge and research, with the intention of developing an expert academic in a particular niche field of study (Luker, 2008).

In the context of societal structural changes in employment, a far stronger connection between the doctorate and employment was necessitated than before. Thus, the social science doctorate has morphed into the training model PhD that we know today, focused around developing the postgraduate researcher and imbuing them with employment-relevant skills as well as retaining the importance of the PhD making an original contribution to knowledge. Alongside the effect of broad, long-term changes in the world of work, the massification of higher education, not solely at postgraduate level but also, and debatably even more so, at undergraduate level changed the relationship between higher education and employment. There are no longer 'jobs for life' and

arguably many people do not even desire the same position for life with flexible biographies and the individualisation thesis espoused by those such as Beck (1992) prevailing. With larger numbers of graduates from whom to select, and thus intensified competition for those positions that do exist, increased employer expectations of skills among graduates have resulted, whereby graduates whether at undergraduate or postgraduate level must have more to offer beyond their academic qualification(s) and their intelligence. In essence, the UK in particular but also internationally, the Western world generally was simply no longer the same place. As a result, postdoctoral academic learning had to be mutable to respond to this shifting picture. There was wide and uniform recognition of, and agreement with, this among my research participants both the postgraduate students and also the experts consulted.

Thus, in a world that was no longer the same, I have argued that it is clear that things did have to change. However, what this research sought to investigate and to answer was the question did things change in the right way regarding postgraduate research methods training and how social science doctoral degrees are administered, structured and delivered? Was the, partly generic, training model PhD and the focus on postgraduate students gaining employment-relevant skills an appropriate way to have reshaped the doctorate? For example, although it is widely recognised and accepted that there is an enduring quantitative skills deficit in the UK, was a standardised postgraduate training programme the correct way to address this? Moreover, weighing up possible tensions between academic tribalism in its disciplinary and methodological forms on one hand and methodological pluralism and inter-disciplinarity on the other, it is important to reflect upon how things have unfolded and what the reactions of those directly affected and also others involved have been.

8.1.1 'Quick wins'

In terms of 'quick wins' or things that were being at least partly achieved in relation to the ESRC's intentions for postgraduate training, this research found that there is a large degree of support among the current students and the key academics / policymakers consulted in this study for broad postgraduate research methods training in principle. Employed postgraduates showed even stronger support for broad (and compulsory) methods training than current PhD students, once they were working in research likely indicating the practical usefulness of such training for employment**.** Some key benefits of broad methods training identified were providing students with knowledge across the methodological spectrum therefore affording the potential of using a range

of techniques and, using the toolbox analogy, knowledge of how to use a hammer for a nail which is only of limited use for tasks beyond working with nails (Epstein, 2019). Extending this point further, breadth in research methods training also furnishes individuals both when students, and subsequently in work, with an ability to select the most appropriate methods to answer research questions. Participants also felt that breadth in methods training helped to 'level the playing field' by standardising methods knowledge levels in response to students' varying prior backgrounds in terms of their degrees, disciplines, amount of study and research methods knowledge. Current postgraduates and employed former PhD students both were more in favour of compulsory qualitative training than quantitative. This may be indicative of the broad preference for qualitative methods revealed by my data which still endures, that I have argued throughout my thesis.

Other key benefits identified by current students and experts included that broad training taught employment-relevant skills and also assisted an understanding of others' research, such as peers' research, research in future employment teams and research in journal articles / books. Interestingly, the research demonstrated that employed doctoral graduates are less convinced of the effectiveness of the doctorate for terms of employment preparation than current PhD students. This may indicate that those now employed have found what they learned about methods during their doctorate less useful in practice than they had anticipated whilst studying, although we should be mindful of the fact that these are participants drawn from two different cohorts who would have been exposed to different training experiences.

Finally, a few current students viewed breadth in methods training as offering the potential to stimulate fresh ideas within students by exposing them to methods that were new to them, although this was also in direct contradiction to views expressed by other participants that rigidity in the training structure stifles innovation and serendipity.

Regarding the idea of 'quick wins' it should be noted that any innovation, such as the introduction of a new training regime, is likely to take time to bed in, with some benefits being achieved relatively quickly ('quick wins') while others take longer to realised. For example, arguably among the more straightforward things to achieve are making available broader training in a range of methods available in a relatively systematic way, given how piecemeal this was in the 1980s as argued in this thesis.

8.1.2 'One size fits some, but not all'

Despite recognition of several benefits brought about by the introduction of the new training regime associated with the ESRC's 2009 guidelines, this research did not reveal a uniformly rosy picture in relation to broad methods training and social science doctorates. Certain ESRC requirements set out in the postgraduate training and development guidelines did not appear to be successfully being achieved, according to my findings, thus 'one size fits some, but not all' is an important concept for framing student heterogeneity and differences in identities and profiles.

The ESRC postgraduate research and development training programme and associated publications focus on the acquisition of skills, that is lists of things that students should become capable of doing, without necessarily sufficiently taking into account postgraduate students' profiles, their differences and varying perspectives and attitudes that students have towards methods and their own academic studies and careers. Essentially, students seem to be hearing the question 'what would you like to be able to do?', whereas the impetus from the ESRC for the training programme is more 'who / what kind of researcher would you like to be?' The ESRC advocates a T-shaped type person, one who is a methodological pluralist and generalist, at least to some degree, who is open to and has a wide range of methodological knowledge whilst retaining specialist and discipline-centred abilities. Thus, there is a cognisance on the part of the ESRC of identity. However, this awareness of identity is more focused around postdoctoral identity rather than fully appreciating the influence of already-formed identities, preferences and capacities that undergraduate students have before entering university regarding methods and academic disciplines. Attitudes to quantitative methods in particular are often already entrenched prior to university, having been shaped by experiences of learning maths and working with numbers at school. As the literature has shown statistics anxiety can arise from these experiences and, if not full blown anxiety at the very least clearly demonstrated stances of either an openness to, and even preference for, quantitative methods and statistics or the opposite 'I'm not a numbers person' position. My findings are consistent with those of researchers such as Williams, Payne and Sloane (2016a) and Chamberlain, Hillier and Signoretta (2015), that anxiety about studying statistics is reported by approximately half of the Plymouth and Cardiff university 2nd year undergraduates across a range of social science disciplines (in the case of Williams, Payne and Sloane, 2016a) and sociology, social policy and criminology 1st year undergraduate students at Loughborough university (in the the case of Chamberlain, Hillier and Signoretta, 2015) who took part in their research. As the literature shows, students' views of particular methods, especially quantitative can also be influenced by the methodological identities and preferences of their PhD supervisors

(Deem and Brehony, 2000). These prior identities and framings of capabilities of self, internalised by students, are a challenge for the ESRC and universities in seeking to deliver any kind of standardised postgraduate training programmes. The 'one size fits some but not all' analytical theme highlighted at the outset of this thesis is of crucial relevance here. Getting the latter message across to students of 'what kind of researcher do you want to be?', whilst still taking account of variation in students' identities, will be crucial elements for the ESRC's project of reshaping methods training.

Is the all singing, all 'salsa dancing' (Luker, 2008), generalist and T-shaped type social science PhD student and researcher really achievable and desirable? My findings indicate that some students can be, and are, more generalist than others, such as those who are drawn to using mixed methods for whatever reason (be that flexibility of approach or instrumental motivations such as strategically improving employment prospects by having more strings to their bow, as it were). Thus, for some, 'one size' does fit quite well. However, trying to make everyone, in some sense, similar in terms of what they learn seems erroneous. In the 80s and 90s, and before, in social science there existed 'qualitative people' who did not identify with quantitative methods and 'numbers people' who frequently used, and arguably preferred quantitative methods, and often did not know much about qualitative methods, as well as a smaller number of methodological pluralists. This methodological tribalism still exists now and loomed large in my research data. Statements such as 'I'm just not a numbers guy', 'I'm not a numbers person' exhibiting an identity and framing of self as one thing or other within research and methods, were frequently uttered in research interviews. 'One size' does not seem to fit as well for these types of students.

I propose that those students, and researchers, who exhibit more generalist qualities are likely to be those who will thrive best in today's flexible and uncertain economic and employment climates, which are sometimes characterised as 'precarious', where a skills-based approach is championed. A recognition of this reality will have contributed to the ESRC's move towards a broad research training programme that also retains specialism. I do not deny that methodological pluralism and generalism are sound ideas, in principle. I propose that students who continue to possess mainly qualitative skills are likely to be in such high levels of competition with each other for employment (because there are larger numbers of students with preferences for this type of skillset in at least some social science disciplines, such as sociology) that they will find it increasingly challenging to gain postdoctoral employment, at least that is employment that has historically valued qualitative skills as well as quantitative ones. Although it should noted that here I am referring to those

qualitatively-minded postgraduates who seek postdoctoral research and / or teaching employment within academia or non-academic sectors. That is my prediction of what is likely to happen in academic and non-academic employment in the near future. Such qualitatively-focused students need to have something else to offer in order to set them apart from the masses of those also with well-formed qualitative skills. Either having highly specialised subject-based knowledge for a particular role is likely to be attractive to employers or possessing some innovative and / or very advanced qualitative skills perhaps in some less well used techniques, approaches and areas. In such cases, arguably greater depth looks to be of more advantage for highly qualitative people, those who fiercely identify as not being 'numbers people'.

Thus, I would tend to recommend that being exposed to some broad training early on, both qualitative and quantitative in undergraduate degrees and Masters degrees is important so students can find out whether they lean towards methodological pluralism and generalism, and also gain some rudimentary knowledge of statistics and quantitative methods, if they are mainly 'qualitative people'. Then focusing on going deep into particular specialist qualitative methods to investigate a particular doctoral research topic is preferable to my mind. Ultimately the doctorate would then finish with some refresher intensive statistics and quantitative methods training, a 1-3 day course on statistics delivered from the 'students as consumers' of statistics / quantitative methods rather than 'producers' perspective. That is to say, an approach pitched at the level of what a mainly qualitative researcher really needs to know about statistics and quantitative methods to read and engage with material in their field that use a quantitative approach, and to have an understanding of what people using quantitative methods in their multidisciplinary / multi-method teams are doing. My research findings do not permit me to offer a position on whether the more quantitative researchers / students correspondingly see the value in gaining some qualitative skills and knowledge. This is due to the relatively small numbers of the more quantitative researchers taking part in the research.

Now I shall turn to consider those aspects of the ESRC postgraduate training and development guidelines which according to my research findings did not appear to be as successfully achieved, although the qualitative and quantitative branches of my study reveal some slightly different results for some of these.

8.1.3 Challenges with the new social science training PhD model: 'Overloaded shopping basket'

8.1.3.1 Content and types of methods training: advanced methods and quantitative methods

There are apparent difficulties in undertaking advanced methods training and quantitative methods training in particular, in terms of the type and content of methodological knowledge provided to postgraduate students.

8.1.3.1.1 Advanced methods training

As ever, it must be recognised and noted, as the ESRC do, that what is an advanced method within one discipline may be relatively basic in another and that perspectives on advanced training vary according to discipline and prior methodological knowledge and abilities.

Advanced methods training, a key requirement and expectation of the ESRC of doctoral students, appears to be suffering. Even though they completely agreed with undertaking advanced training in principle, according to my qualitative research findings, current students simply do not have time to engage in advanced and specialised training with everything else that they must undertake and produce during their PhD. Trade-offs are being made in decision making and advanced training is falling out of the overloaded shopping basket according to the walking interview participants. Current student and employed graduate questionnaire respondents did not feel so strongly, however, that advanced training is being sacrificed in the doctoral training reforms. The majority of current students responding to the questionnaire agreed that in principle doctoral students should undertake advanced methods training, employed postdoctoral researchers even more so. The majority of current student questionnaire respondents disagreed that compulsory broad training meant there was insufficient time to study advanced methods and again disagreement with this was even higher among now employed doctoral graduates.

Yet on further examination of the questionnaire data, views on whether advanced doctoral training is advantageous and possible are not uniformly positive and reveal problems similar to those identified by the students participating in the qualitative part of the study. Agreement that students should study advanced training during their doctorate decreased by more than 10% as students progressed through their PhD, from 1st to 4 year. This is arguably in line with findings from the

literature such as Orton-Johnson and Webb (2011) who suggest that support for broad methods training increases among later year PhD students, thus endorsement for advanced methods training, being a different type of training to broad training, could consequently reduce. I propose that this declining support for advanced training is most likely due to a growing sense of lack of time to undertake advanced training despite desiring to do so principle. My questionnaire results on whether respondents felt that having to study broad methods sacrifices time for advanced training clearly support this hypothesis, showing a sudden and substantial increase in those who agreed with this between 3rd and 4th years (the final 'writing up year' if students go beyond 3 years for their PhD) studying for a PhD. The increased endorsement of advanced methods training being achievable within the doctorate among now employed graduates may indicate a more rose-tinted perspective of the amount of training it is possible to undertake now that the stresses and tensions of a PhD are behind those ex-students. Instead the former PhD students are in a workplace environment where both broad and specialised methods skills are highly useful to them and quite possibly where further training opportunities are more available to them. As argued throughout this thesis, current PhD students feel stretched, consequently are more likely to view having to learn broad methods as affecting their available time for more advanced methods study.

8.1.3.1.2 Quantitative methods training

Moreover, quantitative methods training, in particular, seems to be inadequate in terms of students' abilities in having truly 'learned' the methods. Issues with recalling quantitative techniques later in their PhD degree as well as potentially seemingly contradictory concerns that, too much or too little detail of quantitative methods information was being taught. Of importance for consideration here is whether there should be differential levels of methods training depending on whether students are consumers or producers of particular research methods. i.e. pitching training detail and level of difficulty of information differently according to need of purpose for the training knowledge. Those using exclusively quantitative methods or mixed methods in their doctorate who are likely subsequently to be entering employment requiring them to be analysts of quantitative data have very different learning needs to those who are primarily qualitative researchers during their PhD and should know about quantitative methods in order to understand research publications and the research of others using quantitative approaches (consumers of quantitative methods). Gender has been identified in previous research as an influential factor on statistical anxiety, with more females tending to experience this. However, the results of this study and also further examination of more recent literature such as Ralston *et al.* (2020) revealed only moderate likelihood of female

statistical anxiety. Moreover, my results suggested that negative views of compulsory methods training, especially quantitative, were more likely to be a factor of mature and part-time students tending to be female than their gender actually impacting strongly on such views. The literature clearly indicates a prevalence of decreased support for compulsory methods training among part-time and mature students (Deem and Brehony, 2000).

8.1.4 Innovation, serendipity and originality in doctoral research

Another potential casualty of the tightly packed social science doctorate and the standardised training regime is innovation and originality in research. Serendipity in discovering something new requires scope for the trial and error, to initially and perhaps many times 'go up the wrong path' and be wrong only to then discover something truly brilliant later on. Postgraduate students are now so stretched with the overloaded shopping baskets, that I believe there is no time and space for serendipity. Serendipity could just still be possible in exposing undergraduate and Masters students to a wide range of methods and also topics that they did not have knowledge of, via departmental seminars for example. Thus, they may stumble upon something by chance that greatly stimulates them, that they then use in a new way or differently to what they have done before, and perhaps even others have done. However, with the long list of what is to be achieved, this does seem increasingly unlikely. Moreover, the resentment that some postgraduates feel towards compulsory courses could also be directed at anything else that takes time away from the Masters degree or doctorate and does not seem of direct relevance. An openness to other ideas and new things would seem to be at odds with and stifled by lack of time and much to achieve.

Regarding originality in doctoral research, this again arguably becoming more challenging to achieve with so much social science research having been done already and so many doctorates having been undertaken. However, as my participants especially the experts argued, we should not lose sight of the fact that a PhD should be adding something to the body of knowledge, even if it is only that it is updating on what is already known to see if things have changed, altering the research site to see if there are differences by location or using a slightly different approach to the research to see if that yields variation in results and new knowledge.

8.1.5 Delivery of methods training: timing and recall, embedding in substantive topics, student heterogeneity

Issues pertaining to the administrative delivery of research methods training, specifically timing and the perennial question of whether to embed methods training within substantive topics to set it within the broader context of learning for students are also especially significant.

8.1.5.1 Timing of methods training

The majority of research training is typically frontloaded in the Masters years and 1st year of the PhD and indeed the ESRC postgraduate training and development guidelines stipulate an expectation a significant proportion of up to 60% of the 1st year of a PhD is devoted to training and 10% in years 2 and 3 (ESRC, 2005). This presents students with problems of recency of training and challenges in recalling relevant knowledge, when the time draws nears for when broader methods knowledge would arguably be of greatest use, that is in postdoctoral employment. Relating to the point above regarding quantitative methods training, 'use it or lose it' in relation to statistics and quantitative methods is especially pertinent, as research participants felt that this type of knowledge quickly faded in situations where training was not recent and the methods not utilised since.

8.1.5.2 Embedding methods training

There is nothing new in deliberating how best to deliver research methods training, be that packaged individually in a course module or embedded within a substantive topic area to make explicit the connection between research design, research methods and the topics and subjects that students learn about and are interested in. There have been no straightforward answers to this question and there exist champions for each approach on either side. However, from my assessment of the literature much research indicates that embedding methods within topics helps people learn them more effectively and mitigates the issue of students perceiving methods as somehow disjointed from their subject overall and consequently responding to them more negatively (Earley, 2013). It should be emphasised that this was not something that my research specifically investigated and my views on it are drawn from my review of evidence presented in the literature.

8.1.5.3 Postgraduate student heterogeneity

As was discussed above, and as argued by those such as Collinson and Hockey (1997) standardised and broad training programmes rely on a presumption of students benefiting from

these as they have sufficient homogeneity. Yet, if, as I have argued based on my research findings and as presented in the literature such as Deem and Brehony (2000), students are not in fact homogeneous and are instead a heterogeneous group made distinct from each other by their varying statuses and characteristics. Such characteristics include: being a Masters versus PhD student; international or domestic; studying full or part-time; gender; their capabilities and prior methodological knowledge, identities and preferences and whether they are seeking postdoctoral employment in any research sector academic or non-academic. This heterogeneity and variation among postgraduates affects their responses to, and their needs from, research methods training. In resonance with findings from the literature, my results showed that international students are more likely to agree with broad methods training and with this being compulsory than are their domestic counterparts. Moreover, part-time students tended to be less supportive of compulsory broad methods training than full-time ones. Males were more positive about broad methods training than females in the qualitative part of this study and males responding to the questionnaire also agreed more with compulsory quantitative and qualitative training than females. As such a greater degree of flexibility in training delivery and tailoring is required than is currently typically provided in the existing DTP and postgraduate / doctoral training programme structure.

This research also identified issues with combining Masters and PhD students in tutorial groups who have differing needs. On one hand, Masters students often have not yet selected their research topic whereas PhD students on the other are eager to work on their doctoral research thus sometimes seeing tasks during particular compulsory tutorials as of limited benefit and relevance to them. It is apparent that these two groupings can thus have quite opposite or at least different needs, Masters students need assistance in developing a research design, understanding the strengths and weaknesses of different methods and approaches. PhD students are more likely to need highly specific training in particular methods in which they lack sufficient knowledge, including depth of knowledge, or are new to them but they wish to use in their doctoral research project. This tension for doctoral students of being required to study broadly but needing to get their research project underway promptly is especially a problem with students because students are so ‘stretched’ under the new curriculum and training arrangements. It could be argued that perceiving tasks not of direct relevance to their doctorate as inconvenient and time wasting represents a rather narrow view of knowledge and training among some doctoral students. It is easy to criticise PhD students in this way and such critique could be valid if it were not for the crucial issue of the ‘overloaded shopping basket’ that I have highlighted. Doctoral students simply

do not have time or space within their PhDs as they are current structured to engage with that which does not appear of immediate or at least clear longer-term benefit to them. I believe that PhD students would embrace a wider curriculum, given the luxury of more time or fewer requirements, but that is not the current arrangement.

Recommendations are later made in this chapter seeking to improve the problems identified above in methods training delivery, structure, content and level, as well as how to mitigate issues of postgraduate student heterogeneity causing difficulties for students in adapting to standardised training programmes.

8.1.6 'Core researcher development skills' training

Turning from research methods training towards other employment-relevant skills that the ESRC anticipates postgraduate students will learn during their Masters and PhD. These are twofold: 1. General research skills such as: bibliographic and computing skills; teaching and other work experience; language skills; ethical and legal issues; research user engagement and maximising research impact and an understanding of intellectual property rights (IPR). 2 transferable skills such as: communication, network and dissemination; leadership, research management and relationship management and personal and career development.

Although my research did not specifically gather views on learning non-methods skills such as leadership, communication, impact during postgraduate degrees, a few of the student participants made relevant comments in relation to these during their qualitative interviews. These types of 'softer' employment-relevant skills do not seem to be being imparted to students, from the small number who expressed views although this cannot be taken as representative of all students. According to the results of this study, those students did not have time to attend conferences or to write research publications, some felt unprepared to be a postdoctoral academic feeling ignorant of the processes for writing and delivering lectures and one regretted not having conference organisation skills which they felt would be useful for employment. There was a sense that in relation to harnessing these types of softer skills, some students felt unprepared for the world of work that they hoped to soon encounter.

So, in the circumstances I have spent time describing and analysing has 'something got to give?' Let us review once again the social science doctorate and its associated requirements, which I described at the outset of this thesis as being like an overloaded shopping basket within which

increasing numbers of items are placed without any being removed. At present, something or rather someone is giving, and that is postgraduate students and arguably their academic institutions (under the burden of the additional administration of Masters and doctorates having become DTCs and now DTPs). Arguably, the training system, structure and expectations placed upon students are not 'giving'. Consequently, items are falling out of the shopping basket, with 'stretched students' unable to give any more.

My concern having conducted this research, is that the quality of submitted doctoral theses is likely to suffer. Theses may be submitted when they have to be in terms of timing (for submission and completion rates) as opposed to when the thesis is actually ready / has been sufficiently well drafted. As such, we may begin to see more students not passing their vivas or passing but with fairly major revisions and corrections to be done, then having to undertake these and have another viva. This will consequently actually mask delays in submissions, as the thesis will have technically been submitted on time, but this may only have been possible due to being submitted when it was not actually ready and was not sufficiently progressed.

What I argue should actually 'give' is the expectations placed upon students. Either the time period for carrying out a doctorate needs to be increased to 4-5 years, including the funding period for funded students, which I recognise is highly unlikely, or the requirements must be scaled back – the latter seems more feasible. There has to be an acceptance that if the ESRC really want breadth, then they do not also get the depth they desire in students training or vice versa. The two do not seem to be realistically attainable and if both are pursued within such a short doctorate (compared to the length of time taken in some other countries) then only lip service can really be paid to one; either breadth is fully pursued, and depth is not truly achieved or vice versa. Moreover, the softer / other transferable skills, such as communication, leadership, teamworking and impact are largely not being imparted to students from my research findings. This is a further concern as it is another key requirement / expectation of postgraduate degrees from the ESRC.

8.2 Strengths and limitations of study

As with any research, some especially successful and advantageous elements of this study and those less successful, and to some extent problematic, are worth noting.

8.2.1 Strengths

The mixed method design of this study, comprising a range of methods not only within the qualitative branch (standard qualitative interviews in one location, walking interviews and video diaries) as well as quantitative methods in the form of a questionnaire is a particular strength. This has enabled triangulation of data from questionnaires, interviews and video diaries with current postgraduates to see whether, and how, these data are in tension or if they largely accord with one another. Some differences were found, for example, on whether broad methods training should be compulsory in the doctorate and whether advanced training was feasible in the doctoral timeframe. However, there was also a high degree of consistency across views gathered using different methods, for example, agreement with broad research training in principle for doctoral students.

A further strength of this research is that the study methods also included some relatively innovative methods such as walking interviews and video diaries which will contribute to the body of knowledge surrounding the use of such methods, by practically applying them to this particular topic and within a sociologically-framed piece of research when walking methods have been more prevalent in other disciplines for example, geography and social geography.

In order to investigate change over time in the absence of having a longitudinal, repeat contacts research design, which was outwith the scope of a doctoral study, I analysed quantitative data across different years of PhD study from 1st to 4th year. Moreover, data were additionally gathered from employed PhD graduates, thus enabling some degree of comparison between the views of current doctoral students on methods training and its relevance to employment with those who are now employed.

8.2.2 Limitations

Due to the inevitable restrictions of being a single-handed doctoral researcher, the study was conducted primarily in one site (Edinburgh), mainly centred around the University of Edinburgh and with a relatively small number of participants compared with larger-scale studies conducted by multi-person academic research teams or research organisations. As participants were primarily from Edinburgh it is not appropriate to generalise these findings to the rest of Scotland or the UK. There may be something specific about the participants and students at the University of Edinburgh in terms of holding particular views and thus introducing bias into the results.

Moreover, questionnaire response rates were relatively low, although this is not unusual for online questionnaires estimated to typically receive response rates approximately 11% lower than other distribution methods of distribution (Fan and Yan, 2010) yet students are often unwilling to engage with other survey means (Saleh and Bista, 2017). However, this presents challenges for quantitative analyses as the number of respondents within sub-groups can become too small for meaningful analysis. This occurred for some variables such as academic institution and academic discipline, which would have been useful variables to cross-tabulate with views of compulsory broad training, employment relevance of the doctorate and whether advanced training is achievable but this was not possible in practice.

Another limitation of the study is that although efforts were made to contact economist students and proactively seek their views boosting their participation in this study ultimately, only those economist students and employed PhD graduate who happened to respond to the questionnaires were included due to a lack of timely response from the university Economics department, thus no targeted fieldwork could be conducted with this academic discipline. Economists are particularly important as changes by the ESRC to their methods training mean that they must now study some qualitative methods to some extent, a branch of methods that very much lies outside their usual methodological range that comprises statistics, econometrics and other quantitative methods. Chapter 4 of the thesis presented findings on whether current PhD students agreed that there should be broad methods training during the doctorate analysed by the type of methods that the student used for their PhD research project (primarily qualitative, primarily quantitative or mixed). Although primarily quantitative methodologies are used by those in a range of disciplines, as previously outlined some disciplines are especially associated with the use of quantitative methods such as economics and psychology. This finding of some opposition to broad training (and therefore that which includes qualitative training) among students using quantitative methods, may be indicative that the changes to doctoral methods training introduced by DTPs from 2017-18 that economics and psychology PhD students, for example, will need to be exposed to some level of qualitative methods training may not be well received.

In order to confirm or refute the above, it would have been very interesting to gain more student economists' views on the methods training changes to their postgraduate degree programmes, did they embrace or resist this? Were they able to see any value in having (qualitative) knowledge outside of their usual spectrum or not? There were also not many psychologists in the study, who

may also hold specific views of broad methods training, more typically using quantitative rather than qualitative methods, again a regrettable omission.

8.3 Conclusions

This thesis has described how the training environment for UK-based research students in the social sciences has been transformed over the course of four decades. In the 1970's research training was piecemeal and haphazard, by the late 2010s it has become extensive and systematic.

The background to these changes includes concerns over low completion rates and over students who did graduate successfully nevertheless not being prepared for the labour market that they entered. In addition to long-standing concerns that students were over-specialised and were graduating with poorly-developed quantitative skills, concerns also emerged about students with PhDs not having broader sets of competencies relating to communication and public engagement, impact, teamwork, leadership and related characteristics deemed important for a successful career as a researcher in the modern world.

The range of training available to research students has certainly become much more extensive and there is evidence that efforts to improve the associated pedagogy have also paid off in that training is accessible in more formats (including online and through dedicated training events as well as standard Masters courses).

One of this thesis' key objectives has been finding out how well the new training infrastructure is working. Through the analysis of evidence collected using interviews, diaries and questionnaires, findings have been presented that students and employed PhD graduates are positively-disposed to the ambition of the new training regime to provide them with a broader range of training to support both their thesis research and their preparations for careers as social researchers.

Evidence has also been presented that the quality of much of the training is regarded positively. This is consistent with other evidence about satisfaction with training, for example evaluation scores for NCRM events (such as the Research Methods Festivals at which satisfaction rates in evaluations by delegates are consistently well over 90%).

However, a number of concerns have also been identified. Some of these relate to the quality or relevance of particular courses, or to the issue of courses being compulsory rather than optional.

Concerns over the timing of courses relative to when they are needed have also been voiced. But more fundamentally there are concerns about the sheer volume of training which research students are now required to undertake. It is in this context that opinions have been expressed to the effect that 'something has to give'.

Addressing this problem is a particular challenge, for several reasons. One is that each of the elements of the expanded set of training requirements has good reasons available for its inclusion, making it difficult to identify ways in which the list of requirements might be cut down. Secondly, the new training landscape has been created in such a way that it standardises the requirements made of students, and this standardisation is in tension with the heterogeneity of students in terms of their prior experience, the training needed to complete their theses, and their diverse motivations. The fact that researchers have been known to recognise the value of training only some time after they have undertaken it makes for a further complication, as was demonstrated via the increased positivity regarding methods training among employed PhD graduates.

The development of DTCs, and subsequently DTPs, thus stand as an instructive case study of issues that are long-standing ones in pedagogical debates, including the merits and drawbacks of innovations being introduced in a top-down and standardised fashion, the relative advantages and disadvantages of training being compulsory or optional, and the challenge of ensuring that the content of the training meets the requirements of changing labour market.

For all these reasons it is reasonable to conclude that the training landscape will continue to evolve, and in that context the thesis identifies a number of suggestions for changes to be considered, before concluding with some comments on topics for future research in the field.

8.4 Recommendations for modifications to the social science doctorate and research methods training programme

To seek to improve or overcome the various challenges for students in the new training model social science PhD, a range of possible suggestions for the consideration of key educational policymakers in the UK are made below.

Compulsory versus non-compulsory broad methods training - recommendation

- Only make methods training compulsory for Masters and 1+3 PhD students (during their 1 / Masters year) (although with possible exemptions for those who know they are definitely

not seeking research / teaching related employment following their Masters) but methods training should definitely not be compulsory for PhD students. PhD students should instead select the most appropriate training for their needs in discussions with PhD supervisors and via ongoing annual needs assessments, further discussion of this below, including a thorough one to be conducted at the outset of the doctorate. This may alleviate some degree of doctoral students being overly 'stretched' that doctoral students are experiencing and allow them to get started on their PhD research as quickly as possible, identifying the training they actually and most need / would benefit from at a personal and individual level.

- As outlined above, I propose that broad methods training should not be compulsory for doctoral students. However, it should be encouraged that more qualitative students take some level of quantitative methods course pitched at a 'consumers of quantitative research' level, with short and intensive refresher training near the end of the doctorate if they are seeking postdoctoral research careers in academic or non-academic research-related employment.

Training and skills needs' assessments - recommendation

- Instead of any compulsory training for PhD students, in order to identify ongoing training gaps and needs among PhD students, needs assessments / skills reviews should be conducted more frequently than the current annual review process to identify gaps in their learning / training. This will help with the above point so that nothing is compulsory but training needs for doctoral students are identified and targeted.

Student heterogeneity - recommendation

- Take account of student heterogeneity in planning and delivering methods training far more than is currently done. Separate Masters and PhD students into different tutorial groups due to their varying needs for support and training being at different stages. Additionally, offer different levels of quantitative methods training pitched at the appropriate levels for qualitative as opposed to quantitative / mixed method research students. The former tend not to use quantitative methods personally but should know about them at a more basic level for reading research materials during their studies and for later employment while the

latter do use the methods directly and are likely to require more intensive / advanced training.

Problems with recency of training and recall - recommendation

- Offer refresher methods training, in particular in quantitative methods (short intensive 1- or 2-day courses etc.), for later year PhD students nearing the end of their degree programme to help with employment preparation.

Embedding methods training - recommendation

- The question of embedding research methods training, especially quantitative, in substantive courses should be reconsidered by stakeholders and this change should be made to postgraduate training infrastructures if it is viewed to be beneficial.

Timeframe for PhD completion / completion rates - recommendation

- Research funders and other relevant stakeholders should be more realistic about the amount of time it takes to do a PhD, especially one which gathers an extensive amount of original research data. Students should not be pressured students into submitting the doctoral thesis before it is actually ready in order to meet the 4-year timeframe. The 3 / 4 year timeframe could be less realistic for some doctorates due to the nature of the actual research conducted and unfeasible for some students who need longer due to heterogeneity among them, such as differing /less fast-paced learning styles, whether all elements of the PhD research question and overall study are well developed at a relatively earlier stage of the doctorate and so on. Although of course, this could also be an issue with the doctoral research design as any robust study should be developed to be feasible in the time available, and in this case, conducted by a solo researcher. As such a large component of doctorates is now expected to include research training (up to 60% of year 1), continuing to meet current expectations around completion rates may present a substantial challenge for PhD students. It should especially be noted that the length of PhDs is greater in many other countries such as those around Europe and the USA and these doctorates contain a higher proportion of research training than the British doctorate used to.

Negative experiences of doctoral students such as isolation, lack of feeling valued – recommendation

Some issues identified as by PhD students and cited in previous research as far back as the 1990s, regrettably still remain issues today such as stress, isolation, not feeling valued by a department, not feeling part of a doctoral community. Consequently, suggestions are made to seek to improve this:

- Again seek to improve doctoral student isolation via far more institutional effort regarding PhD student communities, consistently and proactively inviting students to departmental seminars, making them feel included, valued and respected academically, having doctoral student groups / seminars but not forcing this or making it compulsory.

- Provide proper study space early (shared offices that do not have too many students in them) on in the doctoral students' degree. I would suggest that when they are studying the most courses (in the Masters year or as it currently done in the PhD 1st year) is the most important time as this is when they are at university the most and also when relationships and connections with other students and staff can be made early on which will then help address the isolation noted above. Actual postgraduate communal computing rooms really must be provided at all DTP institutions (not expecting students to bring their own laptops in with them as occurs at the University of Edinburgh postgraduate study space where no computers are provided only keyboards and monitors)

Post-92 universities feeling left 'outside the golden circle' - recommendation

- Retain the DTP type structure as this widens participation among institutions to include more post-1992 institutions so there is less marginalisation of institutions to be outside 'the golden circle'. In turn, this should lessen the potential impacts on contributing to social inequalities for example in relation to social class identified in the literature, in terms of diminished participation in postgraduate higher education.

8.5 Suggestions for potential future research

A number of suggestions for directions for potential future research in this area are made below:

- ***Gather the views of economics, psychology and social anthropology postgraduate / doctoral students***: unfortunately, this research did not manage to reach many economics students, psychology and social anthropology students. Only a few students in each of those disciplines responded to the current PhD student questionnaire. These students are of particular interest to the topic of postgraduate research methods training as from 2017 economists, for example, became required to study qualitative methods to some level as well as their more standard methodological range of econometrics, cost /benefit analysis and economic statistical modelling and so on. Further research could usefully gather the views of students and employed graduates within these disciplines to see how they have responded to the new training infrastructure which could arguably be seen to contain elements in direct contrast to what they would typically have learned in the past. It would be highly useful to explore whether such students perceived value in a methodological range or whether they were resistant to this and viewed it more as an irrelevant and potentially burdensome inconvenience.

- ***Conduct similar research in other study sites especially around the UK in different universities to check if views are similar***: as was emphasised earlier this research was focused mainly in Edinburgh and as such primarily gathered the views of students at the University of Edinburgh. Carrying out similar research in other key university cities in the UK in which there are DTPs would be very beneficial, to explore whether there are differences in views from my findings.

- ***Conduct larger scale research, perhaps a questionnaire with a far larger sample size to enable an increased amount of analysis with different variables such as academic discipline and academic institution of doctoral study***: as with any doctoral research project inevitably the sample size has to be fairly small, as it must be realistically achievable fieldwork for a lone researcher within 3 – 4 years. Others with more extensive capacity could conduct similar research on a larger scale either using quantitative, qualitative methods or both again to see if similar findings resulted. Moreover, a questionnaire with a

far larger sample size would enable bivariate analysis using key variables of interest that I was ultimately unable to analyse (due to small within category numbers) such as PhD students' academic discipline and the university they attended.

- ***Conduct research with employers of researchers to investigate if new training infrastructure is providing them with the kinds of doctoral graduates they seek compared with prior to the changes***: further research could be conducted with those who employ social science PhD graduates and Masters graduates to examine whether the link between postgraduate study and later employment has indeed become stronger, as intended.

- ***Cross-national comparison of postdoctoral training in the UK with other European and Western countries***: this research was focused in one study site within the UK, however, there are different doctoral training arrangements internationally. Typically, PhDs take longer in the USA and parts of Europe and those in the USA have contained a large training proportion for some time. Comparing postdoctoral training infrastructures across a set of key countries would prove a very interesting avenue for future research.

- Conduct further research to investigate how different models of learning especially within the doctorate are understood and the pedagogical principles underpinning this, i.e. what is the move away from the apprenticeship model is a move towards (that is, seemingly the research training model and professionalising the student as a researcher).

8.6 Concluding remarks

With reference to the above point on changing constructions of the 'ideal' model for the social science doctorate, it is clear and has been argued throughout this thesis, that in the context of more flexible work environments, careers, including academic ones, are necessarily changing. Sennett (1998) proposed that the move away from fixed and predictable career patterns towards greater flexibility is the source of anxiety and uncertainty among workers. It follows that to prepare

people for such new work environments where they are required to be more adaptable, their training should be broad but also prepare them to be flexible and to specialise where necessary. Almost certainly as the skills required of a researcher grow, they will need to prepare for 'life-long learning'. This contrasts with prior constructions of the doctorate such as those described by Luker (2008). Luker's doctoral training, typical of that in the 1960s, emphasised mastering an arcane field of knowledge and becoming an expert which by today's standards, was incredibly narrow, as Luker (2008) indeed recognises and argues. The future of the social science doctorate is difficult to predict for sure, however, what is certain is that it will always be shaped and affected by the prevailing discourses and constructions of the time around work, employment and education and the crucial relationships between these. It seems to me, however, that flexibilisation and breadth are likely to continue within social science doctorates at least for the foreseeable future and potentially to endure for a long time.

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10 Appendices

10.1 Appendix 1: Research instruments: Information sheets; Consent forms; Interview schedules and Questionnaires

THE UNIVERSITY *of* EDINBURGH

CONSENT FORM – POSTGRADUATE STUDENTS: WALKING INTERVIEWS

PROJECT TITLE

Should we be Creating Jacks and Jills of All Trades in Social Research? : Assessing Responses to Breadth and Depth Policy Changes in Postgraduate Research Methods Training.

PROJECT SUMMARY

This is a research study on people's responses to changes in higher education training, with a move to learning both qualitative and quantitative research methods and making some courses mandatory across all disciplines. Part of this study asks postgraduate students at the University of Edinburgh to describe their experiences of higher education study to date and reflect on their current, and past, experiences of studying research methods by taking part in a walking interview. It will also ask you to think about whether or not learning a broad set of research methods could be useful for what you decide to do during and after university, such as conducting your research and later seeking to gain employment.

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), and (4) you are taking part in this research study voluntarily (without coercion).

Participant's Name (Printed)

_____

Participant's signature Date

_____

Researcher's Name (Printed)

_____

Researcher's signature Date

_____

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Participant Information Sheet – WALKING INTERVIEWS

PROJECT TITLE

Should we be Creating Jacks and Jills of All Trades in Social Research? : Assessing Responses to Breadth and Depth Policy Changes in Postgraduate Research Methods Training.

INVITATION

You are being asked to take part in a research study on postgraduate students' experiences of studying research methods for their postgraduate degree at the University of Edinburgh.

WHAT WILL HAPPEN

In this study, you will be invited to give your views during a face-to-face walking interview outdoors, describing your current and past experiences of studying research methods in higher education. You will also be asked about how you feel when learning new things, especially those you do not initially understand. Additionally, the interview will seek your opinion on whether or not broad methods training is useful for postgraduate social science students. Finally, it will aim to explore whether you perceive a link between the kind of postgraduate methods training that you do at university, and future employment prospects. This study aims to understand current social science postgraduate students' views on recent higher education policy changes, that make qualitative and quantitative research methods training mandatory across all social science disciplines.

The interview will primarily take place outdoors, walking around the local area around the main campus University of Edinburgh and the Meadows. Depending on whether the lecture theatre / rooms are unoccupied at the time of interview, we may also enter the room(s) in which you were taught research methods, for part of the interview.

Your views will be recorded via an audio recording device and a booster microphone, designed for conducting research outdoors.

TIME COMMITMENT

The interview typically lasts for up to 1 hour and takes place only once. It may take slightly longer, depending on how much you wish to say.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without giving an explanation. Withdrawing from this study, will not affect your studies here at the University of Edinburgh in any way. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. If you decide following this interview, that you no longer wish to take part, you have up to 2 weeks to contact me from today.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

BENEFITS AND RISKS

There are no known benefits or risks for you in this study other than contributing to this research. The research will largely take place largely, so it is important to wear appropriate clothing for the weather at the time for your own comfort.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. There will be no reimbursement for this study as it takes place on university campus during term time.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you except a code number for your interview and a pseudonym in the writing up of the study. No one will link the data you provided to the identifying information you supplied. Your interview data will be kept on a password protected computer, to which only I have access. All information relating to you as part of this study, will be destroyed 1 year after the study is completed, finalised and published (if this occurs).

FOR FURTHER INFORMATION

Professor Graham Crow is the principal supervisor for this doctoral study and he would be happy to answer any questions that you may have about this study. Professor Crow can be contacted at: or [personal data removed].

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PROJECT TITLE

Should we be Creating Jacks and Jills of All Trades in Social Research? : Assessing Responses to Breadth and Depth Policy Changes in Postgraduate Research Methods Training.

Postgraduate Student Walking Interviews: Topic Guide

Introductory Question

- Did you study for a degree/degrees before coming to do a PhD at the University of Edinburgh? If so, which degree(s) and where? (***keep this question and answer brief)***

Main Questions

Motivations for postgraduate study

- Could you tell me about what your main reasons were for doing your PhD? (**Prompts**: to gain more knowledge; due to a passion for my topic/ the discipline I am in; due to viewing a PhD as an intellectual /creative challenge; to gain a qualification to try to get a specific kind of job. **Probe:** anything about finance (e.g. funding) that has affected their decisions around PhD study?)

Postgraduate Study at Edinburgh University

- What is the title of your PhD study and please could you tell me a bit about what you would like to find out about?

- Which methods are you using in your doctoral research? (***again keep this fairly brief)***?

Research Methods Training

- Please tell me about whether you had studied much in the way of research methods before doing this postgraduate degree, and very briefly what you studied.

- We discussed before, that you did at least one of the mandatory methods courses (CQDA, Data Collection and Research Design) earlier on in your PhD or MSc year.

Were these courses mandatory for you or did you choose to do them? What did you think about studying these /that (mandatory) course(s)?

(**Positive prompts:** did you learn new things? Was what you learned useful for your doctoral / MsC research? Will it be useful for after university, in a job; Did the courses help you get to know other doctoral /Masters students/ help guard against isolation.

Negative prompts: are they an inconvenience/time away from your doctoral research; too challenging; frustrating; are they overly generic and not immediately relevant for your doctoral research / your academic discipline)?

- Do you remember how do you felt when you were learning (new) things during those methods courses, especially any parts that you did not immediately understand? (**Prompt:** did you embrace this new information, that you do not understand yet, as a challenge to be taken on and overcome? Or did things you don't immediately understand make you feel anxious?) Please tell me more about your reply.

- Do you think that postgraduate research methods training for students should be broad (covering range of different methods) or more focused within a particular set of methods chosen by the student? Please tell me more about the reasons for your views.

- Have you done any more advanced methods courses during your PhD or MSc year? Briefly what were these? Please tell me about how doing these arose. (**Prompt**: did you decided you wanted to do them and then discussed it with your supervisor; was it/they recommended within your postgraduate programme; did your supervisor suggest that you should do it?)

- Did you feel you had enough time within your doctorate, to do the advanced courses?

- Do you think it is feasible for doctoral students to do both basic broad training in a range of methods, as well as pursuing advanced training? (**Prompt:** is this achievable within the timeframe?

- Do you think your view about research methods courses has changed as your PhD has progressed or has it remained the same? **Probe:** if it has changed, in what ways has it changed?

- Thinking back to what we talked about earlier in relation to your original motivations for doing your PhD, have your views on the purpose of doing a PhD changed at all over time?

Final Questions

Plans after doctoral degree and university

- What do you plan to do after university, would you like to get a job or something else?

- If a job, do you have an idea of what kind of job role you would like to do?

- Have these plans around work influenced your choices regarding / views on research methods training? (**Probe:** do you feel that you have actually had choices regarding research methods training?)

- Part of the changes to doctoral research methods training on the part of the ESRC (and as implemented locally by HE institutions) are to provide a stronger link between doctoral study and training for future employment. Do you think that a doctorate should prepare postgraduates for work and if so, in what ways?

- Do you have anything else that you'd like to say, that we haven't already discussed?

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Participant Information Sheet – Student Video Diaries

PROJECT TITLE

Should we be Creating Jacks and Jills of All Trades in Social Research? : Assessing Responses to Breadth and Depth Policy Changes in Postgraduate Research Methods Training.

INVITATION

You are being asked to take part in a research study on social science postgraduate students' experiences of studying research methods for their postgraduate degree at the University of Edinburgh.

WHAT WILL HAPPEN

In this study, you are being invited to give your views in a diary (either video, audio or written). You are being asked to talk about your experiences of studying your current core research methods course and to reflect on how the course has gone that week, and whether the learning could be useful in the future for you. This is with the aim of understanding current social science postgraduate students' views on recent higher education policy changes to making qualitative and quantitative research methods training mandatory across all social science disciplines.

If you do a video diary, this will be recorded using your own mobile phone device or PC / laptop (if webcam and mic enabled) and will be typically up to 2 minutes long. It will be recorded once a week. The first and last video diaries will be up to 5 minutes long.

TIME COMMITMENT

2 minutes, once a week until the end of the teaching term. Five minutes for the very first and last video diaries

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without giving an explanation. Withdrawing from this study, will not affect your studies here at the University of Edinburgh in any way. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed.

You are full in control of what you wish to say, and the topics provided in the diary instructions are only as a guide. You do not have to talk about anything that you do not wish to.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

BENEFITS AND RISKS

There are no known benefits or risks for you in this study other than contributing to this research.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. There will be no reimbursement for this study as it takes place on university campus during term time.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you except a code number for your interview and a pseudonym in the writing up of the study. No one will link the data you provided to the identifying information you supplied. Your diary data will be kept on a password protected computer, to which only I have access. All information relating to you as part of this study, will be destroyed 1 year after the study is completed, finalised and published (if this occurs).

FOR FURTHER INFORMATION

Professor Graham Crow is the principal supervisor for this doctoral research study and he would be happy to answer any questions that you may have about this study. Professor Crow can be contacted at: [personal data removed].

THE UNIVERSITY of EDINBURGH

VIDEO DIARY INSTRUCTIONS

PROJECT TITLE

Should we be Creating Jacks and Jills of All Trades in Social Research? : Assessing Responses to Breadth and Depth Policy Changes in Postgraduate Research Methods Training.

Thank you very much for agreeing to take part in my PhD research study. Hopefully you will enjoy completing a video (or other style of diary, depending on your preferences) and might even find it fun. Here is some information, in question and answer style, about completing your video diary.

What is involved in taking part in this research?

You would need to commit to recording a short video diary each week, for the rest of this university term. If you prefer to do an audio or written diary, then the process is similar. Please write up to a 1-page Word document diary entry each week (for written diaries) or record a short audio each week (for the audio diaries), using either your mobile phone or an audio recorder.

When should I record my video diary?

Please record your video diary on your mobile phone (or on your laptop or PC if that's easier for you), soon after you have your 'Research Design' class.

You can also choose whether you want to record your diary immediately after your lecture has taken place or to wait until you have also had your tutorial for the course.

Please record your video diary **as soon as you can**, after the classes have taken place. If you cannot do this immediately after, then please record your video diary in a quiet place, at the next best opportunity, for example in the evening when you are at home after classes.

What if I forget to record it?

Do not worry if you forget to record your video diary that particular week or are unable to for some reason. I will help you to remember, by getting in touch with you by email each Thursday to ask you to record your video diary for that week very soon, if you haven't already. I will also ask you to put it in my dropbox. If I don't see your video diary in my dropbox by the end of Friday, then I'll get in touch with you to check if everything is ok. If you do not manage to record a video diary one week, then please do not give up, just record your next video diary as soon as you are able to and get in touch with me to let me know this.

How long should my video diary entries be?

Typically, your video diary should be short, **up to just 2 minutes long,** although there are exceptions to this (please see below).

How long should my very first and last video diaries be and what should they include?

The first and last video diaries will be a little different. **Please make your first and last video diaries each up to 5 minutes long.** In order to make it easier to upload your **5-minute video diary to dropbox, you will likely find it easier to record it in shorter clips (two 2-minute clips and one 1-minute clip) that all form part of the same first video diary entry.** Video diaries from the 2nd video onwards, should be the usual 2 minutes long, except for the last video diary.

Your first video diary can ideally be used as a reflection on any previous core methods courses that you may have done last term, as well as expressing your views at this initial stage on whether you feel students should have to study mandatory methods course. It can also be a forward look as you may also like to discuss what you hope to get out of the 'Research Design' course.

The last video diary should be a backward look; did things turn out on the course as you expected them to at the start, as well as expressing a view at this final stage of the course on whether students should need to do compulsory methods courses. Has your view changed at all from the view you held at the outset of the term?

What sort of things will I talk about in the video diaries?

I am really interested in your experiences as a postgraduate student, studying this / these compulsory research methods course and any other compulsory methods courses that you may have studied recently. I am seeking your views and experiences, there are no right or wrong answers about this and what you tell me won't get back to the lecturers on the course. You can tell me about whatever you would like to regarding your experiences of studying these courses, but as a guide, here are some possible topics that you might like to talk about in your video diary:

- Generally, how has the course gone for you that particular week?
- What has been good about the course that week and why?
- What has been not so good about the course that week and why?
- What sort of things have you been learning about that week? How have you felt learning these things (any anxiety, feelings of frustration or enjoyment / satisfaction)?
- Have you learned anything that you think might be useful to you later on: 1. In your doctoral / Masters research, 2. In future jobs?
- What do you think in general about the fact that many students need to study compulsory research methods courses? Has your view changed at all from last week?

I'm confused about something to do with my video diary, what should I do?

If you have any questions at all about my PhD research or about recording your video diary, please email me at [personal data removed].and I will get back to you as soon as I can. If you prefer you can call me on: [personal data removed].

Thanks again so much for taking part in this research. Your views are very important to help understand what students think about doing compulsory research methods courses. I can't do this study without you so thanks again so much!

Thanks,

Amanda Vettini

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PROJECT TITLE:

Should we be Creating Jacks and Jills of All Trades in Social Research? : Assessing Responses to Breadth and Depth Policy Changes in Postgraduate Research Methods Training.

Key Individuals Interviews: Topic Guide

Introductory Questions

- Please briefly tell me a bit about your current role and some of your main job roles up to this point. (***keep this question and answer brief)***
- What methods do you prefer to use in research?
- Are there any particular methods that you prefer to teach (if interviewee has a teaching role: does your current teaching include any methods teaching and if so which ones)?

Main Questions

Research Methods Training

- What changes have you noticed in the research methods training programmes for PhD students whilst you've been involved in academia?

- What kinds of methods training do you think is important for social science PhD students to have? (prompt: what sorts of methods should it include?)

- Do you think parts of this training should be compulsory or should students have a free choice regarding the methods they learn about?

- What do you think the purpose of a PhD should be (prompt: should it be to provide an original contribution to research or prepare students for employment or something else?)

- Do you think that postgraduate research methods training for students should be broad (covering range of different methods) or more focused within a particular set of methods chosen by the student? Please tell me more about the reasons for your views.

- What do you think could be the advantages of a PhD student learning core methods to a basic level as well as more advanced training in particular methods of key interest / relevance?

- Do you think there could be any disadvantages for PhD students in learning core and specialist methods?

- Do you think it is feasible for doctoral students to do both basic broad training in a range of methods, as well as pursuing advanced training? (**Prompt:** is this achievable within the timeframe? ***If not already covered in disadvantages question above***

- Do you think your view about postgraduate research methods courses has changed as your academic career has progressed or has it remained the same? **Probe:** if it has changed, in what ways has it changed?

- Do you have anything else that you'd like to say, that we haven't already discussed?

PhD Postgraduate Research Methods Training - Employed Researcher Questionnaire

Page 1: Introduction and first question

Dear Researcher,

My name is Amanda Vettini and I am studying for a PhD which is looking at postgraduate training in the social sciences. Amongst other things I am keen to examine former PhD students' views of postgraduate research methods training and potential links between this training and preparation for research / teaching employment.

I would be very grateful if you would complete this questionnaire telling me your honest views and experiences of this training and also about your postdoctoral employment.

All respondents (who provide an email address at the end of the questionnaire) will be entered into a prize draw to win a £20 Amazon gift voucher.

The survey should take around 20 minutes to complete, although it could take longer if you add your own free text responses where there is an option to do so. There are a mix of closed and open text questions in the questionnaire. Some questions are optional and please skip any questions that do not apply to you.

Survey results are entirely anonymous and I will not identify any institution, individual or their views.

THANK YOU - YOUR VIEWS ARE VERY IMPORTANT.

Amanda Vettini, PhD student, University of Edinburgh

[personal data removed]

Q1 Did you complete a PhD in a social science subject, before gaining your current employment?

□ Yes

□ No

PhD discipline and motivations for study

Which discipline was your PhD in? (You may select more than one if multi- disciplinary). If none are appropriate, please select 'Other' and write down the subject area. *Required*

- [ ] African Studies
- [ ] Canadian Studies
- [ ] Criminology
- [ ] Economics
- [ ] Education
- [ ] Geography
- [ ] Global Health Policy
- [ ] History
- [ ] International Development
- [ ] Politics and International Relations
- [ ] Psychology
- [ ] Science and Technology Studies
- [ ] Social Anthropology
- [ ] Social Policy
- [ ] Social Work
- [ ] Sociology
- [ ] Socio-Cultural Studies
- [ ] South Asian Studies

If you selected Other, please specify:

At which institution and in which country did you study for your PhD?
Required

What were your motivations for doing a PhD? *Required*

Please select between 1 and 9 answers.

- [ ] My interest in the subject
- [ ] Improving my career prospects for an academic/research career
- [ ] Improving my career prospects outside of an academic/research career
- [ ] I was encouraged by a former academic tutor/supervisor
- [ ] Funding was available
- [ ] It felt like a natural step for me
- [ ] I felt inspired to work with a particular academic
- [ ] Some of my friends are doing postgraduate degrees
- [ ] My parents encouraged me to

If you selected 'Other' please specify:

Of the motivations for doing a PhD that you selected above, which was your **main** motivation? *Required*

If you selected Other, please specify:

Why did you choose your particular PhD degree subject? *Please select as many as apply to you.* *Required*

Please select between 1 and 8 answers.

- [ ] I enjoy studying this subject
- [ ] I have previously done well in this subject
- [ ] I am interested in the content of the course
- [ ] I needed to complete this course to enter a particular profession / occupation
- [ ] I think it will lead to good employment opportunities in general
- [ ] I had difficulty deciding and it seemed like a reasonable option
- [ ] I was advised that the course would be appropriate for me

If you selected Other, please specify:

Research Methods Training (During and Since Doctorate

What research methods training did you undertake during your PhD? *Please select all that apply. You may select up to 10 methods here. If you wish to tell me about more, then please type them into in the open text box below.*
Required

- [ ] Actor Network Theory
- [ ] Biographical methods / Oral history
- [ ] Delphi technique
- [ ] Descriptive statistical analysis (e.g. correlation; levels of measurement; variance
- [ ] Diary methods
- [ ] Digital social research
- [ ] Econometrics
- [ ] Ethnography
- [ ] Evaluation research
- [ ] Event history analysis
- [ ] Grounded theory
- [ ] Latent variable models
- [ ] Mixed methods
- [ ] Multilevel modelling
- [ ] Observation
- [ ] Participatory / Action research
- [ ] Phenomenology
- [ ] Qualitative analysis software e.g. NVivo
- [ ] Qualitative data analysis approaches (e.g. discourse; content; thematic analysis etc.)
- [ ] Qualitative interviewing
- [ ] Qualitative longitudinal research
- [ ] Quantitative analysis software e.g. SPSS, Stata, R etc
- [ ] Quantitative longitudinal research
- [ ] Regression methods
- [ ] Secondary data analysis
- [ ] Small area estimation
- [ ] Social network analysis

A

- ☐ Spatial data
- ☐ Statistical theory and methods of inference (e.g. probability; (non)/ parametric statistics; Bayesian methods etc.)
- ☐ Survey and questionnaire
- ☐ Systematic
- ☐ Visual

Did you do any other methods training than that selected above? *If so, please write down here and number each method* e.g. 11. Biometric data collection

Looking at the list of methods you have selected above, please type in the name of each one below, in order to number them.

For example, Method 1 - Actor Network Theory

Method 1 (*Please type name of method)* □ *Required*

Method 2 (*please type name of method)* □ *Required*

Method 3 (P*lease type name of method)* □ *Required*

Method 4 (P*lease type name of method)*

Method 5 (P*lease type name of method)*

Method 6 (P*lease type name of method)*

Method 7 (P*lease type name of method)*

Method 8 (P*lease type name of method)*

Method 9 (P*lease type name of method)*

Method 10 (P*lease type name of method)*

For each research method that you selected in the above list, please indicate whether you consider it to be core / basic training or advanced training and whether it was compulsory or optional within your postgraduate degree programme.

More info

	Whether compulsory or not		Level of training	
	Compulsory	Optional	Basic / Core	Advanced
Method 1	○	○	○	○
Method 2	○	○	○	○
Method 3	○	○	○	○
Method 4	○	○	○	○
Method 5	○	○	○	○
Method 6	○	○	○	○
Method 7	○	○	○	○
Method 8	○	○	○	○
Method 9	○	○	○	○
Method 10	○	○	○	○

For any **additional methods training during your PhD** that you have mentioned above, please indicate whether this was core or advanced, compulsory or optional.

Other ways of undertaking methods training

Are there any other ways that you learned about research methods during your PhD study? *Pleaseselectallthatapply*

Please select at least 1 answer(s).

- [ ] Peers
- [ ] Books / journal articles
- [ ] Online resources (please state which)
- [ ] Conferences / seminars
- [ ] None
- [ ] Other

Which online resources did you use?

If you selected Other, please specify:

Further methods training since PhD

Have you undertaken any further research methods training **since** your PhD ended?

Required

- ○ Yes
- ○ No

In what form was this further methods training? *Optional*

- ☐ One-to-one training from a colleague
- ☐ Training course run by my employer
- ☐ Training course run by an external organisation
- ☐ Books / journal articles
- ☐ Online resources (please state which)
- ☐ Conferences / seminars
- ☐ Other

Which online resources did you use?

If you selected Other, please specify:

Career aspirations - before, during and after PhD qualification

What were your career aspirations for when you had completed your doctorate, before studying, during studying, after your award and now? *Required*

Please don't select more than 4 answer(s) per row.

Please select at least 1 answer(s).

Please don't select more than 1 answer(s) in any single column.

	Before PhD	During PhD	Immediately after PhD	Now
Career in higher education - primarily research and teaching	☐	☐	☐	☐
Career in higher education - primarily research	☐	☐	☐	☐
Career in higher education - primarily teaching	☐	☐	☐	☐
Other role in higher education	☐	☐	☐	☐
Research career outside higher education	☐	☐	☐	☐
Other - please specify	☐	☐	☐	☐
Teaching career outside higher education	☐	☐	☐	☐
Self-employment/running	☐	☐	☐	☐

If you selected 'Other' for any of the above, please specify what this role was.

Teaching During PhD

Did you do any teaching at higher education level during your doctoral studies?
Required

- Yes
- No

What kind of teaching did you do? e.g. tutoring, lecturing etc.

What course(s) did you teach on and at which institutions?

How long did you teach for in total, during your PhD?

Postdoctoral Employment

Immediately following the completion of your doctorate, what did you do? *Required*

- [ ] Paid work in higher education
- [ ] Unpaid work in higher education
- [ ] Paid work outside higher education
- [ ] Unpaid work outside education
- [ ] Travelled
- [ ] Unemployed
- [ ] Other

If you selected Other, please specify:

How long did it take you to secure your first paid post after submitting your PhD thesis?

What is your current **main** employment?

If you selected Other, please specify:

How long have you worked in your current main employment? *Answer with approximate start date* □ *Required*

Dates need to be in the format 'DD/MM/YYYY', for example

(dd/mm/yyyy

Please list all your previous employers since gaining your PhD qualification, that you feel are relevant to your doctoral qualification (together with approximate start and end dates). For example, Researcher at the Scottish Government, March 2010 - March

2015. If you have had no other employers since your PhD apart from your current one, please type 'None'. *Required*

Would you describe yourself as an Early Career Researcher?

- Yes
- No

Please outline the reasons for your answer.

Which research methods have you used **at all** during your **current employment**? *Please select all that apply* * *Required*

- [ ] Actor Network Theory
- [ ] Biographical methods / Oral history
- [ ] Delphi technique
- [ ] Descriptive statistical analysis (e.g. correlation; levels of measurement; variance etc.)
- [ ] Diary methods
- [ ] Digital social research
- [ ] Econometrics
- [ ] Ethnography
- [ ] Evaluation research
- [ ] Event history analysis
- [ ] Grounded theory
- [ ] Latent variable models
- [ ] Mixed methods
- [ ] Multilevel modelling
- [ ] Observation
- [ ] Participatory / Action research
- [ ] Phenomenology
- [ ] Qualitative analysis software e.g. NVivo
- [ ] Qualitative data analysis approaches (e.g. discourse; content; thematic analysis etc.)
- [ ] Qualitative interviewing
- [ ] Qualitative longitudinal research
- [ ] Quantitative analysis software e.g. SPSS, Stata, R etc.
- [ ] Quantitative longitudinal research
- [ ] Regression methods
- [ ] Secondary data analysis
- [ ] Small area estimation
- [ ] Social network analysis
- [ ] Spatial data analysis
- [ ] Statistical theory and methods of inference (e.g. probability; (non) / parametric statistics; Bayesian methods etc.)
- [ ] Survey and questionnaire design

- [ ] Systematic review
- [ ] Time series analysis
- [ ] Visual methods
- [ ] Other

If you selected Other, please specify:

Which research methods have you used **at all** during your **previous employment**, since gaining your PhD qualification? *Please select all that apply.*

Required

- [ ] Actor Network Theory
- [ ] Biographical methods / Oral history
- [ ] Delphi technique
- [ ] Descriptive statistical analysis (e.g. correlation; levels of measurement; variance etc.)
- [ ] Diary methods
- [ ] Digital social research
- [ ] Econometrics
- [ ] Ethnography
- [ ] Evaluation research
- [ ] Event history analysis
- [ ] Grounded theory
- [ ] Latent variable models
- [ ] Mixed methods
- [ ] Multilevel modelling
- [ ] Observation
- [ ] Participatory /
- [ ] Phenomenology
- [ ] Qualitative analysis software e.g. NVivo

- [ ] Qualitative data analysis approaches (e.g. discourse; content; thematic analysis etc.)
- [ ] Qualitative interviewing
- [ ] Qualitative longitudinal research
- [ ] Quantitative analysis software e.g. SPSS, Stata, R etc.
- [ ] Quantitative longitudinal research
- [ ] Regression methods
- [ ] Secondary data analysis
- [ ] Small area estimation
- [ ] Social network analysis
- [ ] Spatial data analysis
- [ ] Statistical theory and methods of inference (e.g. probability; (non) /parametric statistics; Bayesian methods etc.
- [ ] Survey and questionnaire design

Systematic review | Time series analysis | Visual methods

None | Other

If you selected Other, please specify:

Which of the above research methods, have you used **most frequently** since being employed after your doctorate? *Please select all that apply.* *Required

- Actor Network Theory
- Biographical methods / Oral history
- Delphi technique
- Descriptive statistical analysis (e.g. correlation; levels of measurement; variance etc.)
- Diary methods
- Digital social research
- Econometrics
- Ethnography
- Evaluation research
- Event history analysis
- Grounded theory
- Latent variable models
- Mixed methods
- Multilevel modelling
- Observation
- Participatory / Action research
- Phenomenology
- Qualitative analysis software e.g. NVivo etc.
- Qualitative data analysis approaches
- discourse; content; thematic (e.g. analysis etc.
- Quantitative analysis software e.g. SPSS, Stata, R etc.

- [ ] Secondary data analysis
- [ ] Qualitative interviewing
- [ ] Qualitative longitudinal research
- [ ] Quantitative longitudinal research
- [ ] Regression methods
- [ ] Small area estimation
- [ ] Social network analysis
- [ ] Spatial data analysis
- [ ] Statistical theory and methods of inference (e.g. probability; (non)/ parametric statistics; Bayesian methods etc.
- [ ] Survey and questionnaire design
- [ ] Systematic review
- [ ] Time series analysis
- [ ] Visual methods
- [ ] Other
- [ ] None

If you selected Other, please specify:

Which of the research methods above have you found it **useful to know something about**, even if you have not used them directly? *Please select all that apply.* *Required*

Please select at least 1 answer(s).

- [ ] Actor Network Theory
- [ ] Biographical methods / Oral history
- [ ] Delphi technique
- [ ] Descriptive statistical analysis (e.g. correlation; levels of measurement; variance etc.)
- [ ] Diary methods
- [ ] Digital social research
- [ ] Econometrics
- [ ] Ethnography
- [ ] Evaluation research
- [ ] Event history analysis
- [ ] Grounded theory
- [ ] Latent variable models
- [ ] Mixed methods
- [ ] Multilevel modelling
- [ ] Observation

- [ ] Phenomenology
- [ ] Qualitative analysis software e.g. NVivo etc.
- [ ] Qualitative data analysis approaches (e.g. discourse; content; thematic analysis etc.)
- [ ] Qualitative interviewing
- [ ] Qualitative longitudinal research
- [ ] Quantitative analysis software e.g. SPSS, Stata, R etc.
- [ ] Quantitative longitudinal research
- [ ] Regression methods
- [ ] Secondary data analysis
- [ ] Small area estimation
- [ ] Social network analysis
- [ ] Spatial data analysis
- [ ] Statistical theory and methods of inference (e.g. probability; (non)/ parametric statistics; Bayesian methods etc.)
- [ ] Survey and questionnaire design
- [ ] Systematic review
- [ ] Time series analysis
- [ ] Visual methods
- [ ] None

If you selected Other, please specify:

Why has it been useful to know about these research methods? *Please select all that apply*

- [ ] To understand the work of a colleague

- [ ] To understand a journal article / seminar better
- [ ] To be able to understand research bids and tenders for work
- [ ] To have an understanding of the pros and cons of different research methodologies and design
- [ ] Other

If you selected 'Other', please specify:

To what extent do you agree that research methods training during your PhD proved an effective preparation for your 'Current' employment and your 'Desired' employment (if different)?

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Effective for current employment	☐	☐	☐	☐	☐
Effective for desired employment	☐	☐	☐	☐	☐

Overall, to what extent have each of these possible ways of learning about research methods, been useful or not useful for you for learning about **qualitative research methods** (with 1 being 'Not at all useful' and 5 being 'Very useful' ? □ *Required*

Please don't select more than 1 answer(s) per row.

Please select between 7 and 8 answers.

	1 - Not at all useful	2 - Not very useful	3 - Fairly useful	4 - Useful	5 - Very useful
Research methods training during PhD	☐	☐	☐	☐	☐
One-to-one training from a colleague	☐	☐	☐	☐	☐
Course run by my employer	☐	☐	☐	☐	☐
Course run by an external organisation	☐	☐	☐	☐	☐
Books / journal articles	☐	☐	☐	☐	☐
Online resources	☐	☐	☐	☐	☐
Conferences / seminars	☐	☐	☐	☐	☐
Other - please specify below	☐	☐	☐	☐	☐

If you selected 'Other', please specify:

In general, to what extent have each of these possible ways of learning about research methods, been useful or not useful for you for learning about **quantitative research methods** (with 1 being 'Not at all useful' and 5 being 'Very useful' ?

Please don't select more than 1 answer per row.

Please select between 7 and 8 answers

	1 - Not at all useful	2 - Not very useful	3 - Fairly useful	4 - Useful	5 - Very useful

Research methods training during PhD	☐	☐	☐	☐	☐
One-to-one training from a colleague	☐	☐	☐	☐	☐
Course run by my employer	☐	☐	☐	☐	☐
Course run by an external organisation	☐	☐	☐	☐	☐
Books / journal articles	☐	☐	☐	☐	☐
Online resources	☐	☐	☐	☐	☐
Conferences / seminars	☐	☐	☐	☐	☐
Other - please specify below	☐	☐	☐	☐	☐

If you selected Other, please specify:

Please could you indicate why you think that postgraduate research methods training was not very useful for learning about **qualitative research methods** (*Pleaseselectallthatapply).* *Optional*

- [ ] It was too long ago for me to remember

- [ ] It was poorly taught
- [ ] I didn't want to do the course
- [ ] I didn't think the method was applicable to me, so I didn't engage with the course
- [ ] I only realised the value of the course later on when it was too late
- [ ] Other

If you selected Other, please specify:

Please could you indicate why you think that postgraduate research methods training was not very useful for learning about **quantitative** research methods (*Please select all that apply).* *Optional*

- [ ] It was too long ago for me to remember
- [ ] It was poorly taught
- [ ] I didn't want to do the course
- [ ] I didn't think the method was applicable to me, so I didn't engage with the course
- [ ] I only realised the value of the course later on when it was too late
- [ ] Other

If you selected Other, please specify:

Please give reasons for your answers to the above question(s).

Consider the following statements about what should form part of doctoral methods training and their teaching. To what extent do you agree or disagree with them? (With 1 being 'Strongly disagree' and 5 being 'Strongly agree'.

Please don't select more than 1 answer per row.

	1 - Strongly disagree	2 - Disagree	3 - Neither agree nor disagree	4 - Agree	5 - Strongly
I think that quantitative methods should not be a compulsory part of a postgraduate social science degree	☐	☐	☐	☐	☐
Quantitative methods are generally well taught in postgraduate social science degrees	☐	☐	☐	☐	☐
Qualitative methods should be part of a postgraduate social science degree	☐	☐	☐	☐	☐

Qualitative methods are often poorly taught in postgraduate social science degrees	☐	☐	☐	☐	☐
The idea of learning statistical methods makes me feel anxious	☐	☐	☐	☐	☐
Social science is closer to arts / humanities than science / maths	☐	☐	☐	☐	☐

Please give reasons for your answers above.

To what extent do you agree with the following statements about whether particular elements within doctoral methods training should be compulsory and what is appropriate regarding levels of methods training.

Please don't select more than 1 answer per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
PhD students should learn advanced as well as basic research methods	☐	☐	☐	☐	☐
PhD students should learn about certain methods, even if these are not directly relevant to their PhD	☐	☐	☐	☐	☐
If PhD students have to learn a set of basic research methods, they don't have time to become a specialist in particular methods	☐	☐	☐	☐	☐
Learning statistics is important for later employment	☐	☐	☐	☐	☐

Please give reasons for your answers above.

Page 9: Finally some questions about you

What is your gender?

- Male
- Female
- Other

If you selected Other, please specify:

What was your age at your last birthday?

Page 10: Final - Thank you page

That's it! Thank you very much for taking the time to complete this questionnaire. Your responses will be very valuable to me.

Key for selection options

4.b - Of the motivations for doing a PhD that you selected above, which was your main motivation?

My interest in the subject
Improving my career prospects for an academic/research career Improving my career prospects outside of an academic/research career I was encouraged by a former academic tutor/supervisor
The funding was available
It felt like a natural step for me
I felt inspired to work with a particular academic Some of my friends are doing postgraduate degrees My parents encouraged me to
Other

11.a.i - How long did you teach for in total, during your PhD?

1 year or less
2 years
3 years
4 years
5 years or more

13. How long did it take you to secure your first paid post after submitting your PhD thesis?

Less than 3 months
3-6 months
7-12 months

1-2 years
Over 2 years
I've not yet secured a paid post
I secured my first paid post before submitting my thesis

13. What is your current main employment?

Role in higher education - primarily research and teaching Role in higher education - primarily research
Role in higher education - primarily teaching Other role in higher education
Research role outside higher education
Self-employment/running your own business
Teaching career outside higher education Private sector employment
Public sector employment
Voluntary / third sector employment Employment in higher education outside the UK
Employment outside higher education and outside the UK Other occupation (please specify)
Other

PhD Research Methods Training Postgraduate Student Questionnaire (FINAL)[xi]

Introduction and first question

Dear PhD student,

My name is Amanda Vettini and I am studying for a PhD which is looking at postgraduate training in the social sciences. Amongst other things, I am keen to examine the views of current PhD students on postgraduate research methods training and how this training may link with future employment.

I would be very grateful if you would complete this questionnaire telling me your honest views and experiences of this training.

All respondents (who provide an email address at the end of the questionnaire) will be entered into a prize draw to win a £15 Amazon gift voucher.

The survey should take around 20 minutes to complete, although it could take longer if you add your own free text responses where there is an option to do so. There are a mix of closed and open text questions in the questionnaire. Some questions are optional and please feel free to skip any questions that do not apply to you or you do not wish to answer (unless these are 'required' questions).

Survey results are entirely anonymous and I will not identify any institution, individual or their views.

THANK YOU - YOUR VIEWS ARE VERY IMPORTANT.

Amanda Vettini, PhD student, University of Edinburgh

[personal data removed].

Previous degrees

1. Did you study for any other degrees before studying

- Yes
- No

Previous degrees and methods training

2. What was this / were these degree(s) and where did you study for it / them? *Please type the name of the degree(s) and the institution(s) and country/countries in which you studied them. For example, MA Hons in Sociology, University of Edinburgh, UK. MSc in Applied Social Research, University of Stirling, UK*

3. What research methods training did you undertake during your degree(s) before your PhD? *Look at the following list of research methods and indicate if you took compulsory or optional training in any of these methods, and whether it was basic/intermediate/advanced. If you did not learn about a particular method, then just leave it blank.*

More info

	Whether compulsory or not		Level of training		
	Compulsory	Optional	Basic	Intermediate	Advanced
Actor Network Theory	☐	☐	☐	☐	☐
Biographical methods / oral history	☐	☐	☐	☐	☐
Descriptive statistics	☐	☐	☐	☐	☐
Diary methods	☐	☐	☐	☐	☐
Digital social research	☐	☐	☐	☐	☐

Econometrics	☐	☐	☐	☐	☐
Ethnography	☐	☐	☐	☐	☐
Evaluation research	☐	☐	☐	☐	☐
Mixed methods	☐	☐	☐	☐	☐
Participatory / action research	☐	☐	☐	☐	☐
Qualitative data analysis software e.g. NVivo	☐	☐	☐	☐	☐
Qualitative data analysis approaches e.g. grounded, thematic	☐	☐	☐	☐	☐
Qualitative interviewing	☐	☐	☐	☐	☐
Quantitative data analysis software e.g. SPSS, Stata	☐	☐	☐	☐	☐
Secondary data analysis	☐	☐	☐	☐	☐
Social network analysis	☐	☐	☐	☐	☐
Inferential statistics	☐	☐	☐	☐	☐
Surveydesign	☐	☐	☐	☐	☐
Systematic review	☐	☐	☐	☐	☐
Visual methods	☐	☐	☐	☐	☐

4. Did you do any methods training during your degree(s), before your PhD, **other than those outlined in Q3 above**?
If so, please use this space to tell me the name of this training and whether it was compulsory or optional and basic, intermediate or advanced.

PhD discipline and motivations for study

Which discipline is your PhD in? (*You may select more than one if multi-disciplinary). If none are appropriate, please select 'Other' and write down the subject area.*

Required

Please select at least 1

- [ ] Demography
- [ ] Social statistics, methods and computing
- [ ] Development studies
- [ ] Human geography
- [ ] Environmental planning
- [ ] Economics
- [ ] Management and business studies
- [ ] Education
- [ ] Social anthropology
- [ ] Linguistics
- [ ] Law
- [ ] Economic and social history
- [ ] Politics
- [ ] International relations
- [ ] Psychology
- [ ] Sociology
- [ ] Science and technology studies
- [ ] Social policy
- [ ] Social work
- [ ] Other

5.a. If you selected Other,

6. At which institution are you studying for your PhD? *Required*

7. Which year of study of your PhD are you in? *Required*

8. Are you studying for your PhD full-time, part-time or other (please specify)? *Required*

8.a. If you selected Other,

9. What is the title of your PhD? *Required*

10. Whichresearch methods are you using in your PhD Required

What were your motivations for studying for a PhD? *Please select all that apply*

Optional

- [ ] My interest in the
- [ ] Improving my careerprospects for an academic/research career
- [ ] Improving my careerprospects for a non-academic
- [ ] I was encouraged by a former academic
- [ ] Funding was available
- [ ] It felt like a natural
- [ ] I felt inspired to work with a particular
- [ ] Some of my friends were doing postgraduate
- [ ] My parents encouraged me
- [ ] Other

11.a. If you selected Other,

11.b. Of those above, what **main motivation** studying for *Please select 1 answer* *Required*

- [ ] My interest in the
- [ ] Improving my careerprospects for an academic/research career
- [ ] Improving my careerprospects for a non-academic
- [ ] I was encouraged by a former academic
- [ ] Funding was available
- [ ] It felt like a natural
- [ ] I felt inspired to work with a particular
- [ ] Some of my friends were doing postgraduate
- [ ] My parents encouraged me
- [ ] Other

11.b.i. If you selected Other,

PhD Research Methods Training

Research Methods Training During PhD

12. What research methods training have you undertaken so far during your PhD? *Look at the following list of research methods and indicate if you took compulsory or optional training in any of these methods, and whether it was basic/intermediate/advanced. If you did not learn about a particular method, then just leave it blank.*

More info

	Whether compulsory or not		Level of training		
	Compulsory	Optional	Basic	Intermediate	Advanced
Actor Network Theory	☐	☐	☐	☐	☐

Biographical methods / oral history	☐	☐	☐	☐	☐
Descriptive statistics	☐	☐	☐	☐	☐
Diary methods	☐	☐	☐	☐	☐
Digital social research	☐	☐	☐	☐	☐
Econometrics	☐	☐	☐	☐	☐
Ethnography	☐	☐	☐	☐	☐
Evaluation research	☐	☐	☐	☐	☐
Mixed methods	☐	☐	☐	☐	☐
Participatory / action research	☐	☐	☐	☐	☐
Qualitative data analysis software e.g. NVivo	☐	☐	☐	☐	☐
Qualitative data analysis approaches e.g. grounded, thematic	☐	☐	☐	☐	☐
Qualitative interviewing	☐	☐	☐	☐	☐
Quantitative data analysis software e.g. SPSS, Stata	☐	☐	☐	☐	☐
Secondary data analysis	☐	☐	☐	☐	☐
Social network analysis	☐	☐	☐	☐	☐
Inferential statistics	☐	☐	☐	☐	☐
Surveydesign	☐	☐	☐	☐	☐
Systematic review	☐	☐	☐	☐	☐
Visual methods	☐	☐	☐	☐	☐

13. Have you done any methods training during your PhD other than that outlined in Q12 above? *If so, please use this space to tell me the name of this training and whether*

it was compulsory or optional and basic, intermediate or

Other ways of undertaking methods training

14. Are there any ways that you have learned about research methods during your PhD study, other than taught methods courses at your institution? *Please select all that apply*

- [ ] Training course run by external
- [ ] Peers

- [ ] Books / journal
- [ ] Online resources (please state
- [ ] Other

14.a. Which online resources did you

14.b. If you selected Other,

15. How useful have the following ways of undertaking research methods training been for you during your PhD (ranging from 'not at all useful' to 'very useful')?

Please don't select more than 1 answer(s) per row.

	Not at all useful	Not useful	Neither useful nor not useful	Useful	Very useful	Not applicable
Methods training provided in PhD programme	☐	☐	☐	☐	☐	☐

Training course run by an external organisation	☐	☐	☐	☐	☐	☐
One-to-one training from a peer	☐	☐	☐	☐	☐	☐
Books / journal articles	☐	☐	☐	☐	☐	☐
Online resources	☐	☐	☐	☐	☐	☐
Other - please specify below	☐	☐	☐	☐	☐	☐

16. If you would like to add anything to your answers for Q15 above, please use this space to do

Career aspirations - after PhD qualification

17. What are your career aspirations for after your PhD? *Please select as many answers as apply to you.* *Required*

Please don't select more than 1 answer(s) per row.

Please select at least 1 answer(s).

Please don't select more than 5 answer(s) in any single column.

	Career aspirations for after PhD
Career in higher education - research and / or teaching	☐
Other role in higher education	☐
Research career outside higher education	☐
Teaching career outside higher education	☐
Self-employment/running your own business	☐
Other - please specify below	☐

17.a. If you selected 'Other' for either of the above, pleasesp

Effectiveness of Research Methods Training

18. To what extent do you agree that research methods training during your PhD is likely to be effective preparation for employment? *Required*

Please don't select more than 1 answer(s) per row.

Please select at least 1 answer(s).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

A PhD is effective preparation for employment	☐	☐	☐	☐	☐

19. Has the research methods training you have undertaken during your PhD been useful for learning **qualitative methods?**

- ○ Yes
- ○ No

20. Why has the postgraduate research methods training not been very useful for learning about **qualitative research methods**? *Please select all that Optional*

- [ ] I can't remember
- [ ] It was poorly
- [ ] I didn't want to do the
- [ ] I didn't think the method was applicable to me, so I didn't enga
- [ ] Other

20.a. If you selected Other,

21. Has the research methods training you have undertaken during your PhD been useful for learning **quantitative** methods?

- ( ) Yes
- ( ) No

22. Why has the postgraduate research methods training not been very useful for learning about **quantitative** research *Please select all that* *Optional*

- [ ] I can't remember
- [ ] It was poorly
- [ ] I didn't want to do the
- [ ] I didn't think the method was applicable to me, so I didn't enga
- [ ] Other

22.a. If you selected Other,

Doctoral Methods Training and Employment

23. Consider the following statements about what should form part of doctoral methods training and teaching. To what extent do you agree or disagree with them? *Please select 1 answer per row.*

Required

Please don't select more than 1 answer(s) per row.

Please select at least 4 answer(s).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Quantitative methods should be a compulsory part of a postgraduate social science degree	☐	☐	☐	☐	☐
Quantitative methods are generally well taught in postgraduate social science degrees	☐	☐	☐	☐	☐
Qualitative methods should be a compulsory part of a postgraduate social science degree	☐	☐	☐	☐	☐

Qualitative methods are generally well taught in postgraduate social science degrees	☐	☐	☐	☐	☐

23.a. Please use this box if there is anything that you would like to add to your answers above.

24. To what extent do you agree with the following statements about what should be included within doctoral methods training and what level of methods training is appropriate. *Please select 1 answer per row* *Required*

Please don't select more than 1 answer(s) per row.

Please select at least 7 answer(s).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
PhD students should learn advanced as well as basic research methods	☐	☐	☐	☐	☐

PhD students should learn about certain methods, even if these are not directly relevant to their PhD	☐	☐	☐	☐	☐
A PhD should prepare students for employment	☐	☐	☐	☐	☐

If PhD students have to learn a set of core research methods, they won't have time to become a specialist in specific preferred methods	☐	☐	☐	☐	☐
Learning statistics is important for later employment	☐	☐	☐	☐	☐

The idea of learning statistical methods makes me feel anxious	☐	☐	☐	☐	☐
Social science is closer to arts / humanities than science / maths	☐	☐	☐	☐	☐

24.a. Pleaseuse this box if there is anything you would like to add

Finally, some questions about you

25. What is your *Required*

- Male
- Female
- Prefer not to

26. What was your age at your last *Required*

27. If you would like to be entered into the prize draw to win a £15 Amazon gift voucher, please provide your email address. (Please note your email address will only be used for the purposes of contacting you, should you win the prize, and will not be used to identify your responses.)

Final - Thank you page

That's it! Thank you very much for taking the time to complete this questionnaire. Your responses will be very valuable to me.

Key for selection options

7 - Which year of study of your PhD are you in?

1st year
2nd year
3rd year
4th year
5th year or more

8 - Are you studying for your PhD full-time, part-time or other (please specify)?

Full-time
Part-time
Other

10.2 Appendix 2: Walking interview and video diary participants demographics

Table 12: Demographics of walking interview and video diary participants					
Number	Pseudonym	Discipline	Year of Study / PhD or Masters	Gender	PhD Method(s)
Pilot Interview Participants					
1	Penny	Sociology	PhD – 2nd year	Female	Qualitative – creative art, poetry and participatory methods
2	Barry	Sociology	PhD – 1st year	Male	Advanced quantitative and ethnography
Walking Interview Participants					
1	Marion	Politics	PhD – studying part-time and Research Assistant job part-time. Unclear what year in – perhaps	Female	Mixed (online questionnaires; depth interviews and documentary analysis)

			2nd / 3rd year but part-time		
Number	Pseudonym	Discipline	Year of Study / PhD or Masters	Gender	PhD Method(s)
2	Phoebe	Sociology	PhD – 2nd year	Female	Qualitative method (archival research; depth interviews but great interest in quantitative methods)
3	Leah	Social Anthropology	PhD – 2nd year	Female	Qualitative - ethnography
4	Kenny	Canadian Studies	PhD – 4th year	Male	Qualitative – historical research comparing 2 countries
5	Charlotte	Sociology	PhD – 2nd / 3rd year	Female	Qualitative - ethnography
6	Bella	Social Work	PhD – 3rd year	Female	Qualitative – informal interviews (individual and group) and participant observation

7	Megan	Politics	PhD – 3rd year	Female	Qualitative – secondary analysis of qualitative data
8	Aaron	Politics	PhD – 3rd / 4th year	Male	Mixed methods – questionnaires and depth video call interviews
9	Sienna	Science and Technology Studies	PhD – 4th year	Female	Qualitative – ethnography: interviews and observation
10	Denise	South Asian Studies	PhD – 3rd / 4th year	Female	Qualitative – political ethnography (depth interviews; participant observation online of Facebook posts etc.;
11	Jason	Science and Technology Studies	PhD – 3rd / 4th year	Male	Qualitative – depth interviews
Video Diary Participants					

Number	Pseudonym	Discipline	Year of Study / PhD or Masters	Gender	PhD Method(s)
1	Fiona	N/A	Masters in Social Research	Female	N/A
2	Nathan	N/A (Although studied Sociology undergraduate degree)	Taught Masters in Social Research	Male	N/A
3	Aisha – written diary	Sociology	PhD	Female	
4	Toni	Social Policy	PhD	Female	Quantitative
5	Sasha	Sociology	PhD	Female	Quantitative
6	Sue	Science and Technology Studies	MSc by Research	Female	N/A
7 – partial data	Andrew	Science and Technology Studies	Masters by Research	Male	N/A

10.3 Appendix 3: Table comparing 2005, 2009 and 2015 ESRC Training Guidelines

Table 9: Key Training Content Comparison Table: 2005, 2009 and 2015 ESRC Postgraduate Training and Development Guidelines

Content Item	2005 Guidelines	2009 Guidelines	2015 Guidelines
Flexibility in Postgraduate Training Structures (+3; 1+3; 2+2; +4; 2+3 programmes)		√	√
Core Research Methods Skills:			
Understanding debates within relevant disciplines		√	√
Having appreciation of different epistemologies and how these shape research design and analysis	√	√	√
Understanding basic principles of research design, formulating researchable questions, and link between research questions and methods	√	√	√
Understanding link between theory and empirical evidence	√		√
Understanding concepts of reliability, generalisability and validity	√		√
Understanding different forms of sampling and sampling error, how to sample cases / participants	√		√
Understanding and applying range of qualitative and quantitative techniques and mixed methods and being exposed to breadth of techniques.	√	√	√
Understanding various types of research design different ways of conducting interviews (both structured quantitative interviews and un/semi-structured qualitative interviews and learning about ethnography	√		√
Being exposed to variety of quantitative data collection approaches (e.g. longitudinal, cross-sectional and experimental research	√		√
Content Item	**2005 Guidelines**	**2009 Guidelines**	**2015 Guidelines**

Understanding different forms of data (documentary, narrative, administrative / big data	√		√
Knowing how to manage non-response and missing data	√		√
Knowing how to deal with measurement error, understanding inductive and deductive research approaches, framework analysis and ethnographic analysis, understanding hypothesis testing (exploratory and inferential) and how to measure causality	√		√
Knowing how to present and record data in its various forms (audio, visual, textual etc.)			√
Being conversant with methods used by others		√	√
Gaining practical application of data analysis, including using computer packages	√	√	√
Gaining baseline statistical training such as: univariate descriptive statistics, measures of central tendency, measures of bivariate association, statistical inference for parametric and non-parametric data and modelling, multivariate regression (linear and non-linear), data reduction, grouping and cluster analysis and introductory longitudinal analysis such as event history	√		√
Knowing how to analyse different types of qualitative data and perform different types of analysis such as discourse and narrative analysis and different methods such as historical, comparative and archival	√		√
Content Item	**2005 Guidelines**	**2009 Guidelines**	**2015 Guidelines**

Learning more advanced quantitative and qualitative analysis (e.g. techniques appropriate for survey and aggregate data analysis or experimental, quasi-experimental and evaluation methods)	√	√	√
Knowing how to use primary and secondary data sources		√	√
Knowing good practices for managing data (e.g. cleaning and preparation for analysis), effective coding and storing and safe disposal			√
Integrating learning to be a highly effective researcher		√	√
Knowing how to manage a research project and disseminate research (in concordance with professional standards and ethics)		√	√
General Research Skills:			
Bibliographic and computing skills	√	√	√
Teaching / other work experience	√	√	√
Learning a foreign language	√	√	√
Learning about ethic and legal issues in research	√	√	√
Engage with research users		√	√
Maximising research impact		√	√
Transferable Research Skills:			
Communication and networking	√	√	√
Leadership		√	√
Research/project and time management	√	√	√
Managing relationships		√	√
Personal and career development	√	√	√
Accessing training at a national, UK-wide level		√	√

11

11.1 Appendix 4: University of Edinburgh PhD Curriculum Programme Across 6 Social Science Disciplines from the Degree Regulations and Programmes of Study (DRPS) 2016 / 17

General information for PhD students in School of Social and Political Science on the following disciplines: Economics; Politics; Psychology; Science, Technology and Innovation Studies; Social Anthropology and Sociology. These represent a range of some of the major social science disciplines which have particular methodological preferences.

PhD students' course choices are discussed with supervisor(s) and your subject area Postgraduate Advisor, bearing in mind the requirements of your particular degree programme, Research Council requirements, and any particular training needs raised by your anticipated research.

If students already have particular research methods skills, they do not need to take courses which repeat that. The focus should be on emerging from the PhD with proficiency across the broad range of ESRC-advocated research skills, 'skills in key research methods, and in the use and interpretation of techniques for the analysis of quantitative and qualitative data.' (from University of Edinburgh Graduate School website section on postgraduate research courses for PhD students - http://www.sps.ed.ac.uk/gradschool/current_students/for_phd_students/research_training/postgraduate_research_courses_pgr)

The 4 core skills methods courses are:

- Research Design | PGSP11208
- Research Skills in the Social Sciences: Data Collection | PGSP11016
- Core Quantitative Data Analysis 1 and 2 | SCIL11009
- Analysing Qualitative Data | PGSP11110

Key methods (as judged by the University of Edinburgh): documents and archives; interviews and focus groups; ethnographic observation; survey method) have more advanced / depth level course options:

- Qualitative Methods and Ethnographic Fieldwork | PGSP11188
- Social Network Research: Theories and Analysis| SCIL11042
- Evaluation Research Methods | PGSP11373
- Applied Demography | PGSP11485
- Multi-Level Modelling in Social Science | PGSP11424
- Statistical modelling in the Social Sciences | PGSP11486

As well as in methods germane to particular fields and topics, for example:

- Comparative Analysis of Social and Public Policy | PGSP11104

- Research in Africa | PGSP11340

Economics

MSc Economics (2016/17)

9 compulsory courses (4 are 10 credit half term ones) and 2 are actually the MSc Economics project and the MSc Dissertation, so 7 compulsory courses: Mathematics, Statistics and Econometrics; Macroeconomics 1; Microeconomics 1; Econometrics 1 (all term 1); Macroeconomics 2; Microeconomics 2; Econometrics 2 (all half term 10 credit courses in term 2).

6 from list of optional courses (all 10 credit half term ones) so 30 credits in total: Asset Pricing; Corporate Finance (theory and empirical evidence on corporate finance including: capital budgeting, capital structure, payout policy, and raising equity); International Money and Finance; Experimental Economics and Finance (methods course to teach experimental economics and review the empirical research on this, to enable students to design own experiments); Advanced Topics in Macroeconomics; Advanced Topics in Microeconomics; Advanced Time Series Econometrics; Advanced Microeconometrics; Bayesian Econometrics and Development and Methodology of Economic Thought.

PhD in Economics

In 1st year 4 compulsory taught courses: Models and Research Methods in Microeconomics; Models and Research Methods in Macroeconomics; SGPE Option course in Econometrics; Frontiers in Economics.

Two optional / choice courses from: Advanced Topics in Microeconomics; Advanced Topics in Macroeconomics; Advanced Time Series Econometrics; Advanced Microeconometrics; Bayesian Econometrics.

Politics

MSc International and European Politics (2016/17):

2 core courses: Institutions and Policies of the European Union; Analysing European Governance and Public Policy, plus either standard MSc Dissertation or Work-based Dissertation.

3 or 4 optional courses to choose from a list including (methods sounding ones): Foreign Policy Analysis; Social Network Analysis: Mapping and Exploring the Network Society; Comparative Analysis of Social and Public Policy.

PhD in Politics

Students follow a doctoral training programme decided by their PhD supervisor and postgraduate adviser (no compulsory elements). Students select research methods training courses from the MSc by Research programme and typically primarily study these in the 1st year of their PhD.

Psychology

MSc Psychology of Individual Differences (2016/17): 9 total courses (but a mix between 10 credit half term ones and 20 credit full term ones), plus MSc standard Dissertation.

6 core courses: Current Topics in Psychological Research (10 credits); Univariate Statistics and Methodology using R (10 credits); Multivariate Statistics and Methodology using R (10 credits); Psychological Research Skills; Seminar in Personality; Seminar in Intelligence.

Recommended course: Intelligence, Personality and Health (MSc)

Optional courses: choose courses at postgraduate level 11 equalling 20 further credits (so 2 x 10 credits or one 20 credit course).

MSc Psychological Research (2016/17): 9 total courses (but a mix between 10 credit half term ones and 20 credit full term ones), plus MSc standard Dissertation.

6 core courses: Current Topics in Psychological Research (10 credits); Univariate Statistics and Methodology using R (10 credits); Multivariate Statistics and Methodology using R (10 credits); Psychological Research Skills; Specialist Techniques in Psychological Research; Qualitative Methodologies in Psychological Research.

Optional courses: choose 3 full term equivalent courses from list of 7, none are methods courses.

PhD in Psychology

All students are required to attend research methodology courses and courses pertinent to their research project as directed by their supervisory team. Note: It is not stated in the handbook which methods courses these are, however, it would seem likely that a relevant range of these for the doctoral student would be chosen from the MSc training list of course.

Science, Technology and Innovation Studies (STIS)

MSc Science, Technology and Society (2016/17): 6-7 total courses, plus MSc standard Dissertation or Work-based Dissertation

4 core courses: Science, Knowledge and Expertise; Understanding Technology, Introduction to Risk; Regulation and Governance; Innovation Systems Theory and Practice.

2 or 3 optional courses to choose from a list including (methods sounding ones): Analysing Qualitative Data; Qualitative Methods and Ethnographic Fieldwork; Research Design; Working with Self and Others in Qualitative Research: Theory and Practice (reflexivity in research, ethics, power dynamics etc.)

MScR (Research MSc) Science, Technology and Innovation Studies (STIS)

MSc Social Research: 6 total courses, plus MSc Dissertation (3 core and 3 optional / choices).

3 core courses: Core quantitative data analysis 1 and 2; Research Skills in the Social Sciences: Data Collection; Research Design.

3 optional courses to choose from a list including (methods ones): Qualitative Methods and Ethnographic Fieldwork; all other courses are topic / substantive courses, as well 1 course from a range of other disciplines.

PhD in Science, Technology and Innovation Studies (STIS)

PhD students usually follow the MSc by Research in STS for their first year. This comprises specialist courses, as well as training in research methods.

Social Anthropology

MSc Social Anthropology: 6 total courses, plus MSc Dissertation (4 core and 2 optional / choices) – most are not methods courses.

4 core courses (although 2 allow a choice) 2 core courses: 1. Anthropology Theory and 2. Ethnography Method; 2 further core to choose from (are all subject or theory courses);

2 optional courses to choose from a list including (methods sounding ones): Anthropological Approaches to Shamanism and Spirit Possession, Himalayan Ethnography and Visual Anthropology

PhD in Social Anthropology

The PhD programme combines work on the thesis project, usually based on long-term fieldwork, with systematic training in anthropological and social research skills. Research training is also available in the form of the MSc by Research.

Social Research

MSc Social Research: 6 total courses, plus MSc Dissertation (3 core and 3 optional / choices).

3 core courses: Core quantitative data analysis 1 and 2; Research Skills in the Social Sciences: Data Collection; Research Design.

3 optional courses to choose from a list including (methods ones): Listening to Children: Research and Consultation; Qualitative Methods and Ethnographic Fieldwork; Comparative Analysis of Social and Public Policy; Analysing Qualitative Data; Social Network Analysis: Mapping and Exploring the Network Society; Working with Self and Others in Qualitative Research: Theory and Practice; Evaluation Research Methods; The Documents of Life; Multi-Level Modelling in Social Science

Sociology

MSc Sociology and Global Change: 6 total courses, plus MSc Dissertation (2 core and 4 optional / choices).

2 core courses: 1. **Key Concepts in Global Social Change and 2. Researching Global Social Change.**

4 optional courses to choose from a list including methods ones: Core Quantitative Data Analysis for Social Research, Discourse Analysis / Conversation Analysis, Ethnography of the USA, Historical Analysis in the Social Sciences: Historical Perspectives/Historical Sources, Narrative Text and Discourse, Research Design, Research Skills in the Social Sciences: Data Collection, Social Network Analysis: Mapping and Exploring the Network Society, Survey Methods and Data

PhD in Sociology

2 compulsory courses: 1. *Advanced Issues in Sociological Research (how* research in practice is organised, not just the abstract principles behind it. Introduces students to a range of Sociology subject area). *2. The Writing Workshop (*practical sociological writing craft skills directed towards producing a successful PhD thesis and getting ideas into publication).

Optional courses: PhD students also to study a range of chosen courses in 1st year from the core MSc by Research programme to gain skills in key research methods and the use and interpretation of techniques for quantitative and qualitative data analysis. The doctoral programme is designed to ensure that all students attain the level of competence set by the ESRC postgraduate research training guidelines.

11.2 Appendix 5 – Table: Qualitative participants by year of study, PhD methods and broad methods training view

Table 10: Qualitative participants by year of study, PhD methods and broad methods training view

Pseudonym	Discipline	Year of Study / PhD or Masters	PhD Method(s)	Broad Methods Training View
Penny	Sociology	PhD – 2nd year	Qualitative – creative art, poetry and participatory methods	Mixed (found courses personally challenging but quite supportive for all)
Barry	Sociology	PhD – 1st year	Mixed - Advanced	Negative

			quantitative and ethnography	
Marion	Politics	PhD – studying part-time in 2nd year f-t equivalent	Mixed - online questionnaires; depth interviews and documentary analysis	Mixed (generally supportive but some personally challenging experiences)
Phoebe	Sociology	PhD – 2nd year	Qualitative - archival research; depth interviews but much interest in quantitative methods	Mixed (very critical of delivery of particular courses)
Leah	Social Anthropology	PhD – 2nd year	Qualitative - ethnography	Positive
Kenny	Canadian Studies	PhD – 4th year	Qualitative – historical research comparing 2 countries	Positive (but refused to study quantitative courses)
Charlotte	Sociology	PhD – 2nd / 3rd year	Qualitative - ethnography	Mixed
Bella	Social Work	PhD – 3rd year	Qualitative – informal interviews and participant observation	Mixed (very critical of delivery)
Megan	Politics	PhD – 3rd year	Qualitative – qualitative data	Mixed

			secondary analysis	
Aaron	Politics	PhD – 3rd / 4th year	Mixed methods – questionnaires and depth video call interviews	Positive
Pseudonym	**Discipline**	**Year of Study / 1st year PhD or Masters**	**PhD Method(s) (if appropriate)**	**Broad Methods Training View**
Sienna	Science and Technology Studies	PhD – 4th year	Qualitative – ethnography: interviews and observation	Mixed
Denise	South Asian Studies	PhD – 3rd / 4th year	Qualitative – political ethnography (depth interviews; online participant observation)	Positive
Jason	Science and Technology Studies	PhD – 3rd / 4th year	Qualitative – depth interviews	Positive
Fiona	Not specified	Masters	-	Positive
Nathan	Not specified	Taught Masters in Social Research	-	Positive

Aisha – written diary	Sociology	PhD – 1st year	Not yet decided – very likely qualitative	Negative
Toni	Social Policy	PhD – 1st year	Quantitative	Mixed (Mixed views of Research Design course but supportive for all)
Sasha	Sociology	PhD – 1st year	Quantitative – secondary data analysis	Mixed (Mixed views of courses, unsupportive of compulsory training
Sue	Science and Technology Studies	MSc by Research	-	Generally positive but broad courses more appropriate for Masters than PhD students
Andrew	Science and Technology Studies	Masters by Research	-	Initially mixed regarding personal experience but then supportive of training for all

11.3 Appendix 6 – Qualitative research quotations illustrating overall mixed views, positive views and negative views of broad methods training

Mixed views

Penny – Mixed view

Own experience broad methods training (Negative):

Core Quantitative Data Analysis (CQDA): "They weren't doing it at a basic enough level… Everyone's expected to learn at the same pace and rate and when they're not, you have this feeling of failure if you're not grasping it…at the same speed as everyone else. And I found it really oppressive and really, really difficult. But once I found the courage just to say 'I'm not doing that, I'm not putting myself through it'…it took the pressure off."

View on broad training for all (Mixed):

"It's a good idea for everyone to get a taste of something, because not everyone's quantitative and not everyone's qualitative, so it's a good idea to have a little go…. But it's putting you under a great deal of stress. People who don't have that experience or background [quantitative and maths], they're going to be really under pressure."

Marion - Mixed view

Own experience broad methods training (Negative):

CQDA: CQDA felt frustrating. There wasn't enough time in a 10 – week course to really understand how to do these statistics. It was my first exposure to this kind of statistical training and it felt frustrating and upsetting not to understand."

View on broad training for all (Mixed / positive):

Having done them [the core methods courses] and looking back I think there is a purpose in doing them. Although I do think they could be improved… like teaching statistical concepts to people who don't understand it…But I think that in principle it [core research methods training] is useful; looking back and also looking forward, I think they're a good thing. So from that point of view I'm glad I've done them. But I don't think I found doing the course [CQDA] that great.

Phoebe - Mixed view

Own experience broad methods training (Mixed):

CQDA: CQDA, it was good. Mainly because it was a kind of continuation of the undergraduate course I had. It gave me satisfaction that I've developed the skills.

Data Collection: I mean the problem with the Data Collection course was, because I had studied here and because many of these lecturers that were giving the courses had actually taught me in the undergrad. I could see them basically talking about the same stuff."

View on broad training for all (Positive):

"I do generally think that people should have wide general knowledge about these things and should be aware they exist. I'm not saying that people should just study what they need to study to do their own research and that's it.."

Charlotte – Mixed view

Own experience broad methods training (Mixed):

CQDA: "I found it quite tricky. I remember at one point asking on Facebook does anybody know statistics… I remember finding some parts confusing. Some parts were really quite simple…Some stuff was fine but then I'd think for other things, I'm not sure when I would use that. Maybe it's easier to learn if you've got something in your head that you want to know or you would like to look into."

Data Collection: "Data Collection was just a little bit of basic understanding into everything. It's hard for them to make it exciting because if you're trying to cover a lot then you can only go so far into something."

Research Design: "Research Design. I can't really remember what went on in that I think that was a bit more about ontology, epistemology and stuff like that…Sometimes things all blend into one a bit so it can be hard to…I wasn't distinctive…and memorable in any way. It was fine."

View on broad training for all (Positive):

"I think it's very good if you've got a bit of a broader skill set developed."

“At one point [in an employment internship] we had to do a bit of statistics and that’s when I thought to myself ‘thank God I’d done those courses actually’… Because if you want to be a researcher, then there are going to be times when you’re going to need to use both quantitative and qualitative methods.”

Bella – Mixed view

Own experience broad methods training (Negative):

CQDA: “It [CQDA] definitely inspired some feelings but they were negative ones…I definitely didn’t enjoy it. One of the lecturers did try to make it interesting but otherwise it was not that interesting… I don’t think I got anything out of it.

Data Collection: The first course, Data Collection…was almost too - I understand, I think they were trying to make it very practical so it’s this is how you do interviews, this is how you do focus groups - But it’s almost a bit too simple.

Research Design: I feel like they almost jumped from really simple to… I remember one lecture where this guy was talking about philosophy and I had no idea what he was talking about. It was like the bridge didn’t happen. And that’s my main memory of research design.

But what I will say about ‘Research Design’ is I found the essay extremely helpful. So I just did a miniature what my dissertation was going to be, and then I got a lot of really good feedback, which was excellent.

View on broad training for all (Positive):

[Whether Masters students should study broad courses] “Yeah, I think to an extent, but I think they could definitely be modified and improved.”

So if I would be forced to, I think it’s important to have some element of quantitative research in there, so people have an understanding of that. But I think it would need to be done very differently…I don’t think you should have to do an SPSS course.

Megan - Mixed

Own experience broad methods training (Mixed):

CQDA: ‘Quantitative Statistics’ was really interesting. But I felt was the actual tutorial seems kind of disjointed from the lecture.

View on broad training for all (Negative):

"For students like they will know for sure that they won't be able to use statistics, I don't see the validity of that…I mean, they are forced to do it and they have to pass to some extent. Most people will go through some kind of like stress, try to make sense of stuff that they really don't really find interesting."

"At the same time, if you know that you will just do statistics and most probably you will never use document analysis, or discourse analysis or interviews then maybe best for you not take the 'Data Collection' [course]."

Sienna - Mixed

Own experience broad methods training (Mixed):

CQDA: The quantitative one, I just worked very hard from day 1. It was just so good because it was [name of lecturer] was just amazing and everything was just so well done. For every week you had to do lots of exercises but if you followed everything, everything was there. So I was just right, I'm gonna really get on with this. I wouldn't stop until I had done everything and if it took me 2 days, it took me 2 days. I was determined to make the most of it, so I did work very hard and I really enjoyed it.

Research Design: "That was very bad! When I did it, it was terrible…It was very disorganised. Data Collection had been basic but really well organised. Whereas 'Research Design'…maybe because I had done it [learned about research design] before, I didn't see that well what it was adding…that year most people I talked to was like, what is this, what are we doing?

View on broad training for all (Negative):

"A lot of people that do a 1+3 already have research [experience] and if they know for example that they're not going to use statistics, then I don't see that they should do it."

Toni – Mixed view

Own experience broad methods training (Mixed):

Research Design: “Right now I feel like this unit’s taking too much of my time, and I’d rather just work on my project instead…All in all, feeling like I wish I didn’t have to attend so much for this unit.” (Week 3 of 10 diary)

“I’m finding that generally the unit is helping me clarify the design of my own project which is good.” (Week 4 of 10 diary)

Overall: “I learned some new things and do have a wider appreciation for methodology in social science. The reading list is a real asset which I will continue to refer to as the design of my own project firms up.”

View on broad training for all (Positive):

“Yeah, I feel like research design training is really important….I’m fine about the course being compulsory. I learned things.”

Sasha – Mixed view

Own experience broad methods training (Mixed):

Data Collection: Doing a quantitative PhD and being made to do this course because it’s quite qualitative, it didn’t actually complement my PhD research as much as I would have liked…. it was a bit more of a distraction than too helpful. This is mostly in terms of time, so 2 hour lectures, 2 hour workshops every week and then you had to prepare kind of a mini qualitative study every workshop. So all that takes a lot of time and when it’s not directly relevant to what you’re doing in the PhD, for me that was a little bit frustrating.

Research Design: In general, I found the course interesting. I would personally prefer for workshops to be more abstract in the beginning and then slowly get towards more concrete ideas for our own research, whereas it was actually switched ….The workshops worked really well in terms of, my tutor in particular who was really flexible and really good. He really gave a lot of his own experience and we could learn from that quite a lot…But overall, I have enjoyed the course. Now it’s time to write the essay I feel well equipped to do that.”

View on broad training for all (Mixed – supportive of broad training but not compulsory):

Research Design: “When things didn’t feel relevant it felt frustrating. It felt like time away from other more important things.

This course shouldn't be compulsory for PhD students, it could be compulsory for Masters students potentially. There should be more information about it in advance, e.g. that it direct links to the board paper. A lot of my fellow cohort stopped attending the lectures. If you are being made to do something, it adds a bit of resentment. My fellow students felt similarly, as I talked to some people about this. Courses being compulsory causes resentment."

Positive views

Leah – Positive view

Own experience broad methods training (Negative but supportive):

CQDA: "I think we were all generally confused by statistics in general and there was a lot of just like, what are we doing? What's going on? I don't quite get it. I remember all the tutorials I came away feeling more confused than when I went in."

"That particular course I definitely felt a bit stressed because I was aware of how quickly it was going to be over and how much was flying past me that I wasn't really understanding…It kind of felt like trying to like catch sand in your hand, just fully aware of how much I wasn't comprehending. But at the same time, it was kind of nice too, I did remember feeling glad that I was at least being exposed to it."

View on broad training for all (Positive):

"An anthro PhD [student] isn't necessarily become is going to become an anthro professor, you need to be able to sell yourself, post PhD. And if you can say, 'I have training in statistics and understand how to do it', at least to a small degree, it just helps with the overall value of your degree."

"I think that anthropology is very much, its discipline in some ways defined by its methods like ethnography and participant observation….But I just don't think that total reliance in training in just those methods is particularly smart for future stuff. Because part of learning how to do a[nother] method is not only so you can do it, but when you read and go through evidence that was collected by that method and how the method shapes the evidence that was created."

Kenny - Positive view

Own experience broad methods training (Positive but refused to undertake perceived irrelevant training of CQDA):

Research Design: " They [PhD supervisors] pressured me into 'Research Design', because I didn't want to take research design at first. That was a pretty long first meeting if I'm not mistaken. I had no idea you had to take up mandatory courses. I just wanted to say 'I have my research, I have my methods so I'll do this.. So in the end I'm quite happy that I took it but in the beginning I was like 'whoa, don't want to do this really.' But they said 'well you have to take up courses, just take research design because it's very good to frame, think about your research. Ultimately it really did."

CQDA: I made it clear that quantitative data analysis really wasn't the way that my project was going so I kind of diverted by saying 'whoa!, not really going into one.'

View on broad training for all (Positive):

"I think it's helpful if you really… Like I'm niche of niche. But I still enjoy, like broad courses because it really, like you can get lost in your niche subject."

Aaron – Positive view

Own experience broad methods training (Positive)::

CQDA: When I took the quants course here with [name of CQDA lecturer]…I thought this was one of the best courses I've ever had. …The way he taught it, way easier to understand for me. And it was super clear, it made sense so I really, really liked that.

View on broad training for all (Positive):

"I think overall there's 'Research Design' and there's 'Data Collection' and quants ['Core Quantitative Data Analysis' course], gives you a nice overview, or update or refresher on things that are really necessary in this business. So I think it's a good selection."

"To be frank if you chose to do a Masters, and also if you chose to do a PhD there are certain basics that you have to know, part of this is quantitative methodology."

Denise – Positive view (but not supportive of compulsory training)

Own experience broad methods training (Positive):

CQDA: “About half way through the semester it completely went over my head, but I still passed. So I did have a little bit of a background but not [much]. I liked the quantitative analysis because it was very much, here’s some math that you can actually use, and here’s how you can actually use it…Some of the things I’ve learned in high school math I’ve never used and I’ve totally forgotten. So it was good in that respect…it showed us a process and I was glad to have taken it.”

Data Collection: “Yeah, I found it pretty useful…it was a mixture because some things were fairly new to me and some things I already knew about … The ‘Data Collection’ course, it’s a good general overview of the different methods, but it’s not so discipline specific.”

Research Design: “It was less practical. The thing that I liked about ‘Data Collection’, we did some practical interviews ..And ‘Research Design’ was less practical, more theoretical…I mean it was helpful I suppose, but it’s really not memorable.”

View on broad training for all: (Mainly positive - Slightly contradictory views expressed, supportive of broad training but not compulsory training)

“Well I think that it’s good for students to have a choice about methods courses. But I would say out of them ‘Data Collection’ is probably the most useful, the most practical course. I think it’s really a good thing if you’re in social and political science that you should, even if you’re not using all of the methods, you have to know enough about the different methods if you’re reading.

Me: Ok and what about the other courses, do you think people should have to do statistics training, for example, even if they’re not planning on using stats in their PhD or Masters?

Denise: I don’t think so. I would say that most people who are doing a Masters or a PhD have probably had some type of math course in their past. And I think that it should be something you can take [as opposed to have to take]. I almost think it should be encouraged more as an audit.”

Jason – Positive view

Own experience broad methods training (Positive):

CQDA: I suppose I learned from it. I passed the exam so I must have learned from it.

Overall: “Some lecturers were better than others…I was quite happy to do them [broad research methods courses] and I was quite happy to be examined on them. If they weren’t compulsory I wouldn’t have known about them. But if I had known about them, and you can do these or not, I would have done them because I’ve learned so much.”

View on broad training for all (Positive – but would only speak for himself):

“Since I’ve come into academia I’ve come up against people who are so intelligent, they’ve had good schooling and they’ve done a lot of these things before, statistics etc. So the reason that I won’t say it’s good for everybody is that I’m aware that people like yourself have already done all of this. So it’s good for me who hasn’t, and I should at least be aware that these things are out there. And I did some reading for the courses, and passed the exams so I’m sure I’ve absorbed some of it. I can only speak for myself, it was good for me.”

Negative views

Barry – Negative view

Own experience broad methods training (Negative):

I understand why these courses are mandatory in a 1 +3 degree or even if you are doing a 1-year Masters by research…But I guess I was a bit fed up to be honest, with [having to do] them because [of] having studied 5 years already, not only theory but methods as well.

View on broad training for all (Negative):

“Overall I would say no mandatory courses unless you don’t have people with [research methods] experience.”

Aisha – Negative view

Own experience broad methods training (Negative):

Neither ‘Data Collection’ or ‘Research Design’ courses were useful for me.

View on broad training for all (Negative):

“I think that we could become ‘Jack of all trades, master of none.’”

11.4 Appendix 7 – Table PhD motivation with classification of overall view broad methods training

Table 11: PhD motivation by view of broad methods training		
Student	**PhD motivation**	**Broad methods training view**
Aaron	Instrumental	Positive
Kenny	Instrumental	Positive
Barry	Instrumental	Negative
Sienna	Instrumental	Mixed
Marion	Intrinsic	Mixed
Jason	Intrinsic	Positive
Phoebe	Intrinsic and instrumental	Mixed
Bella	Intrinsic and instrumental	Mixed
Megan	Intrinsic and instrumental	Mixed
Denise	Intrinsic and instrumental	Positive
Charlotte	Encouraged by supervisors	Mixed
Penny	Encouraged by supervisors	Mixed
Leah	Encouraged by supervisors	Positive

11.5 Appendix 8: Quotations from walking interviews students illustrating doctoral study motivations (instrumental, intrinsic, mixed and being encouraged by their supervisor)

Instrumental motivations

Aaron: “And I knew that if I want to teach at the university there’s no way, other way than getting into a PhD. I would like to [be a lecturer]. Lecturing, doing my research. I could see my future in academia.”

Kenny: **“**But what I really wanted to do was just teach history. I want some people that are taking history as a subject and are genuinely interested in it. And that's why I like started thinking about maybe I should do a PhD, research on the one hand and most of all focus on teaching. And try to bring about that joy and interest that I have and just lay that on students.”

Barry: “I guess I knew from the first day I stepped my feet in university in [name of city] I really wanted to stay in academia…. I like teaching more than doing research I think. I like doing both but. And I guess you need to research to teach, they go hand-in-hand, but I enjoy the teaching part more.”

Sienna: “Basically the motivation for the Masters was because I had seen a job at Scotcen and they were asking for a Masters. I could have just applied but of course it was desirable to have a Masters in Research….The project I had for my Masters, my supervisor was like, but that’s a long-term PhD project. You cannot do this in a Masters because it’s too big. So she got me into applying for the ESRC.”

Intrinsic motivations

Marion: “I wanted some kind of further intellectual study. I knew that I would do some further study after I finished my undergraduate degree. Also because lots of friends and peers were doing a PhD so it was something normal to me.”

Jason: “It seems silly when I say it. My motivation was, I’ve enjoyed so much being a fire officer, I wanted to give something back, give something in return. And that’s exactly what I’m trying to do with this PhD, is give some tools back to fire safety officers and fire enforcement officers to give them a better understanding of what they’re doing.”

Mixed motivations (intrinsic and instrumental)

Phoebe: “I love academic work. So that's the kind of essential reasons [why I wanted to do a PhD]. I loved the experience of doing my own research when I did my undergraduate thesis. That stimulated me a lot…basically, I actually never considered any other option. I applied just for one scholarship and to me that was everything I wanted to do…I think I would be quite happy to get a job in academia. You can’t disregard this kind of instrumental aspect of things of course. But I think for me, first comes the really doing what I love. But of course I’ll be quite happy to get a job to be able to continue to do what I love.”

Bella: “I got to a stage in my work, I was in management, and I felt that to move on with my career I’d either have to continue with management or do something else. I wasn’t particularly interested in just continuing with management. We were starting a new project and a lot of that used research skills so we were doing initial research for that. I really enjoyed that, I loved that part of the job. My sister was doing a PhD and a friend was doing a PhD. I guess that was the first time I thought, well this is something I could do and I was looking for something different to do…I like being a practitioner, so when I came into it [the PhD] I wasn’t really thinking of going in to academia. So I would love to find ways of using research skills for charities and NGOs that could use them.”

Megan: **“**At the beginning because I liked the way it made me feel. In the sense that I like research, I like reading, I like thinking about, to exchange ideas with other people and learn different kinds of things…I actually like teaching. I had a teaching experience in Cairo, actually teaching English and Italian and I like it. So I thought maybe I can teach Politics. That is what I want to do in my life.”

Denise: “I like being around university. Even when I wasn’t pursuing a degree, the kinds of jobs I was attracted to were like student services. I need like my brain to be tickled constantly… I need that kind of challenge. And I guess I was always interested to try to promote some kind of change. That’s one of the reasons I was thinking state department or politics or something like that. But then I thought academic maybe the way to go…. I also liked the idea that I wasn’t just sitting at a computer all day long. You need to sit at the computer quite a lot as an academic but you’re not just doing that, you’re doing other things as well. You’re having pastoral care, you’re teaching, you’re lecturing, you’re going to conferences. I don’t want to just do the same thing 9 to 5 every day for the rest of my life. I would go mad. It’s also the kind of quality of life aspect of that too.”

Encouraged by supervisor(s):

Charlotte: “My supervisor at the time, he sort of suggested, so basically my undergrad dissertation ended almost being like a pilot study for the PhD…I knew that I really enjoyed doing the research and I knew that there was a lot more scope in what I looked at. I felt like I just scratched the surface and I really wanted to find out more.”

Penny: “When I was at college and Uni lecturers kept saying to me ‘you know, you should do a PhD…I did my Masters I thought what am I going to do? I wasn’t really doing anything I was just working in a kind of carer’s job, and I saw this [PhD scholarship].”

Leah: “It became clear that I could do the PhD. I wanted to and it seemed like my supervisors were encouraging of that.”

12 Endnotes

[i] The 1+3 programme is when a postgraduate student is accepted to do a one-year Masters and a 3-year PhD, with the Masters leading directly on to the PhD years. The typical focus in the Masters year is for the student to gain core research methods training and also to formulate the research problem for their doctoral study, with this typically being assessed in what is called 'a board paper' or 'board review'. The board review is arguably a mini viva where the Masters student prepares a document about their research and discusses and defends this to a small panel in a face-to-face meeting.

[ii] Online electronic web publication with no page numbers therefore none could be provided in the direct quotation citation.

[iii] However, it should be noted that different arrangements prevail in Scotland for Scottish students who do not pay tuition fees at undergraduate level if they attend a Scottish university.

[iv] It should be noted that only percentages were provided in the McKendrick (1993) publication and not the numbers of HEIs, which is why these are not discussed in this thesis.

[v] This is largely due to the ageing profile of the academic professionals in universities within these disciplines.

[vi] It should be noted that this adds up to 28 institutions and not 30, therefore, there must be a discrepancy in Budd et al's (2018) calculations.

[vii] It should be noted that there were differences between the two Williams' studies in the sampling and methods. Williams et al's (2008) first study in 2006-07 was a stratified random sample of 653 Sociology undergraduates in many higher education institutions in England and Wales using surveys. Williams, Payne and Sloan's (2016a) second study in 2012-13 was a census of all (353) 2nd year social science undergraduates but in only two universities, Plymouth and Cardiff, and also included focus groups.

[viii] Direct comparison of findings from Williams' two studies is potentially problematic and may not be valid to demonstrate real change for the following reasons. Wording of the questionnaires in the two studies changed for 3 of the attitudinal statements. For example, statement 1 was 'I had a bad experience of Maths at school' in the 2007 study but was changed to 'I enjoyed Maths at school' in the 2013 study. Statement 2 was 'I don't think Sociology students should have to study stats' in 2007 but was changed to 'I don't think social science students should have to study stats' in 2013. Statement 4 was 'I'd rather write an essay than analyse data' in 2007 but was changed to 'In my university work I'd rather write an essay than use statistics' in 2013.

[ix] Although the full version of Kenny's quotation is provided later in this chapter where students' overall views of broad training (positive, negative or mixed) are analysed on a case-by-case basis, it is also presented in chapter 4 as it is very relevant to the theme of 'discovering new methods / ideas'.

[x] It should be noted in the quotation that a 'quart' is a larger measure of liquid volume than a pint, equivalent to two pints. Thus the illustration of attempting to squeeze far more in, in this case double, than is physically possible is strongly evoked.

[xi] Please note that the current PhD student questionnaire was originally a pdf. File and has been converted into a Word file to enable copying this into my thesis. However, some of the formatting has consequently changed and the text layout does not look neat and tidy.