Understanding the contributions of UKRI-funded cohort-based doctoral training models to the doctoral journey from the perspective of the individual student experience

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Abstract

This dissertation interrogates the value, from the student perspective, of the contributions that the Scottish Graduate Schools (SGSs) make to the doctoral journey. These are national (Scottish) graduate schools and thus support large numbers of students (approximately 500 at any one time, concentrated in larger universities) across multiple institutions (19 in total) where local institutional organisational structures and disciplinary environments already exist.

Nine students registered at the University of Glasgow who had completed at least two years of study (full or part-time) funded by a national graduate school were interviewed. They were asked about their motivations for doctoral study and their networks of support, to describe what helped or hindered them most as doctoral students, what sort of training and development they participated in, and what roles the SGSs played in their experience. This was designed to elicit discussion of broad factors and/or actors that contributed to their doctoral experience to get a sense of how the SGSs fit into the bigger picture rather than solely discussing the role of the SGSs.

A thematic analysis of the interview data illuminated themes of community, connection, complexity, and bureaucracy in the student experience. Both challenges and opportunities were evident: (1) doctoral journeys remain highly individual, while institutional structures are designed to deliver for the perceived needs of as many students as possible; (2) actors in the landscape responsible for the 'delivery' of doctoral education or support often act independently of one another, leading to duplication of effort; (3) the variety of opportunity in the landscape provides many developmental opportunities yet that same variety can also be overwhelming and/or frustrating to manage. Interviewees valued the development opportunities but what they said was most important to them and helped the most on their doctoral journeys was the day-to-day interaction and support from peers, colleagues, and supervisors.

The evidence supported the idea that learning is social activity through which meaning and identity are negotiated, and that PGRs exist in what is described here as a landscape of practice. This landscape is made up of intersecting, overlapping and diverse communities of practice and can be described through Wenger's (1998) description of learning as experience, doing, belonging and becoming. The data supports an observation that the SGSs were added to an already complex landscape and that their value has been assumed. There is strong evidence of their value in terms of the funding and opportunities for training and development but also of the ways that they may create unhelpful complexity. The key recommendation is that we as a sector should be taking a wider view to assess what we do and why we do it in order to minimise duplication, remove unnecessary bureaucracy, and focus on the student experience rather than on the outcomes of that experience.

Acknowledgements

This study emerged from my day-to-day work at the University of Glasgow where I spent more than 12 years leading institutional policy and strategy for PGRs. What I have seen clearly in executing this study, and hopefully demonstrated in its elaboration, is that what is most important is the people - peers, colleagues, and community - and that the development and implementation of policy and strategy need to consider the lived experience by the community. The community of PGRs at the University, and all those who support them, inspired this work and they continue to inspire me every day with their creativity, commitment, and brilliance.

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Finally, last but not least, to my parents. They believed in the importance of education and sacrificed to make sure that I had the best education I could have. I am immeasurably grateful for the opportunities and open horizons that this education has afforded me.

Author declaration:

I declare that, except where explicit reference is made to the contribution of others, this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

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Table of Contents

1 Introduction

The study elaborated in this dissertation asks the following questions:

1. From the perspective of students, how do UKRI-funded Scottish Graduate Schools (SGS) contribute to doctoral learning and development, if at all?

2. Does participation add value to the student experience and doctoral students' learning journeys? If so, what value is added from the perspective of the student?

To answer these questions, this study will interview students funded by the two Scottish Graduate Schools - the Scottish Graduate School for Arts and Humanities (SGSAH) (sgsah.ac.uk) and the Scottish Graduate School of Social Sciences (SGSSS) (sgsss.ac.uk). These two entities are, respectively, funded by the Arts and Humanities Research Council (AHRC) and the Economic and Social Research Council (ESRC). Both Research Councils form part of United Kingdom Research and Innovation (UKRI), which is comprised of 7 Research Councils, together with Research England and Innovate UK.

The SGSs operate as Scotland-wide doctoral training entities or cross-institutional Graduate Schools across Scotland, providing funding for students across those broad disciplinary groups as relates to their names and providing access to training and development for any student studying for a research degree in one of these disciplinary groups in a Scottish higher education institution (HEI). They are each hosted at a university which holds the grant for the funding (Edinburgh for SGSSS and Glasgow for SGSAH) but where they operate as extra-institutional structures. Funding provided generally covers fees and stipends, usually for a 3-year period, as well as costs for training, placements, fieldwork, and research costs.

While the SGSs both have a core set of institutions who benefit from Research Council funding for studentships, they also include institutions that do not qualify for the funded studentships (based on criteria related to measures of research intensiveness, e.g. the Research Excellence Framework

(REF)) but who are able to participate in training and events. There is also support through additional funding from the Scottish Funding Council (SFC) for some administrative costs and to broaden support for training and development so that students at all institutions in Scotland associated with the SGSs (who are considered as either studying either social sciences or the arts and humanities) may participate in most of the activities of the relevant SGS (e.g., training or career events) regardless of their status as a funded student. Further additional institutional funding is provided through some combination of subscription, cohort support contributions, and co-funded studentships. In both cases, students are funded to pursue Doctor of Philosophy degrees (PhDs) rather than other programmes at doctoral level. SGSSS funds students to pursue MRes (Master of Research) degrees prior to embarking on PhDs where they think this is required. An MRes is a taught master's degree about research rather than a master's degree by research and is seen as preparation for a PhD. The requirement for this preparatory degree is determined on a case-by-case basis.

Each SGS funds approximately 40-50 students per year with smaller institutions annually receiving funding for only small numbers of students (as few as 1 in some cases) and Glasgow and Edinburgh receiving approximately 15-20 students each. Most funding is awarded by student-led open competition across Scotland – students submit proposals and statements of supervisor support, applying to only 1 University for funding with funding awarded to the best students/projects from a national selection process. Funding may also be awarded via smaller schemes such as through collaborative partnerships or supervisor-led projects where supervisors apply to have a project funded and then recruit a student to that specific project. Students may be funded at full or part time and most HEIs provide co-funding of up to 30% for each studentship. Co-funding and/or in-kind contributions may also be provided by external partners, such as Skills Development Scotland, Scottish Government, National Museums of Scotland, and a long list of public and private entities. The ability of the partnerships to leverage this additional funding from HEIs and external partners enables them to provide a larger number of studentships but also requires additional institutional

administration to manage the additional funding and partner relationships. This also means that the number of studentships available may change from year to year depending on these arrangements. The grants are provided as multi-year grants, generally for 5 or more annual cohorts, allowing the SGSs to plan a longer-term approach to allocating the funding and developing the supporting provision.

They were originally called 'doctoral training centres' and have been for some time called 'doctoral training partnerships' (DTPs). These designations (DTPs) may often refer to only the group of funded institutions rather than HEIs who participate only in the broader training and support activities without hosting funded students. In 2023, the AHRC DTP within the SGSAH consisted of 10 HEIs (Universities of Glasgow, Edinburgh, Aberdeen, Dundee, St Andrews, Stirling, Strathclyde, and the Highlands and lslands along with the Royal Conservatoire of Scotland (RCS) and the Glasgow School of Art (GSA)) with another 7 (Universities of Abertay, Edinburgh Napier, Glasgow Caledonian, Heriot Watt, Queen Margaret, Robert Gordon and West of Scotland) being part of the broader partnership along with external partners. The SGSSS has 14 institutions eligible to receive funding – the same 10 as for the SGSAH, less RCS and GSA, but including the universities of Abertay, Edinburgh Napier, Glasgow Caledonian, Heriot Watt, West of Scotland, and Scotland's Rural College (SRUC). Queen Margaret and Robert Gordon Universities are members of SGSSS but are unable to host studentships. At any one time, Glasgow would have approximately 100 to 120 students funded across both SGSs as well as students on thesis pending status, associated awards funding additional students through the SGSs (such as collaborative doctoral awards), and students on internships/placements but not otherwise in receipt of funding which can almost double the number of students who have an association with the SGSs.

Administratively, each Graduate School has a secretariat hosted by the institution that holds the funding – in Edinburgh for the SGSSS and Glasgow for the SGSAH. Each entity has both academic and operational directors as well as professional services teams and contributing academic staff from

across the partnerships. For most operational matters, they sit outside their host entities, but the link enables them to draw on University services such as finance and human resources. Academic colleagues contribute as deputy or associate directors with specific remits (e.g. supporting supervisors, student engagement, EDI), contribute to governance boards to the design and delivery of training and support or lead discipline-based configurations, often called pathways, under which funding is awarded.

SGSSS (2023) sees itself as a 'facilitator' of 'funding, training and support' according to their website and this also a 'facilitator of world-class research'. SGSAH (2023) by contrast describes its mission as:

> *'…to work together to inspire researchers who are talented, caring, ethical and reflective professionals with a demonstrable commitment to generating and mobilising knowledge across a range of scholarly, professional, and public communities'*

These statements of mission or description by these entities demonstrate the differences between them in ethos and approach although in operational terms they are very similar.

While both SGSs try to mitigate the geographic challenges of supporting students across a large area by holding events and training either online or at sites around the country, there is still a tendency to focus on what is called the 'central belt' in Scotland where both Glasgow and Edinburgh are located as well as the largest concentration of institutions holding funding (e.g., Stirling, Strathclyde, St Andrews). Students at institutions with smaller numbers of funded students or who are further away from the central belt may have a very small local cohort in their own or neighbouring institutions. This challenges the idea that there is the potential to build a supportive cohort of students across the diversity of institutions and geographical spread although this has been somewhat mitigated at by the increase in online support and training that has appeared due to the pandemic and lockdown periods (Pyhältö *et al*., 2023). Both entities offer a wide range of training and development opportunities that include summer schools, disciplinary-focused and

methodological training courses, additional specific training such as difficult language training, internships and knowledge exchange events/opportunities, career development events/opportunities, and funding pots to access a range of broader, more individual opportunities such as an overseas visit to another HEI.

1.1 Rationale for Research

The rationale behind undertaking this study is to, in part, examine the cohort model described by funders which operate at fairly large scales and across multiple institutions and organisations, while looking at the student experience of these funding streams. Universities, like other large organisations or publicly funded entities, rely significantly on quality measures and accountability and are inclined to measure things that are more easily measurable, such as number of publications, time to thesis submission or survey responses (Olssen and Peters, 2005; Park, 2005; Hancock *et al*., 2019; Dowle, 2022a). While aspects of the student experience are often surveyed by universities, such as via the national Postgraduate Research Experience Survey (PRES), they are accounted for in broad terms such as overall satisfaction.

Beyond the desire to better understand the value of these funding streams as cohort models and their contributions to the student experience, is a personal desire of the researcher to better understand the institutional, specifically at the University of Glasgow, and cross-institutional roles of these structures, and how this improved understanding might lead to positive changes in policy, process, and support for PGRs at the University of Glasgow. As a manager in a central research office role, the researcher-led policy and strategy related to doctoral education at the institutional level and was in a position to try to ensure that good practice was widely shared, and that policy and strategy developed in ways that enhanced the doctoral experience. This was also a professional development opportunity for the researcher to learn how to better and more confidently bring an experienced, professional view into discussions that are often cast as academic matters. This is akin to Whitchurch's (2008, p. 378) elaboration of 'third space' or 'blended' professionals who work in

partnership with academic colleagues in a space where contributions from those who support doctoral students in different ways are valued. Indeed, the journey taken by the researcher through the Doctorate in Education has occasioned significant personal reflection on this shared space and a desire to champion the roles of all contributors to the development and success of doctoral students. This might be seen along the lines of Nerad's (2012) suggestion of the need for a 'global village' to support doctoral development, acknowledging the range of internal and external learning communities needed to support doctoral students.

The position of the researcher as both a student and a staff member will be discussed in more detail in later sections. However, this dual role as staff and student was in the mind of the researcher throughout the conduct of this research and, arguably, enabled a deeper consideration of the variety of perspectives presented. This was due to an ability to see both staff and student perspectives from a position of greater personal understanding but with the knowledge afforded to a staff member working in this area (e.g. the history or reasoning behind policy changes and a knowledge of longitudinal survey data).

Finally, what is measured by HEIs is often given weight by its ability to be measured or is a proxy for a positive experience (e.g. time to submission) and therefore gives limited insight about the causes of satisfaction or the role of particular elements of the student experience in promoting satisfaction. Getting behind a population-level satisfaction score to a richer understanding of lived experience has been identified as a way to better understand the full range of variables, internal and external, which affect the doctoral experience and successful completion of the degree (Sverdlik *et al.*, 2018).

PRES (Postgraduate Research Experience Survey), a UK national survey run by Advance HE (formerly the Higher Education Academy) (Advance HE, 2024), is run every two years and participation is optional although large numbers of institutions participate. Glasgow ceased its

participation in 2020. PRES asks a range of questions about the student experience and what students are getting from their experience, e.g., are they developing career skills, research skills, do they feel confident that they will submit their theses on time, etc. Students respond on a 1-5 scale from disagree to agree and in a few instances are able to provide short text responses. The results of this survey are broadly useful to institutions but are often not deeply analysed. Satisfaction or otherwise is measured but understanding the reasoning behind different levels of satisfaction is difficult to glean from the survey. The survey is best positioned to provide mission groups, such as the Russell Group (a group of 24 research-intensive universities), or sector-level data about broad trends or benchmarking within mission groups.

Demographic data collected allows for viewing the responses of different populations, such as by gender, year of study, declared disability, etc. However, it is difficult to understand what leads to dissatisfaction for particular groups, only that they have expressed a greater or lesser level of satisfaction. This may, for some institutions, be a jumping-off point to explore the reasons for satisfaction or lack thereof with these populations.

Detailed analysis of several student surveys (one of which was PRES) was commissioned by the Higher Education Academy (now Advance HE) by Bokhove and Muijs (2016, p .35) and suggested that:

> *'Given the low variance at the institutional level and the significant predictors for all three surveys, it seems pertinent to not aim for a university-wide approach for student experience and student engagement. Rather, individual factors could be addressed by every institution individually. Institutional policies could be aimed at improving experiences and engagement for different gender and age groups, distance learning, disabled students and students from Australasia and North America.'*

Large-scale surveys such as PRES also do not provide more granular detail, such as, how a broader range of non-demographic factors like participation in an SGS or other training model centred on a funding stream are valued as part of the overall experience or what contribution

participation makes to the overall doctoral journey. It is not possible to discern a separate level of satisfaction, or any other measure, for these students let alone understand relevant aspects of their experience that may have led to satisfaction or dissatisfaction.

This study attempts to begin to fill this gap and take a closer look at the experience of students on SGS funding streams. This is not to discern a level of satisfaction but to provide more granular detail on the meaningful aspects, positive or negative, of the student experience for this group of students.

This research asked the students who were interviewed, all of whom were funded by an SGS, what aspects of their experience made the most difference to their doctoral journeys and how the SGSs contributed to this to begin to understand what role the SGSs play beyond the funding of students. While focusing on the SGSs role, broader experiential questions were asked so that the discussion about the SGSs emerged as a part of the overall context of their experience rather than the sole topic of discussion.

It should be highlighted here that this study is a snapshot of the PGR experience of SGS' funding for those who were interviewed. It does not consider in any detail the inputs or outputs to doctoral study, e.g., the admissions process, induction processes, preparation for careers, publications, or even the supervisory relationship. Participants may have raised any or all of these issues but none of these were a specific focus of the interviews.

1.2 What is Doctoral Education?

To set the scene for this discussion, a brief discussion about doctoral education in the UK context follows. Postgraduate researchers, variably described as 'PGRs', doctoral researchers, early career researchers (which can also refer to postdoctoral researchers), or even simply 'students', undertake research at a postgraduate level. Small numbers of students pursue master's degrees by research, such as an MPhil, or master's degrees about research, such as an MRes, that may be seen

as the first step into a doctoral degree. Research master's degrees are not considered in any depth in this dissertation as the focus of the funding streams related to the SGSs and the interview participants in the research were all doctoral level students.

Doctoral education refers to the delivery and/or pursuit of degrees awarded at the doctoral level, such as a Doctor of Philosophy (PhD or DPhil) degree or professional doctorates such as the Doctorate in Education (EdD) or (Doctorate in Clinical Psychology (DClinPsy). Doctoral degrees are generally defined by the conduct of a research project and the production of a written thesis which describes, contextualises, and analyses the project. Mellors-Bourne *et al*. (2016, p. iii) describe professional doctorates as undertaken by experienced professionals who wish to make 'a significant original contribution to professional practice through research' and as having more structure than traditional PhD programmes, generally incorporating taught elements.

The hallmarks of doctoral education are the original contribution to a discipline and the independent nature of the work. The Scottish Credit and Qualifications Framework (SCQF, 2012) puts doctoral study at 'Level 12', the highest level, and describes it as producing 'work that makes a significant contribution to the development of the subject/discipline/sector', requiring originality and creativity, communicating 'at the standard of published academic work', and demonstrating attributes such as intellectual autonomy, complex problem solving, professional judgement and leadership. The UK-wide 'Framework for Higher Education Qualifications of UK Degree-Awarding Bodies' (QAA, 2014, p. 30) uses similar language to the SCQF (2012) referring to attributes such as independence, originality, and complex problem-solving. QAA (2015, p.3) also describe doctoral degrees as 'the most individually distinct of the academic qualifications available because of their roots in research and the pursuit of knowledge, and the requirement for the candidate to produce work demonstrating original thought, based on independent study.'

Doctoral researchers demonstrate their original contribution and independent thought in a long form thesis (generally 50,000 - 100,000 words depending on the discipline) that sets out the state of research in the field, the process of answering the questions or testing the hypotheses, an analysis of the outcomes, setting it within the context of the discipline. This is followed by an oral defence of the work to an examining committee.

Bogle (2017) describes 4 stages of the development of PhDs - (1) 1917-1945 when UK institutions were just beginning to offer PhDs; (2) 1945 - until the 1970s when there was a period of growth but PhDs were not required for academic positions; (3) 1970s - 2003 a period of continued growth in numbers of PhDs, where holding a PhD became required for academic positions, when ideas about more formalised training for PhDs began to emerge, and when the first Research Assessment Exercise (RAE) in 1985 was conducted. The emergence of research assessment began to formalise measurement principles and metrics for research, one of which was the number of doctoral degrees awarded, thereby sparking additional growth in PhD student numbers. The fourth 'stage' of the development of the doctorate is marked by the release of 'Set for Success', what is often known as the 'Roberts Report' (Roberts, 2002) and its exhortation to the sector for transferable skills training for researchers. The significant impact of the Roberts Report is more fully described later in this chapter.

The journey to becoming a researcher and how students move through this journey as doctoral researchers is unlike other types of educational experience. PGRs work with supervisors, most likely a supervisory team with at least a primary and secondary supervisor, on an individual research project rather than following a structured programme of coursework and assessment. The UK is slightly different than some other countries, such as the US, where there is often a structured taught phase or coursework and assessment as phase 1 of doctoral programmes (Clarke and Lunt, 2014). There are also national and international norms that relate to doctoral education, such as the above-mentioned quality assurance frameworks, European-level policies (such as the Principles for

Innovative Doctoral Training (European Commission, 2011) as well as the norms, laws, and policies of individual countries (Clarke and Lunt, 2014). The extent to which it is normal for doctoral education to be somewhat loosely organised such as the traditional master-apprentice model with one supervisor with one student (QAA, 2015, p. 3), highly structured (such as professional doctorates, e.g. a doctorate in education, or doctorates with integrated studies which contain significant taught elements) or organised under institutional structures (such as graduate schools or doctoral colleges) varies greatly between countries and even between institutions. Over time, however, commonalities have emerged, such as the prevalence of personal and professional development training, academic and administrative structures such as Graduate Schools or Doctoral Colleges, and funding models or delivery structures that support doctoral education (Smith McGloin and Wynne, 2022).

1.2.1 The Purpose of Doctoral Education

While there is broad agreement about the high-level characteristics of doctoral education and/or doctoral graduates as defined in the quality assurance literature (for example QAA, 2015, 2018 or 2020) there is somewhat less agreement about the aims and purpose of doctoral education (Taylor, 2023). For a long time, doctoral education was a route to becoming an academic or perhaps a non-academic researcher. Latterly, especially as the numbers of doctoral students have increased beyond available jobs in the academy, there has been more focus on a broader range of careers and the role that well-qualified researchers have in the knowledge economy (Sarrico, 2022). This increase in numbers has led to a broader discussion about the skills that researchers bring to employment outside of academia and the contributions that they make more widely.

A report by the League of Research Universities (LERU, 2016, p. 3) describes the development of doctoral researchers as 'creative, critical, autonomous, independent risk-takers' and considers quality in doctoral education from the points of view of the institutional processes of doctoral education as well as the products of doctoral education (research and researcher). This report goes on to discuss the purpose of doctoral education in the context of the development of the individual

researcher, the thesis being evidence of this development, and the advanced skills developed in this undertaking which may be broadly applied by the researcher in a chosen career path. The 'Salzburg Principles' (European University Association [EUA], 2005) highlight as their first principle that 'the core component of doctoral training is the advancement of knowledge through original research. However, doctoral training must also meet the demands of an employment market wider than academia.' Training is a flexible concept in this context. While in some cases, it refers to training with the intention of skills development; in others, it is a broad reference to the doctoral experience as being training to be a researcher.

Others, such as Mowbray and Halse (2010), suggest a view of the purpose of the PhD 'as the acquisition of an interrelated suite of intellectual virtues' (p. 662) and that this approach can move the discussion of value or purpose past economic considerations 'to the progressive building of virtuous individuals who contribute to society through their productive actions' (p. 662). They further assert that this offers the benefit of an acknowledgement that the future, and future labour markets, are unknown and that therefore an approach that focuses on human flourishing has more potential long-term value than a prescriptive approach based on short to medium-term thinking about skills needed in the economy. Wisker *et al.* (2019) similarly suggests a broader view that goes 'beyond the kinds of skill development and graduate attributes embedded in university marketing and learning outcome statements'. They highlight the importance of the personal journey of transformation and the ways the individuals conceptualised and applied their critical and analytical skills to professional contexts.

These tensions are evident over time with policy documents detailing changing views. In 1963, the Robbins Report recognised several of the aims of higher education (pp. 6-7), one of which was being able to flourish in a career. However, the report was also clear that critical thinking, a drive to discover new things as well as 'the transmission of a common culture and common standards of citizenship' were equally important. A shift can, however, be perceived in the 1993

White Paper 'Realising our Potential' (DTI, 1993) which was clear about the importance of 'ensuring that more of the very highly qualified (those trained to post-graduate level) have skills which are better matched to the needs to potential employers, including those outside the academic world' (p. 54). This White Paper further notes that the Government was worried that PhD graduates did not have skills that matched employer needs whether academic or commercial. This discussion continues to this day and PhD students are still often cast as not being sufficiently career-ready or having the skills or the understanding of their skills to be 'job-ready' (De Grande *et al*., 2014). In 1996, Harris Review of Postgraduate Education (Harris, 1996) did, however, also acknowledge that postgraduate education had both public and private purposes and could serve the needs of both individuals and society.

This notion of personal satisfaction (beyond career satisfaction) has now largely gone from policy discussions about doctoral education with the focus heavily on the discussions of innovation and developing new knowledge. Recommendation 31 from the Dearing Report (1997) 'Higher Education in the Learning Society' stated:

> *We recommend to institutions of higher education that they should, over the next two years, review their postgraduate research training to ensure that they include, in addition to understanding of a range of research methods and training in appropriate technical skills, the development of professional skills, such as communication, self-management and planning' (p. 182).*

Roberts (2002) a few years later recommended that a minimum standard for postgraduate students was to undertake two weeks of dedicated training, largely focused on transferable skills. This report suggested that a lack of transferable skills could lead employers to undervalue graduates with postgraduate degrees (2002, p. 32). However, viewpoints continue to change with another shift towards a positive research culture and more of a view that supporting researchers to thrive is also a way to support research is also now evident in documents such as the Research and Development People and Culture Strategy (UK Government, 2021).

Funders and therefore universities and others who benefit from funding, are more likely to articulate the purpose related to the outcomes, e.g. the researcher in the LERU report above, or the research itself as described by UKRI (2018) as pursuing 'key strategic priorities' (p.12) in an environment of excellence as skilled individuals who will contribute to the economy or society. UKRI, as the largest funder of doctoral education in the UK, has supported a particular approach to organising doctoral education to support their stated aim, which is: 'to develop highly skilled researchers to achieve impact across the whole economy, as well as developing the next generation of researchers to maintain national capability' (UKRI, 2016, p.1).

However, for many HEIs, while it is an interesting idea to consider the purpose of the doctorate, the practical reality is that doctoral researchers are taking the first step as an early career researcher, can support existing research work in HEIs, and can bring in funding to support themselves in this. Further, HEIs derive repetitional benefits from being able to offer prestigious, competitive funding to students and thereby grow their population of researchers (Sarrico, 2022).

The reason for exploring these ideas around purpose is to begin to understand the role of doctoral training models in achieving the purposes or outcomes, depending on one's perspective, of doctoral study. It is also to highlight the complexity of this undertaking which has such a variety of purposes and values to individuals, institutions, and societies. Purpose, however important, does not have a direct link to the individual experience of doctoral students. For students, the purposes of doctoral education may be highly personal as well as career outcome related. It is therefore important to consider doctoral education for more than the purposes it serves and consider the journey of exploration and transformation undertaken by doctoral researchers.

1.3 The Evolving Context for Doctoral Education

This section will look at the context of doctoral education, how this has changed in recent years in the UK and key factors in these changes, such as the emergence of more structured doctoral education and the role of the research councils and other funders in driving these changes.

Due to the policy changes described above, doctoral education has undergone significant changes in terms of how it is delivered and managed by universities, perceived by funders, governments, and employers, and experienced by staff and students (Sarrico, 2022). Formerly, doctoral students worked with individual supervisors under what is often characterised as a master-apprentice model (one student, one supervisor) and expectations related to timely thesis submission and maximising the number of publications submitted while still a student were minimal (Taylor, 2012). Kiley (2017, p. 309) highlights that there has been a 'transition from an almost exclusive focus on the candidate and supervisor as the designers of the PhD to now the involvement of school, faculty and central staff in designing the learning experience'. The involvement of others beyond students and supervisors goes beyond institutional actors and now extends to extra-institutional actors, such as the SGSs, and disciplinary and other networks.

Over time, doctoral education has become more structured, more accountable to funders, and attracted ever larger numbers of students (Hancock *et al*., 2019). That said, the number of postgraduate researchers, having grown significantly since the 1960s through to the 1990s, has remained fairly flat since that time. Much of this was driven by government policies which promoted innovation and economic growth. However, greater numbers of students pursuing doctoral education have had the benefit of somewhat increasing the diversity of the student population with more women pursuing doctoral education and with more part-time provision available so that students are attracted to doctoral education from a range of age groups (Nerad 2012). Others, however, argue (Neumann, 2007) that the performance-based regimes related to higher levels of

accountability from universities to funders and to government has increased selectivity in recruiting doctoral students and therefore also narrowed the field in terms of participation.

Universities compete for funding, for students, for industry, public sector and third sector partners and for international partners. Doctoral students, like other students, are encouraged to undertake mobility opportunities and have international experiences as well as undertake placements or internships to develop their skills and solidify these partnerships and research collaborations. Students taking diverse career paths arguably need to have a broad range of skills beyond those which may have been suitable in the past to thrive as an academic and a scholar. It is now seen as necessary for students to develop a broad range of skills and the ability to discuss their research with a wide range of audiences and seek to make an impact with their work. Even students who would pursue an academic path would need this broad range of skills as they are now part of what are considered the professional skills of a researcher (Vitae, 2010a) as described in the Researcher Development Framework. While much of this may be contested, for example, debates around skills acquisition, the transferability of skills, or pressure on universities to partner and compete, the landscape nonetheless has changed from an earlier period when doctoral award holders tended to move into academic roles and were supported by a supervisor in a master-apprentice relationship.

Research Councils and other funders who provide funding for doctoral students are encouraged by governments to target this funding in such a way as to meet national strategies and to promote innovation and economic growth as doctoral students are perceived as 'drivers of change and innovation who contribute crucially to the production of knowledge' (European University Institute [EUI], 2017, p.4). Students are recruited through ever more complex scholarship schemes targeted at meeting specific perceived needs of the economy or the workforce (Lunt, *et al.* 2013). There is also a drive towards 'grand challenges' and greater interdisciplinarity and an expectation that doctoral study should have 'real-world relevance' (Mullen, 2003).

Lunt *et al.* (2013) also point out that there are other drivers at play here as well, highlighting a growing managerialism in higher education as well as the complexity of the field with government and funders each taking roles and assigning responsibility to universities for the delivery of strategic goals. This increases bureaucracy and puts some control of the research agenda in the hands of funders and research managers rather than academics and students. Indeed, Lunt *et al*. (2013, p. 152) observe that research councils are moving from 'funder to partner' and 'actively shaping research and doctoral training policies of universities.

Nerad (2012) in discussing changes in recent times in doctoral education, highlights what they see as a fundamental shift in knowledge production from Mode 1 to Mode 2. Mode 1 fits with a master transmitting their disciplinary knowledge to an apprentice while Mode 2 refers to how knowledge is used and applied to solve problems and 'involves multiple actors (universities, industry, business, and governments' and 'translational research' which benefits society and the economy (p. 60). Neither of these is wrong per se but as noted in several places in this chapter, the delivery of doctoral education has changed as have the funding models, the social and economic environment in which it is undertaken and views on the purposes of doctoral education (Taylor, 2023).

Nerad (2012) also notes that the structures required to work with a focus on Mode 2 have had to shift and develop to support this. A supervisor can only provide part of this picture, and students move through multiple environments and communities to participate in the range of academic and development activities required of them. Supervisors, however, are not just academic guides and supporters as there is pressure on them to support students in the broader range of activities they undertake and even provide career advice outside of their personal experience. Students see their supervisors in these roles, looking to them as a primary source of guidance in many cases, and supervisors do their best to support their students, but this has become an increasingly complex enterprise for supervisors. This has been highlighted in recent work in the sector, such as the UK Research Supervision Survey Report from the UK Council for Graduate Education (UKCGE, 2021, p.

26), where supervisors expressed the increasing demands on them to support students in a wider range of areas.

Students are also under pressure to submit their theses within 4 years (pro-rated for part-time students), undertake training and development, and may be expected to undertake internships and publish one or more papers based on their work. Universities can be sanctioned by funders if enough students fail to submit on time and Universities in return pressure students to meet this performance target. This can be at odds with the training, career development, internships, conferences, public engagement, and keenness to publish that students also participate in. While these targets can be challenging to meet and place pressure on students, it is generally considered beneficial for students to be supported to finish in a reasonable amount of time and move on with their lives, if possible.

Arguably, much of what students are asked to do is related to developing their skills and abilities to move into productive and successful careers, but it can place tremendous pressure on students and notably, a key issue for doctoral students is their well-being in the face of this pressure. Students may drop out or become unwell and it has been suggested that doctoral study can be less about intellectual rigours than the ability to survive the experience (Metcalf *et al.*, 2018). There has been a focus in the higher education sector on doctoral student well-being and arguably, doctoral researchers are in a position where many of the issues facing students are exacerbated by these pressures as well as the responsibilities of adulthood, family, etc. (Leveque *et al*., 2017).

Students also need to think about their career plans in a way they did not have to in the past. Ever smaller numbers of students move into academic posts once they have graduated. Non-academic jobs are the norm. In some disciplines, this is less problematic as, for example, scientists in many areas may have clearer career paths to choose from, e.g., becoming a research scientist in a commercial enterprise. However, in many disciplines, this career path is less clear-cut, and students must work hard to carve out a niche based on their experience and interests. This is challenging but

not entirely negative as there is significant evidence that doctoral graduates are highly skilled and as a group have a very high rate of employment (Hancock, 2021). For some though, this is a journey through short-term posts and portfolio careers to build up experience and find a suitable career path. Employers outside the hard sciences may also be unused to employing doctoral graduates and may not initially perceive the value they can bring to their companies.

1.3.1 Funding Models

UKRI, as noted above, is a key funder of doctoral education, through which significant UK government funding flows to support research. Universities bid for doctoral funding or are allocated funding based on complicated algorithms related to a range of research success measures. This funding is usually provided through a DTP, CDT, or similar structure. The focus of these structures is to support the delivery of doctoral training in such a way that UKRI can demonstrate that it is meeting its stated goals. The mission of UKRI (UKRI, 2018, p. 11) is to "work with our partners to ensure that world-leading research and innovation continues to grow and flourish in the UK.' In 2022 (UKRI, 2022, p. 5) they said:

> *'…our strategy sets out how we will work with our many partners and stakeholders to foster an outstanding research and innovation system in the UK that drives economic, social, environmental and cultural benefits for all citizens, transforming tomorrow together.'*

Doctoral researchers are generally not discussed explicitly in these strategic documents but have begun to emerge in strands of work related to people, talent, or culture as noted above. For example, an objective is set out to 'develop and retain the world's best researchers, positioning the UK as a destination of choice for the full range of top talent' and this is inclusive of PGRs (UKRI, 2022, p. 15).

In their 2018-19 statement of accounts, UKRI (2019) confirmed that they funded over 6,000 new doctoral studentships in the UK during 18/19 and that at any one time, over 20,000 students are benefitting from their funding. UKRI (2021) in their 20/21 statement of accounts noted that UKRI

were the largest funder of PhD students in the UK and that funding was provided for 5,000 new students in 21/22. Numbers of students funded have decreased due to significant funding provided for Covid-19 related extensions. Numbers in the future will likely be impacted further by cost-of-living increases provided during 22/23 or in the future.

UKRI funds doctoral research mainly through doctoral training partnerships (DTPs) or centres for doctoral training (CDTs) or similar models and these models fund doctoral training within the disciplines supported by the council providing the funding, e.g., funding for the social sciences by the Economic and Social Research Council. They are multi-year, multi-student, and frequently cross-institutional funding streams. Broadly speaking, DTPs cover a broad range or even the full range of disciplines funded by a given council while centres for doctoral training fund smaller groups of students in narrower discipline areas. As an example, the 'Centre for Doctoral Training in Celtic Languages' funded by the Arts and Humanities Research Council (AHRC) contrasted with the broad funding for all Arts and Humanities research via DTPs funded by AHRC.

As universities compete more for funding and are more accountable for the use of the funding and for reporting the success of their students, for example through the Research Excellence Framework metric of number of doctoral degrees awarded, universities have had to change their approach to doctoral education. This reporting has changed views of success in doctoral education to focus on what universities can measure (e.g., timely completion) and has served to increase pressure on students. They are not just expected to publish (this pressure varies by discipline) but to engage in employability-promoting development and participate in activities related to agenda such as impact and/or public engagement with a view to broadening their skills. This pressure for measurable outcomes can either work for or against a focus on the student experience. While a focus on developing a broad skill set is helpful to students in terms of the learning experience and preparation for a future career, the focus can be on these developmental aspects rather than on the lived

experience of navigating through a doctorate, often to the detriment of individual well-being (Sverdik *et al*., 2018).

1.4 Drivers for Change

Institutional structures relating to doctoral education have also emerged over time as universities arguably reflect these changes in bureaucratic approaches to managing more students and more structured doctoral student journeys as well as higher levels of accountability to governments and funders (Holley *et al*., 2023). These have been reflected in three strands of change - the emergence of the importance of transferable skills training, graduate school or similar structures to support doctoral education within HEIs, and cohort models associated with funding streams.

1.4.1 Transferable Skills Training

Since the publication of 'SET for Success' (Roberts, 2002), Universities have been strongly encouraged, many through the direct provision of funding awarded specifically to create training programmes (Hopwood, 2010b), to provide what is often referred to as 'transferable skills training' but which is referred to here as personal and professional development. Nerad (2015) discusses some of the subtleties of the terminology and highlights that training and development aimed at postgraduate researchers are described differently, e.g. as skills, competencies, or capabilities, or as generic, professional, or transferable. There are also debates about the extent to which skills are transferable from one situation to another (Holmes, 2001). Personal and professional development, however, as a concept potentially accounts for a broader range of activities, includes activities related to research and to careers, and implicitly considers the researcher and their individual needs.

This type of development is generally perceived as beneficial to students and enabling of career development for students no matter their chosen career. However, this approach to training is

not without contention. Hopwood (2010b) notes that a model of training as generic skills acquisition is lacking and misunderstands the nature of doctoral education, seeing students as vessels to be filled with skills rather than purposeful and intentional learners. Craswell (2007) criticises what she refers to as the 'employability discourse' which she says provides no evidence to suggest that students are lacking skills and that this approach puts value on some kinds of skills over others without justification. Other authors suggest that the issue is not that students need training to address a lack of skills but that the training can help them to understand what skills they do have and to better present these to employers (De Grande *et al*., 2014).

A key recommendation of the 'Roberts Report' (Roberts, 2002) suggested there should be minimum standards for training and that these 'should include the provision of at least two weeks' dedicated training a year, principally in transferable skills, for which additional funding should be provided' (p. 196). This resulted in funding provided to universities of over £120m (Hodge, 2010) to support the development of training courses, staff, and structures within universities to deliver this agenda. Many Universities have since, on the instruction of Research Councils UK (known now as UKRI), from which the original funding came, begun to take £200 pro-rata from each research student's tuition fees each year to continue to fund this activity.

In addition to the funding, another outcome of the Roberts agenda was work undertaken by Vitae (vitae.ac.uk) to develop the Researcher Development Statement (RDS) and Researcher Development Framework (RDF) (Vitae 2010a, 2010b) which 'sets out the knowledge, behaviours and attributes of effective and highly skilled researchers appropriate for a wide range of careers' and 'which aims to enhance our capacity to build the UK workforce, develop world-class researchers and build our research base' (2010b, p. 1). The statement comprises four domains, 12 sub-domains and 63 descriptors of skills. The domains are knowledge and intellectual abilities, personal effectiveness, research governance and organisation, and engagement, influence, and impact. Vitae (2010a, p.3) describes the articulated skills as the 'characteristics of excellent researchers' which they have

derived from their research on researchers. The RDS notes: 'The UK is committed to enhancing the higher-level capabilities of the UK workforce including the development of world-class researchers. Researchers are critical to economic success, addressing major global challenges, and building a leading knowledge economy' (2010b, p. 1).

The skills articulated are related specifically to research and the professionalism required of researchers as well as personal effectiveness and communication skills. This RDS and RDF (Vitae 2010a; Vitae 2010b) support the implementation of the Roberts agenda in a detailed way and have been used by universities to develop training programmes, analyse gaps in their training programme offerings, and by students to analyse gaps in their skills. Arguably, it is now necessary for students to develop a broad range of skills, have the ability to discuss their research with a wide range of audiences, and seek to make an impact with their work. These skills are valued whether students pursue a career inside or outside of the academy. While some of this may be contested, for example, debates around skills acquisition (Mowbray and Halse, 2010; Spronken-Smith, 2018) or pressure on universities to partner and compete (Pucciarelli and Kaplan, 2016; Smith McGloin, 2013), the landscape nonetheless has changed (Taylor, 2023). These changes are significant as they drive behaviour and drive changes in the delivery of and experience of doctoral education.

1.4.2 Emergence of Institutional Graduate Schools

Delivery of these personal and professional development training programmes has created administrative structures within universities and encouraged colleagues within institutions to cooperate and collaborate to design and deliver this training. Every university organises itself differently (e.g., departments, faculties, schools, colleges) according to its own cultures and internal structures, but in many universities, structures such as Graduate Schools and Doctoral Colleges have emerged. These often coalesced around the administrative structures that were created in many cases to deliver training provision, sprung up in response to the developing trends around supporting

doctoral education in more cohort-based formats, or emerged to manage the agreed demands of the funding stream.

Graduate Schools and Doctoral Colleges have emerged as key organisational structures within universities that specifically support doctoral students (and often by extension research master's degree students and/or postdoctoral researchers) (Smith McGloin and Wynne, 2022). They not only generally deliver training programmes for personal and professional development and support the development of research skills; they also often provide a range of support mechanisms and community-building efforts for their students. Students may have dedicated buildings, spaces for work or socialising, or for organising their own training or events. The Graduate School or Doctoral College may host a range of events as well to support career development, well-being, community building, etc. These physical spaces can be a focal point for activity and support for doctoral students. These organisational entities may also have a variety of responsibilities around the doctoral students' academic journey and house staff related to supporting a variety of administrative roles.

Alongside this, the regulation of doctoral education has also changed with more detailed regulations related to a more comprehensive quality perspective on doctoral education. In 2004 the Quality Assurance Agency for Higher Education published the Code of Practice for Research Degrees (QAA, 2004) and in 2011 a statement on 'Doctoral Degree Characteristics' (QAA, 2011). This was followed by an update to the Code in 2012 (Chapter B11: Research Degrees) (QAA, 2012) and in 2015 (QAA, 2015) and 2020 (QAA, 2020) to the Doctoral Degrees Characteristics. In response to this clearer and more specific quality regime, upon which quality reviews of institutions depend, institutions have tightened and expanded their own regulations, codes, and processes. Many institutions now have 'codes of practice' or similar handbooks that detail expectations and good practice in delivering doctoral education.

At a School or department level, students generally have at least two supervisors or a supervisory team to ensure that their needs are met and to protect against the potential for a conflict in a relationship with a single supervisor. This was codified in the above-noted Chapter B11 (QAA, 2012, p.17-18) where it was stated that students should benefit from a supervisory team. However, the context for supervisors has changed as well - Taylor (2023, p. 608) discussed the reshaping of doctoral education into a 'provider-consumer framework' and this changes the role of the supervisor from the master in the master-apprentice dyad to one more like a service provider. This is described as both commodification and collectivisation - treating doctoral education as a commodity, such as that provided to a consumer, and the move to greater numbers of supervisors and supporters involved in an individual's doctoral journey. Taylor goes on to highlight that this collectivisation can add complexity and potential conflicting voices to the student experience but also provide students with a greater network of support (2023, p. 609).

The Code also highlighted other processes for postgraduate researchers, such as transfer processes and/or annual progress reviews which ensure that at agreed intervals, depending on the institution, student progress towards completion and their suitability for doctoral study and participation in training is monitored.

1.4.3 Cohort Models

Cohorts, cohort models, and cohort approaches may be used variously to describe doctoral education that includes a cohort of students as an aspect of the student experience. The defining aspects of a cohort relate to the existence of some sort of learning community or community of support (Maher, 2004). Cohorts may also exist within or across organisational entities or institutions and may be formal or informal and have emerged as quasi-administrative structures in many areas. They are supported by several funders as a way of funding doctoral education, efficiently supporting the delivery of training and providing what is intended as a peer-supported experience for students (Choy *et al*., 2015).

Smith McGloin and Wynne (2022) discuss 'cohort-based doctoral training programmes' in terms of structures and cross- and extra-institutional partnerships and collaborations (p. 20). In some cases, however, the emergence of a cohort may be due to an informal association of students who engage with the same organisational entities or physical campus spaces. In some cases, this may be a design feature of a programme to ensure that students do not feel isolated or form a sense of community during their doctoral studies. In others, it may be a deliberate academic design to support learning and development. In others, it may be an administrative convenience to apply to a group of students with some shared aspects to their journey. The last possibility is potentially quite broad, such as an annual cohort of students who have little association besides starting in the same year or at the same time or are passing through programme stages at roughly the same time. Arguably, the size of the SGSs in terms of student numbers and in terms of the number of institutions involved in the partnerships make meaningful supportive cohorts difficult to achieve in practice and are more akin to the structural approach described by Smith McGloin and Wynne (2022) above.

Several of the Research Councils have undertaken a review of their provision in the past few years and articulated the perceived value of these training structures in relation to peer support, networking, collaboration, research training, and skills development. The Engineering and Physical Sciences Research Council (EPSRC) highlights the peer support and learning inherent in students working together and the support and research catalysed by a network of partners that work together and with the students (EPSRC, 2021). ESRC however articulates its vision for DTPs and CDTs around developing social sciences researchers and the skills development, knowledge, and opportunity for collaborative and interdisciplinary working that are delivered through the DTPs (Tazzyman *et al*., 2021). An AHRC review listed the strengths of the DTP/CDT model as the peer support and networking for students and the enhanced training and skills development available (Careers Research and Advisory Centre (CRAC) and Vitae, 2022). The Natural Environment Research Council (NERC) in a similar review highlighted the successes of the DTP/CDT model as the high quality

of research undertaken, the excellent students supported and the opportunities for networking and collaboration (Pye Tait Consulting, 2022). Each of these reports to a greater (AHRC/NERC) or lesser (EPSRC/ESRC) extent discusses the approach as a cohort model or cohort-based training. While graduate schools, doctoral colleges and similar organisational structures are generally institutional entities, the funding provided by UKRI extends this structural construct across multiple institutions, generally with some geographical closeness or connection.

While the UK does not implement the same formalised stages (coursework and qualifying examinations) as those in US Doctoral Education (Clarke and Wynne, 2016), what has emerged in the UK are several programmes where students take prescribed taught courses either at the beginning or over the duration of their doctoral study, often referred to as 'integrated studies' (Smith McGloin and Wynne, 2015, p. 30). Students have always taken additional courses where this was thought to be necessary, but this has tended to be on an ad hoc basis to meet specific needs. The Economic and Social Research Council in the UK often asks students to undertake a master's degree (MRes) about research (rather than by research) before undertaking the PhD to ensure this level of knowledge and readiness. The 'integrated studies' approach takes this a step further by embedding some of this into the doctoral programme itself and with the courses leaning towards subject knowledge rather than more generic research methods or broader skills. This can, to some extent, provide the kind of support offered by a cohort as students may share some or all the additional taught elements and work or travel together through aspects of their programmes.

Students participating in funding models, or which replicate funding models, generally also participate in cohort groups, broadly defined, of various types and will participate in both research-related training as well as personal and professional development training. The UKRI Statement of Expectations for Doctoral Training (UKRI, 2016. p. 2) states a preference for structure and peer support: 'Students should, wherever possible, benefit from the advantages of being developed as

part of a broader peer group (e.g., through cohort approaches and Graduate schools)'. This suggests that Graduate Schools in and of themselves create a sort of supportive cohort for their students.

The benefits of a cohort approach are, however, discussed mainly in broad terms, such as 'collegiality' and creating networks (CRAC, 2017). The Economic and Social Research Council (ESRC) (Bartholomew *et al*., 2015) found that 'studying as part of a cohort is hugely beneficial to students in terms of the support received from one another and also the training opportunities available to them' (p. 4). Neither the CRAC (2017) evaluation, the Bartholomew (2015) paper nor other similar evaluation reports (e.g. EPSRC, 2021) expand on these stated benefits other than to suggest that they exist. Indeed a more recent evaluation of DTPs and CDTs for the Natural Environment Research Council (Pye Tait Consulting, 2023), both of which it classes as cohort models, underscores some of these earlier findings such as that the ability to work with peers and build personal networks is highly valued but that training and support can be variable as well as challenging to organise across the cohort and that a one size fits all approach does not work.

Arguably, the extent to which these large structures provide a cohort is debatable. While there are training programmes and a range of development opportunities available to these students and they may benefit from being treated by a group within their institutions for inductions or communications, these are large groups of students across multiple institutions and therefore it may be difficult to characterise them as a cohort in the sense of a shared experience. The size and diversity of the cohorts often mean that there is a menu of training, small amounts of which are compulsory, from which students may pick. They are not following identical programmes. The structure of the funding stream (i.e. the number of universities in the partnership and what was agreed with the funder) will dictate the extent to which students participate in training within the institutions in which they are registered, through partnership with other institutions, either in a neutral partnership space or at other institutions, or through the doctoral training entity itself.

1.5 Conclusion

This chapter has articulated the research questions and rationale for this study along with a discussion of the broad context of and drivers for change in doctoral education. There has been significant change in the design and delivery of doctoral education but often assumptions about or failures to agree on the nature, value, and/or purpose of doctoral education. Even the assessment of national survey data suggests the value of a more individualised approach (Bokhove and Muijs, 2016) despite the changed context and evidence of the commodification and collectivisation of doctoral education (Taylor, 2023).

2 Literature Review - Theories of Learning

This chapter discusses several theories of learning and how these might apply to doctoral education. A short path through the broad expanse of possible learning theories that might be discussed sets the background for a key debate on the location of learning. Many theories take sides, so to speak, in a debate about whether learning is 'inside' (cognitive), 'outside' (situated), both, or along some continuum between these (Illeris, 2009; Castle, 2021, p.19). This chapter suggests the middle position where learning is both individual (inside) and situated (outside) and sets the scene for a socially oriented view of learning that enables the description of the landscape of learning for doctoral education.

2.1 Broad Learning Theories

Learning theories seek to articulate the way that individuals learn and by extension how learning opportunities for students based on those theories might be designed according to one theory or another. There are many theories, but they can be grouped into several high-level categories, such as: behaviourism, cognitivism, constructivism, and social theories of learning. No list like this could fail to be contested but these categories suit this analysis as they enable a consideration of learning that moves from a reactive (behaviourist) perspective through to a more connected, socially oriented way of thinking about learning.

Behaviourist ideas (Hoy *et al*. 2013, p. 242; Castle, 2021 p. 13), briefly, rely on the idea that learning equates with a change in behaviour and that individuals respond to their environments in ways that change their behaviours. Theories in this vein look at inputs and outputs to or from individuals which may predict or influence behaviours, and which therefore can be measured or manipulated. There is often little consideration of what takes place internally for the learner as they are seen as reacting to external stimuli or learning to emulate what they see. However, this is not in the sense of relational interactions with the social world but rather in what an individual encounters

or observes or how the environment can be manipulated to influence individuals to behave in particular ways. While some of the ideas around behaviourism as an education paradigm have fallen out of fashion, many ideas are still in use today in an applied sense through processes of behaviour modification, positive and negative reinforcement, and other methods of assessing and trying to influence what are seen as negative behaviours (Hoy, *et al*. 2013, pp. 253-269).

Cognitivist ideas (Hoy *et al*., 2013, p. 290-291), briefly, are concerned with how individuals build and store knowledge internally rather than demonstrate particular behaviours. It is considered that there are figurative cognitive structures 'in the mind of the learner' (Lave, 1993, p. 202) where theorists might guess at how individuals internally structure their thinking or what they learn. Individuals have an active role in what they learn and the knowledge or ideas that they internalise. However, this approach still attempts to explain behaviours based on what is internal to individuals (Castle, 2021) and assumes that there is some sort of processing, analysis, and/or meaning making taking place internally.

Constructivist ideas build on cognitivist ideas but focus on individuals' ability to build or construct knowledge and meaning from their experiences and interactions. The emphasis is still however on the individual. Hoy *et al*. (2013, p. 402-3) assert that there are possibly two main branches to constructivism (p. 403-4) which they describe as psychological and social. The former may also be called 'individual' constructivists or 'cognitive' constructivists as they focus on how individuals construct knowledge and how this processing might be done or meaning might be created by the individual. Social constructivism shifts the focus in constructivism to how social interactions help learners to construct knowledge, and the roles played by context and culture. Prawat and Floden (1994. p. 37) assert that 'social constructivists are distinctive in their insistence that knowledge creation is a shared rather than an individual experience' but also note that 'social constructivists agree on little more than the important assumption that knowledge is a social product.'

Säljö (2009, p. 203), however, asserts that 'Behaviors and cognitive processes no longer suffice as basic constructs for providing a coherent and interesting conceptualisation of learning; there are many other issues that have to be considered such as time, situatedness, and reciprocity between individuals and cultural practices.' He also (2009, p. 206) cautions against over-simplifying the concept of learning and stresses that the differences between traditions largely reflect different perspectives and ways to analyse learning and knowledge.

Malcolm Knowles (1970), although he was not the first to consider this, elaborated a theory that asserted that adult learning was different from learning in school as children as, in brief, adults have more life experience, are more independent and self-directed/self-motivated, and have goals or reasons for learning (Lord, 2022, p. 275). Critics were quick to suggest that the ideas that Knowles put forward were not, however, isolated to adult learning (Houle, 1972, London 1973, and Elias, 1979, cited in Davenport and Davenport, 1985, pp. 153-154). Long (2022) prefers to define andragogy as suggesting processes to engage with learners, such as using these processes to help doctoral students through the dissertation stage of their degree programmes by 'meeting the student where they are' (p. 106). Several others criticise the approach, however, such as Cosgrove (2022, p. 5), on the basis that it treats learners as if they were in a vacuum without any socio-cultural context and Grace (1996) who feels that andragogy is an individualistic approach that does not incorporate the context or social milieu of the learner or consider why learners might struggle to learn.

Moving on from these more individually focused approaches are more socially oriented theories of learning which consider the context of the learner and situate them in relationships and networks and articulate a more complex view of learning and learners than an internal construction of knowledge.

2.2 Socially oriented theories of learning

Learning, as noted above, is understood by some as building cognitive structures or internal representations of knowledge for individuals. Learning, for others, is about social participation in authentic activities. Yet, for others, there are attempts to build a middle ground that encompasses both the individual or agent and their interactions with the world around them. Packer and Goicoechea discuss the differences between constructivists, noting that 'what constructivists call learning is only part of a larger process of human change and transformation' and that this 'larger process' is what is called learning by socioculturalists and that 'acquiring knowledge and expertise always entails participation in relationship and community and transformation both of the person and of the social world' (2000, p. 239). Situated learning or similar theories, may be described as a way to transcend the inside/outside dichotomy and think about learning as part of a context or social milieu. This is perhaps a way to understand the relationship of the learner to the learning/knowledge rather than seeking a location for learning or knowledge.

A seminal work that discusses such an approach is Brown *et al.* (1989) 'Situated Cognition and the Culture of Learning'. They argue that the activities undertaken and the context in which learning is taking place are fundamental aspects of that learning experience. They assert that (p. 32) 'activity, concept, and culture are interdependent. No one of these can be fully understood without the other two. Learning must involve all three.' They further describe the idea of 'enculturation' (p. 34) as part of learning – being in and absorbing knowledge about your social surroundings through active engagement in authentic activities. They further, as noted above, suggest the idea of a 'cognitive apprenticeship' building on the idea that learning is through activity, like an apprentice learning with a master, and that activity and engagement lead to learning. However, the learner is still seen as being enculturated into their milieu and while activity, concept, and culture may be interdependent, the learner is not seen as an active influencer on the existing culture. Socialisation will be discussed in more detail in the next chapter but the extent to which an individual is brought into or assimilated

by a culture or context, the extent to which an individual internalises aspects of a culture or context, and finally the extent to which individual, culture or context are changed by this interaction is a matter for debate. However, Packer and Goicoechea (2000, p. 239) take the position that socialisation is not straightforward and 'that the person is constructed, in a social context, formed through practical activity, and in relationships of desire and recognition that can split the person, motivating the search for identity' and that this corrects 'any simple equating of identity with community membership, and of learning with enculturation'. This 'split' is the divide between these inside and outside perspectives on learning which need to be reconciled by an individual, i.e. what one knows, what one encounters and engages with in social settings, and how individuals reckon with this in terms of new knowledge and new identities.

Lev Vygotsky (1896-1934) is considered a key theorist of what is now often called a sociocultural approach. Wertsch (1991) (cited in John-Steiner and Mahn, 1996, p 192) highlights three themes in Vygotsky's writings:

'(a) that Individual development, including higher mental functioning, has its origins in social sources; (b) that human action, on both the social and individual planes, is mediated by tools and signs; and (c) the first two themes are best examined through genetic, or developmental, analysis.'

The term genetic is used frequently in the context of learning to refer to a genesis, where something comes from, rather than denoting genes or DNA. John-Steiner and Mahn (1996, p. 192) describe Vygotsky's theory as human activity taking place 'in cultural contexts', being 'mediated by language and other symbol systems', and 'best understood when investigated in their historical development'. Further (p. 193), they highlight that 'the power of Vygotsky's ideas lies in his explanation of the dynamic interdependence of social and individual processes.'

The social experience is what individuals encounter when they engage in interactions with other people, artefacts, situations, workplaces, and practices (Billett, 2006, cited in Hopwood 2010b,

p. 832).' Hopwood (2010b), taking an explicitly sociocultural approach, looks at the agency of learners and asserts that learning is likely a result of these social interactions, what individuals decide to interact with, how they interact, and what their interpretations are of these interactions, further shaped by their existing personal experiences. This suggests a certain level of choice and engagement by the learner and that 'learning entails both personal and social transformation' (Packer and Goicoechea, 2000) through experience and interpretation.

Baker and Lattuca (2010) also discuss a similar theory, combining a sociocultural approach and a theory of developmental networks to discuss identity development during the doctorate*:*

> *'…learning and identity development go hand in hand – it is through participation in the intellectual community in the field and the home institution that doctoral students build the knowledge and skills required for scholarship in their field of study and make choices about the roles and values associated with a career in the academy' (p. 809).*

They were specifically looking at the development of students on an assumed academic career path, but this applies more broadly to post-doctoral careers and the broad skills that doctoral students develop during their programmes.

2.2.1 Activity Theory

Daniels (2004, p. 121) calls activity theory a 'near relative' of sociocultural theories as they have similarities and both draw on the theories of Vygotsky, acknowledging that 'social, cultural and historical factors shape human functioning'. He differentiates between them saying that sociocultural theories emphasise language and ways of communicating meaning ('semiotic mediation'), but that activity theory is centred on activity itself. Engeström (1987, P. 5) describes Vygotsky as having pioneered the concept of 'mediation' and that: 'The insertion of cultural artefacts into human actions was revolutionary in that the basic unit of analysis now overcame the split between the Cartesian individual and the untouchable societal structure'. The discussion moves from what

happens inside the learner to focus on interactions with cultural or historical tools which support the learner to make sense of what they encounter.

This theory may also be called 'cultural-historical activity theory' (CHAT) (Cong-Lem, 2022, p. 1092) and advocates of this theory often see themselves as part of one of multiple generations of the theory. Vygotsky's approach is often viewed as a first generation although may not always be referred to as such. Second and third generations refer to later evolutions of Vygotsky's theories, through Leontiev or Engeström (respectively), for example. Engeström characterised Leontiev (Engeström, 1987, p.5) as having focused less on the individual (like Vygotsky) and more on the activity. Activity in this context can be defined as 'a purposeful interaction of the subject with the world, a process in which mutual transformations between the poles of 'subject–object', via the use of tools, are accomplished' (Larkin, 2019, p. 411).

Engeström develops this further into his theory of 'expansive learning' (1987, p. 6) which takes 'the object-oriented and artifact-mediated collective activity system' as the unit of analysis, moving from an activity to an activity system. He explains that the internal inconsistencies or contradictions generated within individuals as they interact in activity systems are a source of learning and that engagement with systems allows development that enables individuals to move from the abstract to the concrete in their thinking. Engeström also sees the actors in activity systems as each being an activity system in themselves, but which are also interconnected with each other (Engeström, 2001).

Doctoral education, writ small (an individual), medium (a local cohort) or large (a cross-institutional operation), could be seen as activity systems. Students could be viewed as being in systems of, for example, institutional, personal, disciplinary, and administrative elements depending on how one defined the systems under analysis. However, while compelling in some ways to map out the actors and relationships, this approach can arguably lack enough of a sense of the individual

to convey the complexity and the personal journey involved in doctoral education. Indeed, Beauchamp *et al*. (2009) recommend this as an approach to analysing the dynamic complexities and social interactions of doctoral education. While the individual is an integral part of any system described in this way, they can be seen as just a part of the picture rather than the protagonist in their own story. Larkin (2019) described his own doctoral journey through an activity system perspective but then asked the question, 'Is a systemic perspective enough to tell the story?' (p. 419). He suggests not and that the individual in this approach is 'depicted as merely a representation of the society in which she or he lives' (p. 420) and that 'an account that incorporates the agentic action of a range of individuals is required'.

2.2.2 Cognitive Apprenticeships

Cognitive apprenticeships as an idea are linked to theories of situated cognition, enculturation, and socialisation and take a view that learning is situated and embedded in authentic activity or 'the ordinary practices of the culture' (Brown, Collins, Duguid, 1989, p. 33) and that that 'activity, concept and culture are interdependent'. Brown *et al*. see learning and knowledge as situated (p. 37) and assert that this means that learning in authentic situations is essential. The ideas of a cognitive apprenticeship, drawing on similarities to craft apprenticeships, bring students, through enculturation 'into authentic practices through activity and social interaction' (p. 37). Hoy *et al*. (2013, p. 409-410) describe the common features of a cognitive apprenticeship as learning from an expert whose behaviour or actions can be modelled; being supported through mechanisms such as coaching or tutoring; using scaffolding to support students and that learners are active in reflecting on and articulating their learning as well as exploring applications of their learning. Collins and Greeno (2010) underscore the roles of coaching, modelling, scaffolding, and learning by observation in cognitive apprenticeships. These could also be described as "a model of instruction that works to make thinking visible" (Collins, Brown, and Holum, 1991, p. 1). This approach suggests that

knowledge is related to its context and that learning becomes more meaningful through interacting with these authentic contexts.

Austin (2009) looks specifically at how cognitive apprenticeship might support doctoral education and sets out several practices that she found useful in supporting first-year doctoral students, for example making goals and ideas explicit, being supportive, and building community. However, what is detailed is a fairly structured approach - not so much as a taught course but scaffolded and supported to guide students through a process in a way that is fairly uncommon in doctoral education. This might be seen in some cohort approaches which are designed to support a defined group through a specific programme. As an approach, it is more resource-intensive to develop the support and materials required to support individuals in this way.

The idea that doctoral supervisors are enculturating their students into their disciplinary practices and that postgraduate researchers as cognitive apprentices is attractive as the image seems fitting alongside the idea of doctoral study in a master-apprentice model. However, the structure and support suggested by such a model is possibly more than most supervisors or even programme leaders can provide to postgraduate researchers, especially at the individual-to-individual level and with increasing numbers of students. Further, the discussion of enculturation seems one-way - that PGRs are brought into something without changing it or making it their own or that supervisors do not experience learning from accompanying their students on their learning journeys.

2.2.3 Communities of Practice

Discussion of socially oriented theories of learning inevitably leads to Lave and Wenger's ideas about communities of practice (1991) and their seminal work on situated learning. Lave and Wenger (1991, p. 47) contrast their ideas with more conventional theories of learning that have a 'focus on internalisation', a 'sharp dichotomy between inside and outside, that suggest knowledge is largely cerebral and that take the individual as a non-problematic unit of analysis' and treat learning as a

process of absorption, transmission, and assimilation. They see learners as unique and active in their contexts - but see the context as an integral part of the learning journey. They also introduce the ideas of communities of practice and legitimate peripheral participation. Legitimate peripheral participation refers to engaging in/learning a community's practice over time and moving from a figurative periphery to a figurative centre of a community as one does when moving from novice to expert.

The idea of a community of practice has over time evolved as well as developed a life of its own in follow-up work to the earlier (Lave and Wenger, 1991) book as an idea as well as a management/business tool to bring people together productively, and often in a structured way, over shared practices, and experiences. Storberg-Walker (2008, p. 565) highlights that to operationalise his theories that Wenger spent insufficient time on a deeper elaboration of its theoretical use and that this flexibility in the ideas had led numerous researchers to apply the work in various ways. The variety of interpretations and uses of these theories could be seen as either the power of the idea or that as an idea it lacks substance in its ability to be adapted in so many ways. Etienne Wenger has written extensively on these ideas as a follow-up to this original work (e.g., see Wenger 1998, Wenger 2010, or Wenger-Trayner *et al*. 2015) to develop these ideas himself. Wenger (2010) notes that the concept of communities of practice has shifted to a more practical focus and observes that this creates challenges for those who use the ideas without fully understanding them. He nonetheless sees that continued use and evaluation of the ideas around communities of practice to be largely productive and improving ways to develop 'learning capability' in 'social systems' (p. 189-190).

Lave and Wenger (1991, p. 98) offer the following definition of a community of practice:

> *A community of practice is a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice. A community of practice is an intrinsic condition for the existence of knowledge, not least because it provides the interpretive support necessary for*

> *making sense of its heritage. Thus, participation in the cultural practice in which any knowledge exists is an epistemological principle of learning. The social structure of this practice, its power relations, and its conditions for legitimacy define possibilities for learning (i.e. for legitimate peripheral participation).*

Wenger stresses however in later work (1998, p. 5-6) that the concept of communities of practice is a shorthand or way to describe his broader theory of learning as social participation, which includes the aspects of meaning, practice, community, and identity (also experience, doing, belonging, and becoming) which will be discussed in more detail in the next chapter. In a later exposition of his ideas, he says (Wenger, 2010, p. 179):

> *'The concept of community of practice does not exist by itself. It is part of a broader conceptual framework for thinking about learning in its social dimensions. It is a perspective that locates learning… in the relationship between the person and the world, which for human beings is a social person in a social world. In this relation of participation, the social and the individual constitute each other.'*

Wenger also notes that other dimensions of learning could also be considered beyond the social, such as 'biological, psychological, cognitive, as well as historical and political in the broad societal sense' (Wenger, 2010, p. 179).

2.2.3.1 Participation

Lave and Wenger's (1991) theory has participation at its core. Legitimate peripheral participation (p. 29) refers to newcomers joining communities at the fringes and gradually moving towards the figurative centre as they become more knowledgeable and embedded in the practices of the community. This is their way of expressing the development of the individual as well as the ongoing development of the community of practice. The final page of their 1991 book stresses that the idea of legitimate peripheral participation is a way of describing the lived experience of learners and acts as a 'conceptual bridge' (p. 123) to articulate their theoretical concepts about learning in the social world. Lea (2009) stresses that any journey to the centre or to full participation in the context of a community of practice is not necessarily simple, smooth, or even desirable to individuals. Lave

and Wenger also add that 'agent, activity and the world mutually constitute each other' (p. 33), not unlike Brown *et al*. (1989) above, and seek to articulate a bigger picture of individuals in contexts and in relation to others, looking to 'trajectories of participation…in a social world' (p. 121) to explain their position.

These ideas could be criticised as taking learning too far from the individual, i.e., when making the community the 'unit of analysis' rather than the individual and placing learning into the social space almost to the exclusion of the individual, who is seen only in the context of the social practice or the community of practice. However, what Lave and Wenger assert (1991, p. 41) is that 'learning is not merely situated in practice - as if it were some independently reifiable process that just happened to be located somewhere; learning is an integral part of generative social practice in the lived-in world'. Learning in this view is neither product nor process, but rather something more dynamic and holistic. Wenger (2010, p. 180) later says:

> *'The focus on the social aspect of learning is not a displacement of the person. On the contrary, it is an emphasis on the person as a social participant, as a meaning-making entity for whom the social world is a resource for constituting an identity. This meaning-making person is not just a cognitive entity. It is a whole person, with a body, a heart, a brain, relationships, aspirations, all the aspects of human experience, all involved in the negotiation of meaning. The experience of the person in all these aspects is actively constituted, shaped, and interpreted through learning.'*

They also highlight, providing their own critique of the work, that the ideas put forward in this short work require additional elaboration and that (Lave and Wenger, 1991, p. 42) 'the concept of community of practice is left largely as an intuitive notion, which serves a purpose here, but which requires a more rigorous treatment'. They further highlight (p. 42), that 'in particular, unequal relations of power must be included more systematically in our analysis'.

Wenger (1998) also takes these ideas further, setting out a more detailed description of communities of practice and expanding on how the negotiation of meaning and identity are linked

therein. He suggests that 'practice is the source of coherence of a community through mutual engagement, joint enterprise, and shared repertoire' (pp. 72-73). These concepts help to define what can be seen as a community of practice beyond groups of people with some commonalities who interact with one another.

Wenger (1998) also further sets out (pp. 4-5) what his 'theory of learning' is - i.e., being active participants in the practices of social communities and constructing identities in relation to these communities. This involves 'integrating meaning (learning as experience), practice (learning as doing), community (learning as belonging) and identity (learning as becoming)' (p. 5). He also expands this further to discuss the boundaries that communities of practice have and perhaps share with one another as well as the landscapes of practice in which they exist with other communities of practice. He co-edits and contributes a chapter to a later work on 'landscapes of practice' which states that (Hutchinson *et al*., 2015, p. 2) 'the metaphor of a landscape ensures that we pay attention to boundaries, to our multi-membership in different communities, and to the challenges we face as our personal trajectories take us through multiple communities.' This concept of a landscape of practice is a potentially powerful idea for discussing the complex journey of doctoral researchers and for understanding their lived experiences.

A key criticism of the communities of practice ideas and resultant work by Lave and Wenger (1991) and Wenger (1998) is that it does not fully engage with ideas of power relations among participants (which they themselves acknowledge as highlighted above), that individuals will not equally participate in any given community or communities (Barton and Tusting, 2005) and that any participation is not equal across time. Wenger touches only lightly on power relations within communities, holding to the focus on the community of practice, but also framing this as identity development for individuals who can make choices in their participation or non-participation, i.e. 'the mix of participation and non-participation through which we define our identities reflects our power as individuals and communities to define and affect our relations to the rest of the world'

(Wenger, 1998, p. 167). This still makes participation an individual choice and does not reflect the potential for communities to be exclusionary in various ways.

A challenge with a clear application of a community of practice perspective is perhaps its flexibility and broad applicability. As a concept or construct, the Ideas around communities of practice have evolved in different directions from their original (Lave and Wenger, 1991; Wenger 1998) conceptions. Wenger himself, for example, has taken these ideas into corporate settings and used these ideas as tools (Wenger and Snyder, 2000). Communities of practice as formalised, bounded communities of learning exist today in many organisations. However, in the context of doctoral education, and even more precisely the SGSs, the idea of learning through participation in various communities is an attractive one. The SGSs addition to the learning landscape for PGRs potentially widens the scope for diverse and dynamic learning communities for students who receive their funding,

2.2.4 Relational Interdependence

The idea of landscape of practice is however, as noted above, a potentially powerful one, reflecting the complexity of the social world that individuals inhabit and a useful metaphor for the doctoral learning journey. It allows for a description of the complex relationships and activities of the doctoral student experience as well as a way to conceptualise the learning trajectory of doctoral students across and through this landscape as they progress through their programmes.

Billett (2007b, p. 56) agreed with Lave and Wenger's assertion that the individual is not lost in bringing greater focus to the social when describing learning. Indeed, the positioning of and the agency of the individual is an important theme in his work (e.g. Billett, 2002a, 2002b). His body of work largely focuses on workplace learning but there are strong links between the doctoral experience and learning in the workplace (González-Ocampo *et al.,* 2015). The programme is largely unique to the individual and comparatively unstructured. The process is one of becoming a

researcher, working with a supervisor, and undertaking research is closer to a day-to-day experience in a job role than as a student on a structured undergraduate or master's level programme of study. Billett (2007b) asserts that 'there is an important role for the person within social practice: their engagement and their learning' and that the relationship between person and social practice is 'agentic on both sides', i.e., they act on each other. The norms and practices of the social world affect the individual, but the individual is not without choices in terms of what they engage with, which Billett (p. 61) describes as their 'subjectivity, intentionality, and interest'. This sense of agency and choice perhaps describes what Wenger was alluding to in refuting some of the criticisms that this approach to social learning lacks an adequate focus on the idea of power and power relations.

This social approach to learning does not however require a de-emphasis on the individual (Berger and Luckman,1967; Giddens,1984; cited in Billett, 2007b, p. 61). Not positioning 'human capacities, consciousness and subjectivity as a central concern' would be to deny this (Billett, 2007b, p. 61). This harks back to Lave and Wenger's (1991) explanation of a person and context acting on each other. Billett in other work describes the relationship between a person and the social world as 'relationally interdependent' (Billett, 2006, 2008) where everyone brings their own experiences, histories, goals, preferences, etc. to social interactions and through their participation in social interactions and situations influences the situation. These ideas also echo Lave and Wenger (1991, p. 50) who state that 'a theory of social practice emphasises the relational interdependence of agent and world, activity, meaning, cognition, learning, and knowing '. Billet says (2008, p. 18): 'learning throughout working life needs to be seen as a relational concept, with the relationship being mediated by the personal agency and intentionality of the individual.' Indeed, one of Billett's key arguments is that of 'interdependence' (2006) - interdependence between individual and social world, conceiving of the individual in the fullest sense, I.e., with their personal histories, preferences, and idiosyncrasies intact, and in a dynamic and productive relationship with said social world (Billett, 2022). This serves to underscore the dynamism of learning as a process or a trajectory.

Indeed, Billett's insights about interdependence and relationality bring a dynamic, practical focus to Wenger's work which tends to be more conceptual. Billett himself drew on both Lave and Wenger (separately and together) as well as many others in his elaboration of these theories but his articulation of the role of the individual in the social and of relational interdependence in several of his works (e.g. Billett, 2007b and Billett, 2022) is a key feature of his ideas. Wenger (1998) and Lave and Wenger (1991) speak of 'communities of practice' and Billett speaks of workplaces and learning at work and ideas such as 'co-participation' at work (Billett, 2002a, p. 457), i.e. the reciprocal process of how workplaces afford participation and how individuals elect to engage with the work practice, and the 'affordances' of the workplace (Billett, 2001), i.e. the support, interactions, and opportunities available to individuals and of which they may, or may not, avail themselves. He also suggests that defining learning environments as formal or informal is unhelpful 'and ignores the role of human agency in the construal of what is experienced and what learning arises from that experience' (Billett, 2004 p. 314).

In this context, knowledge is relational, and meaning is negotiated (Billett, 2008). Knowledge in a discipline does not exist as an entity, something that can be dug up, and accessed in its entirety like swallowing a pill or with a fixed existence. Following from the preceding discussions, knowledge is built up by human interaction, thought, reflection, analysis and sharing. Similarly, what one learns forms one's identity and ongoing learning changes one's identity over time. The interconnectedness is key to this approach - the interdependence of agent and world, activity, meaning, cognition, learning and knowing (Billett, 2006, p. 54). As meaning is negotiated, researchers participate in their communities to learn, develop, and share their work and their ideas. What this means to them as individuals and within their communities is negotiated through participation. Learning is part of these social practices and can be understood in the context of these practices and the relations between practices and agents.

As noted above, it is not difficult to see how Billett's theorising about learning through work might apply to PGRs. They are individuals designing and working on individual projects but both research and researcher exist in this interdependent web of history, discipline, experience, culture, community, and practice. PGRs join, or become part of, various communities within and without institutions, related to their personal interests, disciplines, funding streams or institutional structures, as these communities support their development as researchers, they are learning to become (building the identity of) a researcher. Many of these communities are workplaces where research is conducted and PGRs work alongside staff formally and informally. While doctoral researchers are on an individual journey to become independent researchers, they are still part of a tradition of research (social practices) in their chosen discipline, using methods developed over time and drawing on knowledge, concepts and practices developed over time by others who are or have been part of these communities. While those who came before them may not have been in the same university or in the same time period, the knowledge that they contributed forms part of communal knowledge / communal practices.

2.3 A socially oriented learning landscape

As previously noted, the size and scale of the SGSs make it challenging to conceive of them as cohorts due to their size, cross-institutional structures, and multi-disciplinary ranges. Students in SGSs or similar funding streams/training structures are not tightly linked to other students but rather, while following broadly similar journeys through doctoral programmes in broadly related fields of study, associate with each other through training or events, many of which are optional. This conception of loosely connected students, each with their own set of connections and communities, suggests a bigger picture of interactivity and related-ness that varies from person to person.

However, is a 'landscape' the best metaphor to employ? The learning journey is a commonly employed metaphor for doctoral education, and it is used throughout this dissertation as it suggests both challenge and change. However, both Hughes and Tight (2013) and Wenger-Trayner and

Wenger-Trayner (2015a) caution against conceptions of the individual nature of a journey - the former as seeing an individual on a quest who succeeds through their personal resilience or other qualities and the latter as it fails to acknowledge the full range of interactions and relationships in the landscape of a journey.

This learning journey can, however, also be understood through other metaphors, such as that of a 'quest' (Billett, 2005; McCulloch,2013; Hughes and Tight, 2013; Skakni, 2018). Billett sees this personal quest as one of exercising one's agency to develop a sense of self, writing more broadly about learning throughout one's working life. He highlights 'social agency' in 'the complex of social factors comprising the situated experiences of the workplace', 'individual agency, in the form of intentions, gaze and engagement' (2005, pp. 1-2), and 'epistemological agency' (p. 4) which shapes how individuals understand and choose to interact or engage with opportunities for learning and their social and working environments, and, arguably, the landscape of practice in which they are situated. This links back to Packer and Goicoechea's (2000, p. 233-4) view that individuals both create the social context and are changed by it prompting a journey of discovery of oneself.

McCulloch suggests that we see the doctoral experience as a quest, suggesting that the often-used metaphor of a journey (2013, p. 59-61) is insufficient, for different reasoning than Hughes and Tight, noted above. This view of a quest incorporates this metaphorical journey but expands it into a more heroic and personal experience of discovery, meeting and overcoming challenges, and in pursuit of a goal. Skakni (2018) draws on McCulloch's metaphor and applies this to a discussion of the motivations for doctoral study and the ability to persist with doctoral study in the face of challenges. She looks at how these motivations might interact with the structural and practical factors of the doctoral experience to understand different quests - a quest for the self, an intellectual quest, and a professional quest. Her conclusions suggest that the doctoral experience should pay attention to all three of these different motivations, support reflection on these, and acknowledge that individuals will identify with each of these in different measures.

This metaphor of a quest, however useful, still focuses on the individual, their experiences and, arguably, an endpoint - a quest suggests a goal or goals and the potential for the achievement of that goal. The quest metaphor focuses on the personal story rather than metaphors for the webs, networks, communities, landscapes or ecosystems (to utilise several other metaphors) in which a quest takes place. The metaphor of a landscape, as Becher and Trowler (2001) suggest, includes individual perceptions of a territory and its dynamism and incorporates implicitly the interaction between individual and environment.

Other metaphors might be invoked as well, such as what is in light or in dark (Bengtsen and Barnett, 2017, p. 115) where darkness is that 'which cannot easily be understood and solved by agendas of quality assurance and professionalisation of higher education' but not simply as a simple dichotomy between light and dark, good and bad. This conception of darkness suggests a need for enhanced understanding, an element of boundary crossing between the two, the opportunity for exploration, and even an acceptance of the darkness for what it is. This was also termed a 'penumbra' of unrecognised activity (Wisker *et al.,* 2017) and invokes a further metaphor of a theatrical production, suggesting the richness and complexity of the doctoral endeavour, the wide scope of existing and potential support for the performance (programme), and both the negative and positive influences on the endeavour. Elliot *et al.* (2016) also invoke the idea of darkness alongside the hidden curriculum to understand what is between formal and informal curricula and that which students need to seek out for themselves.

Finally, it is possible to discuss that which is hidden, as in a 'hidden curriculum' (Elliot, D. *et al*., 2020) of unofficial sources of learning into which doctoral researchers might tap, alternatively described by Elliot *et al*. (2016) as 'hidden treasure' which doctoral researchers may find. This hidden treasure is understood in part by what is found in moving through or across the various contexts or systems in which doctoral students engage.

However, none of this suggests that this is a simple journey and there are other aspects of learning in the literature that also suggest that this is not a simple path - such as that of transformations, breakthroughs, and threshold concepts which cause 'perspective shifts that result in transformed ways of seeing oneself and/or one's research' (Keefer, 2015, p. 18). Wisker *et al*. (2010) discuss this variably as 'learning leaps' (p. 4), passing through a 'portal', (p. 5) or 'a state of liminality, whereby students 'strip away' the old and pass into the new' (p. 5) or 'moving from 'stuck' places through liminal spaces into new, more conceptual understandings' (p. 17). These are challenges, breakthroughs, and transformation along the journey which Kiley (2009) describes as 'critical for a learner's further understanding of the discipline' (p 293). Wisker *et al.* (2010, p. 6) also provide evidence that this is not a simple passage through an open doorway but rather one that requires both epistemological (knowing) and ontological (identity) shifts on a multi-dimensional and transformational learning journey. Kiley (2009) discussed ways in which doctoral students can be assisted with crossing these thresholds and it is through the support of others and engagement in the learning landscape that learners on this journey are enabled. This view continues to employ metaphors of movement and journeying, taking leaps, moving through conceptual spaces and into new understandings.

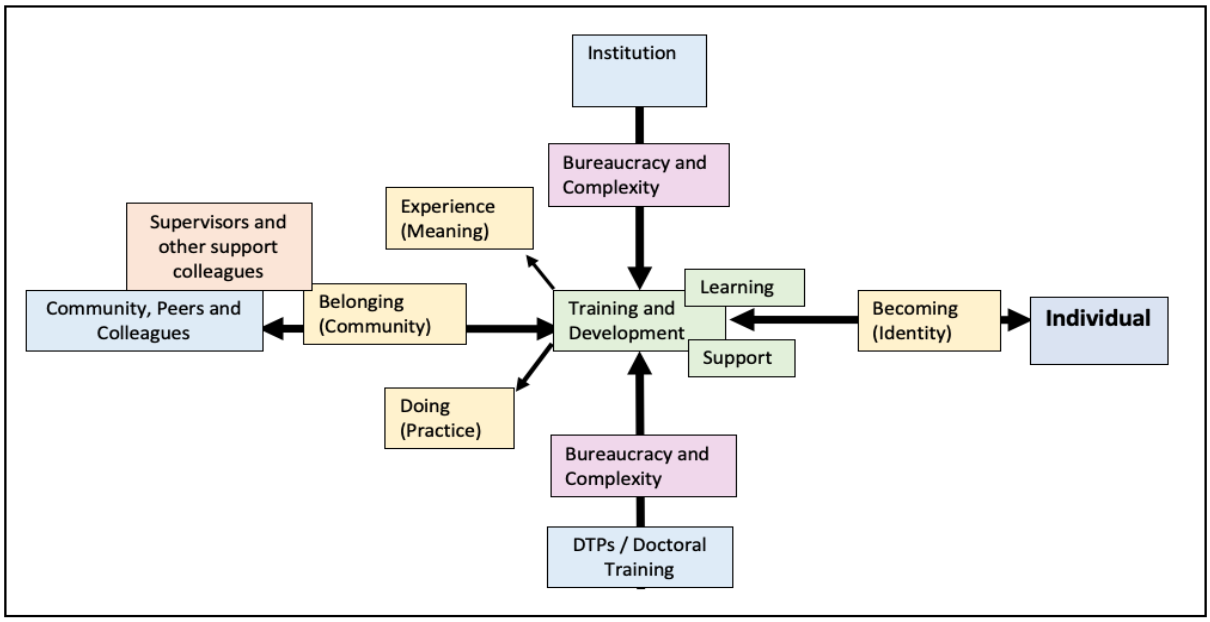
These metaphors serve to help to illuminate the variety of ways to understand the diversity and complexity of doctoral learning and the value of understanding the individual student experiences and perceptions to continue to develop and enhance that journey for those who support doctoral education. While these suggest different approaches to understanding doctoral education - movement towards a goal or through challenges and the range of activities and connections that support this - they help to see the experience of doctoral research as more than an educational experience or as professional development but one in which individuals change and grow.

Reflecting on the learning theories and approaches discussed in this chapter, it is suggested to focus on the ideas of communities of practice and learning in a larger context or a landscape of

learning or practice. Figure 1, below, suggests a way to view this landscape of doctoral education with learning at the centre between individuals and their community or context but acted upon by structural factors. This figure suggests an individual view, with structural and bureaucratic forces acting on the experience of the individual but without representing the myriad factors, e.g. external economic, social or political forces, which act on institutional or extra-institutional structures.

This simple landscape of doctoral education is not intended to be comprehensive as each doctoral journey is individual. The training and development, understood broadly here, is at the core of the learning and support available to a student but it is not the whole picture. The learning journey is informed and influenced by institutional/structural factors as well as other people (communities, peers, colleagues, supervisors, supporters) that support, interact with, work with, and learn with a doctoral student. The components of Wenger's theory of learning as social participation are added into the landscape showing 'meaning (learning as experience), practice (learning as doing), community (learning as belonging) and identity (learning as becoming)' (Wenger, 1998, p. 5).

Figure 1: A simple doctoral learning landscape



The figure is presented in a two-dimensional and linear fashion as it must be here, but this cannot fully reflect the dynamism, interconnections and journey of becoming inherent in doctoral learning. It also only hints at the tensions between the individual learning journey and the institutional requirements and inputs to the doctoral experience. Disciplinary communities, administrative and regulatory communities, formal learning communities, communities of peers and colleagues, communities related to training or development activities, and so on are all reflected here, and it is this landscape within which postgraduate researchers interact.

The next chapter will use this learning landscape to explore several concepts related to doctoral learning in the literature.

3 Literature Review – A Landscape of Practice for Doctoral Education

As discussed in the previous chapter this dissertation takes the perspective that learning is social and situated but still individual, that individual agency, social participation/practice are intertwined and build on each other, and that both individuals and social practices and situations are changed through their interactions with one another. The doctoral learning journey in the smallest structural terms - a student pursuing an independent project supported by a primary supervisor - is highly individual. However, this chapter tells a story of doctoral researchers who are embedded and active in social situations and practices that support and sustain them, and which are a key part of their learning processes. To do this, it will continue to elaborate on Wenger's (1998, pp. 4-5) theory of learning as discussed in the previous section with the components of meaning, practice, community and identity (or experience, doing, belonging and becoming) and discuss these in the context of doctoral education and concepts in the existing literature. Understanding these concepts in this way, and as viewed in Figure 1, might help to illuminate the learning journeys of postgraduate researchers, as participants in a variety of communities and as 'persons-in-the-world' in their disciplines, schools or institutional subject areas or other various research contexts or cultures and that their embedded-ness in these various academic and social contexts is a fundamental part of their learning journey.

The following sections will highlight concepts important in the literature on the doctoral learning journey and discuss them in alignment with these four components - experience, doing, belonging, and becoming. Fundamental to Wenger's view of learning is social participation (1998, p. 5-6) or interaction in a context. As Billet (2006, p. 55) highlights, however, everyone's interpretation of interactions is unique to them as well as coloured by their personalities and life experiences while highlighting the role of personal agency and the interdependence of the individual and social as they act on / interact each other (p. 58). It is suggested that participation and reciprocity are key to how students learn on their doctoral journeys and a core component for meaning-making. The concepts

articulated in the following sections of this chapter, such as practice, identity, and socialisation, further expand on these ideas about the role of others in the learning journey as well as the role of personal, and individual factors such as agency and identity.

As will be seen throughout this chapter, these key concepts are also interdependent – the headings and organisation provide structure for the discussion, but the key concepts overlap around the ideas of experience, doing, belonging and becoming.

3.1 Experience: Meaning

3.1.1 Curricula, explicit and hidden

Lave and Wenger (1991, p. 92) in their analysis of the case studies they present observe that communities of practice are about learning rather than teaching and highlight that 'a learning curriculum unfolds in opportunities for engagement in practice'. (p. 93). It is argued that this broadly understood 'curriculum' of practice as experienced by students interacting in their own landscapes of practice is the foundation of the doctoral learning experience. Curriculum in doctoral education can be viewed in different ways but generally implies something at least intentional, if not always structured or formalised. Gilbert (2004, p. 301) defines it as what 'graduates learn in their courses of study, as distinct from the pedagogy of how they learn or issues of program delivery'; 'the content, concepts, meanings, purposes and intended outcomes of research training' (p. 301); and a 'systematic articulation of experience in order to produce the intended outcomes of doctoral research training' (p. 303).

Considering that doctoral education is highly individualised, there is arguably not any one identifiable curriculum even at a disciplinary or subject level, but each research student pursues an individual curriculum in support of their research project and participates in a developmental curriculum related to broadening research skills and with a view towards employability. There is therefore arguably some similarity in what doctoral graduates might be encouraged to learn to

prepare themselves for their careers. This is encapsulated for many in the Researcher Development Framework (Vitae, 2010a) which identifies and categorises skills that researchers might need in their careers, in 4 domains - two of which are research-related and two of which are more broadly based.

While this view of the content and purposes of a curriculum in this context is useful, it is not likely the full story. Elliot *et al.* (2016) discuss a further conceptual breakdown of curriculum, using Schugurensky's (2000) articulation of formal, non-formal and informal curricula. The first two take place respectively within and without formal or structured learning in an institution. Informal curricula sit between these, 'generally characterised by 'self-directed' (or proactive pursuit), 'incidental' (or unintentional endeavour), and 'tacit' learning leading to internalisation of values, attitudes, behaviours, and skills resulting from socialisation with other people' (p. 738). However, there is an informal or 'hidden curriculum' which is described as 'unofficial (and informal) channels of genuine and useful learning that can be acquired within or without both the physical and metaphorical walls of academia' (Elliot *et al*., 2016, p. 4).

Elliot *et al.* (2016) also link these curricula to doctoral study with these concepts equated to syllabi and course content (formal), support services and activities that engage with students and may support learning (non-formal) and all the other ways that institutions and individuals interact with students (informal) (p. 739). In this context, the informal or hidden can be implicit or unintentional but what is experienced by the student trying to navigate their journey. Indeed, it can be emergent as disciplinary cultures, rules, regulations, policies, partnerships, funding, etc. coalesce into an organisational or programmatic culture. Further, this hidden-ness is highly personal as everyone will experience this aspect of the curriculum in their own way (p. 742). Looking at this positively, (p. 746) Elliot *et al.* see this informal learning as a source of opportunity and indeed 'hidden treasure'. Devenish *et al*. (2009, p. 68) refer similarly to 'hidden learning' that happens amongst doctoral peers in a study group and assert that it is not often institutionally valued (i.e., a

measurable indicator of success). They did report, however, that peer support and the kind of learning achieved in this way were found to be highly valued by students. Fostering this hidden learning could combat frequently cited challenges of doctoral education, such as isolation and the low institutional profile of doctoral students (McAlpine and Norton, 2006) in the face of larger populations of undergraduate and master's students.

This idea of the hidden curriculum is highly relevant to this discussion of the doctoral student experience. Each student on their personal journey could conceivably experience their supervisors, their programmes of study, their schools, their university, and/or their funders or external partners quite differently. Elliot (2021, p. 1655) describes this as 'a combination of intellectual, personal, learning adjustment, and contextual-related challenges' which 'shapes, and enriches the tapestry of experience fashioning the composition of each doctoral journey–making each doctoral venture inherently distinct'. Many students will interact with different combinations of these entities and engage with colleagues internal and external to the university in a variety of different ways in direct or indirect support of their learning and development.

The added layers of doctoral training entities operate at all levels of the curriculum as described above - formally, through structured training, non-formally through social and quasi-social events, and informally in a range of interactions with policies, processes, colleagues, peers, and staff. The same could be said of students' relationships with their institutional Graduate Schools. A question to consider then is how we ensure that what is hidden is not overly challenging to access but rather that illuminating this 'hidden treasure' (Elliot *et al*., (2016), is part of a productive and ultimately transformational learning journey (Elliot, 2022; Packer and Goicoechea, 2000).

Other metaphors invoking this hidden-ness are related to this as well, such as what is in light or in darkness (Bengtsen and Barnett, 2017, p. 115) where darkness is that 'which cannot easily be understood and solved by agendas of quality assurance and professionalisation of higher education'

but not simply as a dichotomy between light and dark, good and bad. This conception of darkness suggests a need for enhanced understanding, an element of boundary crossing between the two, the opportunity for exploration, and even an acceptance of the darkness for what it is. This was also termed a 'penumbra' of unrecognised activity (Wisker *et al.,* 2017) and it invokes a further metaphor of a theatrical production, suggesting the richness and complexity of the doctoral endeavour, the wide scope of potential support for the performance (programme), and the possible negative and positive influences on the endeavour. These metaphors all suggest a landscape of meaning and/or practice that surrounds the individual journey as well as a sense of undiscovered territory and hidden treasure.

3.1.2 Peer learning

Doctoral students also learn through their peers and their interactions in academic and/or social settings. Peer learning in this context is defined by Boud *et al*. (2001) (cited in Boud and Lee, 2005, p. 503) as a 'two-way reciprocal learning activity' and 'refers to networks of learning relationships, among students and significant others'. It has emerged over the past two decades as an important aspect of doctoral education. This was not always the case as Gardner (2007, p. 736) states in the analysis of her study on graduate student socialisation and her surprise at how often graduate students mentioned peer support. Indeed Meschitti (2019) credits the socialisation literature as being the first to raise the value of peer support to the doctoral learning journey (p. 1210). However, this is no longer the case and there is extensive literature looking at the various ways that doctoral students work together in formal, informal, and non-formal ways as part of their doctoral journeys (e.g., Wegener *et al*., 2016, discussing peer writing groups; Flores-Scott and Nerad, 2012, discussing peers as learning partners).

Boud and Lee (2005) however have offered the idea of peer learning, and the diversity of learning activities in doctoral education, as an antidote to the way that they saw doctoral education changing, such as being driven by government policy and measured against targets for outputs and

timely completions. This is echoed by Devenish *et al*. (2009) who highlight that 'while relational behaviours underpin tangible results, they become invisible when organisational leaders use the mental models and language of measurement and control' (p. 68). Boud and Lee (2005) further argue that doctoral education can seem a bit lost between the concepts of research, education, and training, as none of these seem to fit exactly around doctoral education which has elements of all three. They argue that there is a 'need to conceptualize and investigate an expanded notion of pedagogy that attends to the whole research environment' (p. 503) which includes 'multiple and overlapping notions of communities of practice' rather than focusing on institutional or extra-institutional policy drivers and limiting the focus to the student-supervisor relationship.

A key insight that Boud and Lee (2005) offer, however, is that 'peers' are not defined in the same way by everyone, seen as entirely benign or welcoming or exempt from considerations of power of authority. The way that students in their research engaged with peers was related to their self-concept and thus their motivations for engaging with peers. Peer relationships may for example also emerge with students and academic staff or collaborators as students themselves become academic peers. This discussion also aligns with ideas of 'fit' such as those raised by Pifer and Baker (2014) where individuals may feel separated from or that they do not fit in with their peers. This underscores the roles of agency and identity in the doctoral journey but also the doubts and lack of confidence that doctoral researchers can experience.

Peer learning also does not always just emerge amongst peers in this context. Learning may not emerge at all from peer social relationships or, as Meschitti (2019) argues, the institutional context and leadership might be needed to enable and foster peer learning activities and opportunities. Indeed, in the case of her study, she found that structured opportunities for peer learning were useful to students. Boud and Lee (2005) however, see peer learning being effective between peers who are 'self-organising agents' (p. 514) making a similar point. However, fostering

engagement and agency has the potential for positive benefits although for some, it may lead to self-doubt or otherness as noted by Pifer and Baker (2014) above.

Developmental networks, which act as broad networks of supporters to doctoral students in a variety of capacities, are proposed by Baker and Lattuca (2010) as a 'conceptual marriage of sociocultural perspectives and network theories' (p. 809) that highlight the roles of agency and identity development in doctoral education but also help to account for the complexity of the doctoral experience, the agency of doctoral researchers in their identity development and the ways they build their support networks and connections to do this. This broader network is not necessarily one of peers alone although arguably peers, and perhaps cohort members, are important co-travellers in any doctoral experience. This aligns with Pifer and Baker's (2014) later work where they discuss different 'categories' of identity - professional, personal, and relational - to unpick how these intersect and support the doctoral endeavour as well as highlight that it is not always an entirely positive or comfortable journey.

Returning to the ideas of experience and meaning, it is suggested that these developmental networks or networks of peers play a key role for doctoral learners in their engagement in, understanding of, and building of identity as they move through their doctoral programmes.

3.2 Doing: Practice

3.2.1 Practice

Another important aspect of this discussion of a socially oriented view of learning is the concept of 'practice'. Socially oriented views of learning discuss social practices and individual engagement with them as the core aspect of learning, wherever one might prefer to situate this learning (in the individual, in the social situation, or as a combination of these). Wenger (1998, p. 47) describes practice as doing, but 'doing in a historical and social context that gives structure and meaning to what we do', pointing out that this is not in opposition to the idea of theory, as in theory

vs practice, but rather encompassing it (p. 48). If learning exists in engagement with practice, then conceiving of and testing theoretical perspectives is part and parcel of this process.

Lee and Boud (2009) observe that the term practice is widely used and used in different ways but that fundamentally, practice is 'human activity…a primary building block of the social' (p. 12) and refer to seeing practice as being 'centrally organised around shared practical understanding' (Schatzki, 2001, cited in Boud and Lee, 2009, p.5). They specifically seek to understand doctoral education as practice and what that means for the individuals engaged with it. They assert that this focus on practice enables a consideration of the everyday (informal, not necessarily institutionally prescribed) elements of their individual experiences and a consideration of how individuals interact with or choose not to interact with what is available to them through their experiences (see also Elliot *et al*., 2016, and the discussion of the hidden curriculum above). Boud and Lee (2009) further describe several changes to doctoral education which have resulted in a 'pedagogisation' (p. 20) with increased emphasis on structure, training, regulation, and environment, and the distributed support mechanisms and people that enable this. This echoes Green (2005), to whom they refer, who supports viewing doctoral education in an 'eco-social' (p. 153) way as an environment around the student - noting that at the time of writing this was, as noted in the title of that article, 'unfinished business'. Arguably it still is. Viewing doctoral education in such an 'eco-social' manner considers that doctoral education and learning take place in an environment which is not just about the institutional structures that support it. This also begins, in terms of this review, to set the scene for understanding doctoral education, learning and experience in a more holistic way and as will be discussed later, across a landscape of practice.

3.2.2 Agency and Engagement

Agency, like identity, has broader conceptual as well as more personal/individual aspects. The ability of the individual to make choices about themselves and their lives is their 'agency'. There are, for example, debates about structure versus agency, such as whether the social structures of our

existence create, inform, or influence individuals or whether individuals (exhibiting their agentic ability to make choices) and their interactions with the social world create structure - or both (Giddens, 1984). Simply, Pierre Bourdieu's theories (Bourdieu, 1977) suggest that individuals (agents) interact in the 'fields' of the social world and thereby build dispositions, or patterns of interacting, through which they build their personal 'habitus' around their personal history, experiences, and interactions. Fields are built and evolve through interactions with agents, each with their own habitus. Giddens (1984) presented a theory of 'structuration' wherein structure and agency had equal footing, i.e. that both are responsible for what we would call society, with structure having a 'duality' as both the social norms and practices with which agents interact but also the outcome (structures) of these interactions. This could also be seen as a living process, i.e. that structures in this context can never be static as they evolve interdependently with active agents although this remains a source of sociological debate (Archer, 1999).

It is argued here that both structure and individual agency are important and act on each other. For example, this is seen in how doctoral scholars exist within institutional and extra-institutional structures which affect the way that students proceed through and experience their programmes and the opportunities available to them but nonetheless are active and free agents to engage in these opportunities and use their milieu to support their learning. Therefore, structure in this context refers broadly to social or institutional structures of many kinds, large or small. The structure/agency debate is a key debate within sociology but suffice it to say there are different schools of thought that hold that either individuals or structures or both take the lead and whether individuals can be analysed meaningfully, or only social structures, or whether it is possible to look at how they affect each other. However, it is relevant to a discussion of learning theories that suggest that there is a key role for individual agency in socially oriented learning.

Billett (2006, p. 63) takes a view that 'human agency operates relationally within and through social structures yet is not necessarily subjugated by them.' Indeed, Hopwood (2010b, p. 832)

highlights: 'People's engagement with the world is not a predetermined process of socialisation – individual agency intervenes, resulting in particular interpretations or internalisations of the world, or the remaking of cultural practices'. In that same article, he also (p. 830) takes a view of individuals as 'intentional and resourceful' in their learning, seeing learning as 'bottom-up' rather than institutionally prescribed. Billet (2002b, p. 29) similarly notes that 'Individuals' agency also mediates engagement with activities and what is learnt through participation.' This is relevant to the discussion here in terms of doctoral learning to understand the participation of individual students in different learning communities, within and without their institutions.

One way to view this participation is through the lens of student engagement. Vekkaila *et al*. (2013) see doctoral student engagement as relatedness, competence, autonomy and contribution (Deci and Ryan, 2002; Eccles 2008, cited in Vekkaila *et al.,* 2013), highlighting three different forms of engagement in their results: adaptive, agentic and work-life inspired (p. 19) and that these forms of engagement were most prevalent at different times across doctoral programmes. They also note that 'doctoral student engagement is regulated by a complex, dynamic interplay between the student and the environment rather than a single individual or environmental attribute' (p. 14). Groen (2021) expands on this in their study under four themes: engagement with supervision, developing independence, a supportive community and 'the transformative nature of thoroughly engaging in, and reflecting on, all components of the program experience' (Groen, 2021, p. 78). They extend this further, noting that these themes are inter-connected and highlighting that 'it seems that thoughtful and intentional supervision as well as opportunities for social interactions as part of a healthy and vibrant program community appear to go a long way in maintaining student engagement at the doctoral level and preventing or remediating emerging challenges and issues' (p. 81).

This interconnectedness is key to this discussion. Wenger (1998) writes about participation, suggesting that this is broader than engagement, reflecting this inter-connectedness and the way that individuals and communities affect one another through interactions and that this participation

is (Wenger, 2010, p. 180) an 'active negotiation of meaning' and (1998, p.7) about engaging and contributing to practice.

3.3 Belonging: Community

Wenger (1998, pp 72-73) explains that there are 3 aspects of practice that bring coherence to a community, taking it beyond a simple group of individuals: joint enterprise, shared repertoire, and mutual engagement. The educational experience of doctoral students is a joint enterprise. Not all students are working together in the sense of a cohort moving together through a programme, but rather they are participating in a learning journey towards becoming a researcher and developing the skills and competencies of a researcher in their chosen discipline. They are doing this in specific places, specific ways, etc. in relation to their institutional enrolment, programmes, and disciplines. The knowledge, methods and practices associated with these disciplines and with navigating the requirements of the PhD experience are shared repertoires. Arguably a doctoral training entity itself has a role in promoting a shared repertoire with its focus on providing methodological training and career development experiences to students in closely linked disciplines. Mutual engagement occurs as students engage with the institution or school through participation in activities, learning, or training. This engagement can also be local and shared at a graduate school, subject, or school level. A community of practice defined in this way lacks well-identified boundaries and purposes agreed upon explicitly by all participants but links PGRs together across multiple communities that exist conceptually as a set of relations among persons, activity, and world, over time (Lave and Wenger, 1991, p. 4)

Communities in this context are connected and interconnected across landscapes of practice - 'a complex, social landscape of shared practices, boundaries, peripheries, overlaps, connections, and encounters' (Wenger, 1998, p. 188). Being part of a community also means being part of how the community and its participants interact with the world and these interactions have a role in defining the community. One's own identity is negotiated through participation in communities of practice (p.

149) - individuals can be part of many communities of practice and have different relationships with all of them (multi-membership, p. 105).

3.3.1 Socialisation

Socialisation in this context is described as a process through which an individual becomes part of their community or communities and adapts to, absorbs, or adopts their norms and practices. The focus is on the way that individuals become part of the community, or perhaps the discipline, rather than how communities are built or sustained or how individuals bring change or evolution to communities.

Bragg (1976) discussed socialisation in higher education broadly in her report (p.1), describing this as a process through which 'the individual acquires the knowledge and skills, the values and attitudes, and the habits and modes of thought of the society to which he [sic] belongs.' In describing it thusly, she highlighted that socialisation is not just about learning knowledge, but about emotions and attitudes as well. Weidman, Twale and Stein (2001) echo these words in their discussion of socialisation specific to graduate schools, framing it in the light of preparation for a professional career, in this case referring to and suggesting a series of stages through which graduate students pass (Brim, 1966, cited in Weidman, Twale and Stein, 2001). However, they offer little sense that the culture or environment itself is benign or open to question.

This definition, while inclusive of personal or non-professional aspects to socialisation, suggests a pre-existing culture that a student must accept and treats graduate education as 'monolithic' (Gardner, 2008, p. 134) rather than differing across departments, disciplines, or institutions or open to question or change and with the culture acting on the individual rather than the individual acting on the culture or in a reciprocal relationship. Weidman and Stein (2003) later suggest that socialisation is in the control of institutional entities and cultures begging the question of whether this is something possible for all to access, or access on the same basis. Indeed, Weidman

et al. (2001, cited in Twale, *et al*., 2016), acknowledge that all students do not have the same access and may have different experiences in looking specifically at students of colour. Disciplinary or departmental culture is described as 'transmitted through organisational culture' (p. 127) as well as 'acting upon individuals' (p. 128) by Gardner (2008), as lacking an understanding of individuals' needs by Sweitzer (Baker) (2009) and as a 'top-down' approach by Nerad (2012, p.64). Gardner (2007), however, acknowledges the role that peers can play in a process of socialisation, adding that 'socialization is not, as is often suggested by the literature, simply a force being acted upon the student, but a process in which the student is, more often than not, a willing participant' (p. 737). This still suggests that this is something students opt into rather than something about which they have real agency (beyond choosing to opt in). She further goes on to highlight that, based on her study, doctoral students require clarity, direction, support (financial, peer, pastoral) and self-direction (p. 737-738) to succeed, suggesting that socialisation is but one aspect of the student experience.

Socialisation as a concept is also not used in entirely consistent ways. Many authors see it along the lines of 'enculturation' but others along the lines of fitting in or belonging (e.g., Littlefield, 2015). An approach to socialisation recommended by Nerad (2012) suggests a 'global village' (p. 58) approach. This moves past more traditional approaches to doctoral education such as apprenticeship-type one student/one supervisor models or similar mentoring models, professional socialisation approaches and understandings of learning as situated and participatory and brings these together in a multi-level approach she recommends as supporting a globalised context and diverse population of doctoral students. She suggests that students should be supported and developed in a context which connects students to supervisors, departments, peers, graduate schools, and the context outside of the university, and even globally with a focus on interdisciplinary or multidisciplinary research and support for building local and wider networks. Doctoral training structures such as the SGSs could be seen as taking this broader 'village' approach where students, supervisors (increasingly), and other academic and professional support colleagues are part of a

wider network supporting doctoral students to engage with other students, other institutions, and extra-institutional organisations.

3.3.1.1 Fitting In

Several other authors have highlighted this lack of attention to individuals' needs and identities, commenting specifically on women and minority students who do not fit a norm (Turner and Thomson, 1993) or the negative effects of a lack of socialisation, such as withdrawal, marginalisation, or failure to complete (Gardner, 2008). Gardner (2008) also highlights a gap in the research related to an understanding of how socialisation differs across departments, disciplines, institutions, and for different individuals. Part-time students are described as marginalised by Gardner and Gopaul (2012) while Zahl (2015) finds that socialisation is different for part-time students who are expected to fit in the same way as full-time students and often struggle to do so. Weidman and Stein (2003) only hinted at this complexity, suggesting that passing through the stages of socialisation is a fluid, interactive and evolving process but not elaborating on the variety of student experiences and contexts. Arguably, this fluidity suggests something not easily reducible to socialisation and something more complex.

Golde (1998), looking at first-year attrition rates in graduate schools, refers to graduate students experiencing a 'double socialisation' (p. 56) as students and into a profession as a researcher or scholar. She suggests that there are four things a student must think about: whether they have the intellectual capacity for doctoral work; whether faced with the realities of doctoral study, they really want to continue; whether they are suited for academic work and the profession; and whether their department is a good fit for them and where they feel that they belong. While a sense of belonging is undeniably important, there is still a sense that individuals need to fit in rather than a spirit of accommodation or welcoming of individuals' needs or characteristics.

Fitting in and feeling like an outsider is discussed by Gardner (2008) who produced work on how under-represented students failed to 'fit the mold' of graduate education and the role that institutions could play in supporting them, promoting peer support, and finding role models from diverse populations. It is hard to feel that it is possible to answer Golde's 4 questions above positively (am I intellectually able, can I be bothered, am I suited to this, do I fit in) when answers aside from intellectual ability mainly relate to personal choices or how one fits into their environment. Further work on 'otherness' in doctoral education was undertaken by Pifer and Baker (2014) to understand more about how the feelings of individuals who did not fit in affected their journeys and the barriers that this raised. They concluded that a lack of understanding of researchers' personal journeys that were intrinsically linked with professional and academic journeys was a problem for researchers trying to find their way as doctoral students. This is potentially an issue for large doctoral training structures that seemingly seek to create an institutional approach to their delivery and create efficiencies which while streamlining processes also depersonalise them. This links back to Billett's assertion that 'the process of that learning is shaped by experiences afforded by social settings such as workplaces and educational institutions, but ultimately mediated by individuals' (Billett, 2022, p. 157).

Hopwood (2010a) refers to 'socialisation theory' and how individuals socialised into doctoral education environments reproduce the norms that they adopt. This suggests that change in doctoral education could be challenging as norms and behaviours are reproduced over time through individuals. Collaboration between faculty and students is highlighted by Anderson (1996) as an approach to support this kind of socialisation. This links with discussions of cognitive apprenticeship and its techniques such as modelling, coaching, scaffolding (Austin, 2009) and interactions in which student and supervisor engage in 'authentic practices' (Bockarie, 2002, p.2) that assist with the enculturation of the student. Brown *et al*. (1989) specifically use the word 'enculturation', describing learning itself as a process of enculturation. Sverdik *et al*. (2018) also make this link, noting that

collaborative activities and cognitive apprentice approaches, such as modelling and scaffolding are helpful for effective socialisation. They also highlight that in departments where students have a high rate of timely thesis completion (a key performance indicator for most institutions), there was effective socialisation and communication as well as good financial support. Conversely, according to their study, departments with low timely completion rates demonstrated a lack of collaboration, low levels of social activities, and exhibited more conflict among staff and students.

3.3.2 Cohorts

In the introductory chapter, the UKRI approach to cohort training and doctoral training partnership-type structures was discussed. Cohort models are not uncommon in doctoral education and can be seen in a variety of different types of programmes. Cohorts may be generally defined as groups of students who work together, usually moving together as a peer group through courses or structural stages of a programme. However, this may be implemented differently across institutions and cohorts may vary widely in size.

Bista and Cox (2014) discussed the emergence of the cohort approach, in particular, on Doctor of Education programmes (EdD) in the United States in the 1980s and thereafter. The type of cohort they describe is a more closed model, a defined group of students, and is more likely to be at a programme level than shared across institutions or disciplines, unlike the current UKRI cohorts which tend to explicitly promote partnerships between institutions. Bista and Cox also highlight the strengths of the model they describe as collaboration between the students, peer relationships, social support, and professional contacts and networks that being part of a group provides. Some of these aspects might also apply to a larger, more open, cohort model with a greater number of students with whom to interact and potentially build relationships as well as a greater critical mass for training, development, and networking professionally. Where the cohort is a larger or more open group of students with students entering and leaving the cohort, the effects of peer support and collaboration become more challenging but offer more possibilities to interact.

A drawback of a cohort model, paradoxically, is the potential for isolation when cohort members do not fit well with the group, have personality conflicts, and compete rather than support each other (Bista and Cox, 2014). This may be mitigated in some ways in a larger, more open cohort model as students may find their own social support and not need to rely on a specific, defined group of peers.

Group dynamics can productively support learning but generally require some sort of facilitation and a structure that supports the development of an effective group, i.e., a cohesive group does not necessarily emerge without assistance (Basom *et al*., 1996). This is echoed by Beachboard *et al*. (2011) in their discussion of learning communities, under which they include cohorts, where they note that the mere existence of cohorts or communities offers no guarantees of any positive effect on learning. Further, they add that tight-knit groups create a danger of 'intellectual inbreeding' (p. 855) and situations where students conform to the group rather than grow. Maher (2004) similarly calls this 'groupthink' and even 'collusion' (p. 22).

Pressure to participate and perform in the group context can also be a negative pressure and conflicts, competition and jealousy can arise amongst participants (Pemberton *et al*., 2010) and students can become stuck in performing a certain role within the group (Teitel, 1997). Issues like 'groupthink' would perhaps be lessened in a larger cohort model where doctoral students are able to use their personal agency and preferences to choose with whom to associate or collaborate as well as their own training or development pathways. However, it may not be entirely avoidable as there are dominant personalities and cliques even in larger groups although generally, it could be assumed that these effects might at least be diluted with larger numbers of students.

There is an important point above related to group cohesion, however. This is not likely to emerge on its own and cohort leaders need to work to bring students together and to engage them in positive and productive ways. Simply telling a group of students, especially large groups, that they

are a cohort and providing training, events, funding, and other opportunities under that banner is unlikely to generate a group identity or feeling of belonging. Building community and relationships takes more effort as well as the engagement of the individuals involved.

The cohort model can also create pressure on faculty members who design or lead them (Teitel, 1997). While it can be a positive and rewarding experience to work closely with a group and while there may be career benefits in terms of professional networks, it can also amplify workloads related to developing and supporting cohort learning and structured programmes (Basom *et al*., 1996). Students can also use the power of the group to push for changes, which is not necessarily negative, or can create a scenario where there are negative tensions between faculty and students (Lewis *et al*., 2010). If the group has sufficient cohesion or individuals within the group who wish to lead, then students may be able to influence what training is available or required or make other impacts on the design of their programmes/development pathways. Indeed, cohorts or doctoral training structures may cultivate this through various methods of student engagement or representation. It may not be possible to do this easily at the level of a large cohort, graduate school, or cross-institutional entity. However, the other side of fostering student engagement and creating a sense of belonging may be that students will agitate for change when they feel strongly about something.

Belonging, fitting in, and being part of a cohort or a community are, from the evidence here, not entirely straightforward with individual and institutional factors adding complexity. While explicitly building a community or a cohort has positive connotations, it is also not a straightforward solution. Community and finding one's place is more likely to be emergent rather than imposed in contrast to discussions of socialisation.

3.4 Becoming: Identity

Social theories of learning, as already noted, often focus on the identity development of the learner as integral to the learning journey. Lave and Wenger (1991) assert in their seminal work on Situated Learning that (p.115) 'learning and a sense of identity are inseparable' and indeed are 'aspects of the same phenomenon'. Wenger, in expanding on the ideas (1998), foregrounds the importance of this concept, making identity one of four key components of his characterisation of 'social participation as a process of learning' (pp. 4-5): meaning, practice, community, and identity. These components, as discussed throughout this chapter, are integrated into the learning journey as PGRs build their identities and their knowledge as doctoral learners through experience and interaction/belonging. Wenger (2010) writes about the ways that identity and community are intertwined and are counterparts to one another – highlighting that 'identity reflects a complex relationship between the social and the personal' and that 'without a central place for the concept of identity, the community would become 'over-determinant' of what learning is possible or what learning takes place' (p. 182). This again underscores the role and agency of the individual doctoral researcher as well as the interdependence between individual and social.

Wenger (2010, p. 182) further adds that 'when learning is becoming, when knowledge and knower are not separated, then the practice is also about enabling such becoming', underscoring the sense of dynamism and a journey through or across a landscape. Identity here can be seen as a 'bridge between the individual and the social' (Wenger, 1998, p. 145) but changing over time and shaped by ongoing participation. This suggests that identity is an attribute or characteristic of the individual, but the formation of identity is dynamic and ongoing and in constant interplay with the social context of the individual. This dynamism is key to seeing learning as social and situated as well as individual, i.e. the participation of individuals and their role in shaping both their own learning and that of their communities. Lave and Wenger also stress (1991, p. 52), however, that despite the situated-ness of their approach and the description of learning as participation their theory 'implies

an explicit focus on the person' and see the tensions in the theory they articulate. However, they feel that by bringing the individual and the social together, they are focusing on the 'person-in-the-world' (1991, p. 52-53) as a member of a community and therefore bringing individual and context together. Lave also further asserts (1993, p. 5) that 'theories of situated everyday practice insist that persons acting, and the social world of activity cannot be separated.' In addition to this dynamism between individual and community, Billett (2006) also incorporates the idea of time highlighting (p. 58) that 'practices are continually remade by each generation and as cultural requirements change', building on and bringing in new knowledge and experience.

Identity can be conceived of in an abstract sense, as above in that learning and identity are intertwined and part of one's continual process of transformation, but also in more personal terms as to how one sees oneself and what that self-conception means for one's individual journey, I.e., as a student, as an academic, as a scholar, or something else. Green (2005, p.153) states that 'doctoral education is as much about identity formation as it is about knowledge production' although, taking a psychoanalytic approach, he stresses that a becoming is also an '(un)becoming' and can be 'fraught with tension, uncertainty, ambivalence'. Packer and Goicoechea (2000, p. 234) describe this as a 'forgetting' and a 'cost of participation' but an unavoidable part of the process. A casual observer could see anecdotal evidence for these feelings in looking at almost any group of doctoral researchers although they may not explicitly articulate this. Change (becoming and unbecoming) is part of the process as you learn ideas and skills about a new or expanded area of work or discipline and begin to fashion a future career direction. However, this is also a source of anxiety and 'there is little acknowledgement of the considerable potential for personal transformation through the doctoral process and the emotional challenges arising from such change' (O'Brien, 2019, p.216).

Billett and Somerville (2004, p. 315) view the personal/individual dimension to this conceptual thinking about learning and identity at the level of, for example, communities of practice, stating: 'individuals' construction of self is person dependent, as individual ontogenies and ontogenetic

development are unique because their prior experience is not and cannot be the same as others in that it is negotiated individually through a lifetime of interactions with the social world'. Ontogeny here is life experience and ontogenetic development the impact of that experience on the individual. While any individual will bring their own history, personality, and goals into any situation, including learning endeavours, the individual nature of a doctoral research project could mean that those personal aspects are magnified with individuals having greater control (agency) over the direction of their doctoral work.

What individuals bring (metaphorically) to their engagements with the social world is built up from previous engagements and experiences which are unique to that individual. Billet picks up on this idea (Billett, 2006; Billett and Somerville, 2004; cited in Emmioğlu *et al.*, 2017, pp. 75-76) pick up on this idea noting that 'there is a close, reciprocal and interdependent relationship between individuals' sense of identity and their learning, and this relationship is based on the intensity of individual agency (e.g., intentionality, subjectivity, identity) and the intensity of social agency (e.g., using the kinds of affordances that are provided)'. Affordances in this context are opportunities for engagement in the environment. This begins to provide a sense that individuals have agency in learning processes as they make choices informed by their experiences to date and what is available to them as well as what future path they are choosing. Billett (2007a) characterises this as individuals pursuing their chosen sense of self or desire to be themselves and, crucially, as not limited to their jobs or their workplaces but includes their personal lives, or even, as in this discussion, a doctoral journey.

Wenger (1998 p. 268) states that 'identity is the vehicle that carries our experiences from context to context', suggesting this evolving sense of self, although as written it lacks a suggestion that individuals are driving the vehicle. However, Wenger (1998, p. 188) also suggests that 'identity formation is a dual process' of identification (belonging, association) and negotiability (meaning-making, ownership) both of which suggest a more active role for the individual in making choices

about their current and future selves. Identity, however, is not simple or linear. Baker and Lattuca (2010) discuss identity formation in the context of developmental networks and highlight that identity can be experimental as with Ibarra's provisional selves (1999, cited in Baker and Lattuca, 2010, p. 819) or heavily influenced by others in terms of their expectations or opinions or one's community in terms of the norms and values of that community.

3.4.1 Doctoral Identity and Transformation

Postgraduate researchers as individuals experience identity development or transformation on a more personal level through the lens of their own journey. As Barnacle and Mewburn (2010, p. 433) highlight: 'Completing a PhD does not just involve becoming an expert in a particular topic area but comprises a transformation of identity: that of becoming a scholar or researcher.' In discussing their research with professional doctoral students, Rayner *et al*. (2015, p. 158) note that 'we do not find a simple progression from practitioner to researcher; rather, we find a fluid and complex relationship between those two identities.' Baker and Pifer (2011, p. 5) frame this as a transition from 'dependence to independence' seeing the journey from student to independent scholar. However, it is important to remember identity is not just professional identity but also relates to a sense of self. Wenger (1998) sees identity as a link between the individual and the social which is constantly being constructed and reconstructed, suggesting a dynamic endeavour. Identity in this conception is how you see yourself, how you interact with others and how others see you, but it is never static as it is a process of becoming/unbecoming or changing.

In the context of this research project, however, it is helpful to focus on the doctoral journey and the possible identity development of PGRs where identity is often discussed, variously, being a student, becoming an academic, researcher or scholar, or an identity related to one's discipline, e.g., an educationalist, a philosopher, a chemist. As Gee (2000) notes, individuals generally do not just have one identity (although they may feel that they have what he called a 'core identity', p. 99) but may have many as these relate to the roles individuals perform in society, e.g. what you are (such as

a sibling), what you do (such as a doctoral student), how you might be perceived or described by others (such as extroverted or introverted), and things or practices with which you associate. Gee (p. 105) calls this an 'affinity perspective', something you choose and gives the example of being a 'trekkie', or fan of Star Trek. McAlpine and Amundsen (2009) apply Gee's ideas to doctoral education, also describing various possible existing or developing PGR identities, such as student or scholar. They go on to suggest the positive implications or potential of the development of a 'collective identity' (p. 112) for PGRs, 'in which doctoral students act as positive agents in improving their own doctoral experiences', allowing them to be 'leaders in their own development' (p. 122). This is not meant in the usual sense of student governance or representation but a deeper and more consequential role in university processes and structures that deliver doctoral education. This is perhaps in tension to the individual PGR journey but also perhaps something that more recent changes to doctoral education might foster.

McAlpine *et al*., 2009 (p. 97) discuss the variety of activities that PGRs might engage in as part of their learning journeys or student experiences and note the variety of 'multiple formative activities that are experienced as contributing to a developing identity as an academic'. They assert that the cumulative effect of participation in a range of events and activities that form part of the doctoral journey builds towards the development of an academic identity. They draw on Tonso (2006) who finds three aspects to this sort of building of identity as a student - how you think of yourself as something, how you perform a role as something, and how others see you in that role. The findings in the McAlpine *et al.* (2009) study 'point to the range of activities and experiences that, through their informality or lying outside of the doctoral-specific realm, may not be particularly foregrounded in the awareness of those supporting doctoral students or monitoring their progress' (p. 107) and suggest that this may be an avenue to consider in supporting PGRs. This is also potentially a way that more structured doctoral education can play a role - by providing a broader

range of additional formative opportunities for PGRs to develop career-related skills but also to focus on these chosen paths.

A key support mechanism for PGRs is their peers, and identities may also be 'co-created' (Baker and Lattuca, 2010) in work or study settings through interactions with peers. They link this to sociocultural theories of learning where learning and identity are inseparable and, after Ibarra (1999, cited in Baker and Lattuca, 2010, p. 819), students try on provisional selves and experiment. They develop and articulate an approach that combines a sociocultural approach with developmental network theories (Higgins and Kram, 2001) to underscore the importance of relationships and social interactions to this development. Baker and Pifer (2011) continue with these ideas but focus on the role of relationships in the transition from student to scholar. In both articles, they see these two approaches, a sociocultural approach with developmental networks as complementing each other. The sociocultural approach is vague on how networks are supportive and developmental networks as a theory is vague about learning and identity. The concept of provisional selves (Ibarra, 1999) that Baker and Lattuca (20210) use is helpful to clarify this as students try on aspects of identities that perceive in their networks and within their social interactions with the resultant developments in identities or behaviours that they feel fit with their ongoing identity development.

A similar approach is expressed by Fenge (2012) who highlights reciprocity in relationships and in what she describes as a 'learning ecology' (p.404) where peers learn from each other. However, she sees this less as experimentation, which connotes something more deliberate, but possibly as 'collisions of various aspects of self' (p. 406), constructing and re-constructing one's own identity. This suggests less of a deliberate choice and more of an aspect of serendipity (McCulloch, 2021) in what students encountered during their doctoral studies. This further suggests that there is a role for providing a broad range of activities for students to have many possibilities for those serendipitous encounters that are meaningful to them in designing their own journeys.

It is also easy to make assumptions and Owens *et al*. (2020) assert that on this journey there is a tendency for institutions and supervisors to assume that students have access to or understanding of what they need to be successful or what is available to them. There can also be a tendency to ignore key aspects of the doctoral journey which are perhaps more personal to individuals, such as the ways in which learning can provoke uncertainty or be transformational and unexpected. This can sometimes be discussed as 'liminality' (Kiley and Wisker, 2009, p. 432), an in-between space of indeterminate and uncontrollable length before a breakthrough in understanding which can be disorienting or otherwise challenging for an individual. Dowle (2022b, p. 191) also discusses liminality, suggesting that a lack of attention to this important experience for doctoral researchers is surprising given its near ubiquity for researchers. While this state of liminality is personal, researchers can be supported in their experiences of this, particularly if they are encouraged to be flexible and reflective.

These authors generally all acknowledge the key role of supervision for students but suggest that there is a wider picture, what Hopwood (2010a) describes as a 'constellations of others' (p. 103) where students engage with and build communities and support networks, described by Hopwood (2010b) as 'emergent and unstructured experiences', around them to facilitate the development and support that they need to persist (McAlpine *et al*., 2012). Relationships with others are not however straightforward and consistently positive experiences as students may at times feel excluded or lacking in opportunities (Emmioğlu *et al*., 2017; Baker and Pifer, 2011) or that relationships themselves can be negative or have negative impacts (Hopwood, 2010a).

3.5 Conclusions

Wenger's (1998) description of the type of learning and engagement in his theory of learning based on social participation as 'being active participants in the practices of social communities and constructing identities in relation to these communities', and integrating learning as experience, doing, belonging, and becoming (1998, pp. 4-5) helps to understand the doctoral student experience.

The concepts elaborated in this chapter help to support the conception of learning articulated by Wenger as well as describe key aspects of the doctoral experience.

This active participation is considered by Wenger-Trayner and Wenger-Trayner (2015a) as a trajectory, a journey across a landscape of practice, or 'the becoming of a person who inhabits the landscape with an identity whose dynamic construction reflects our trajectory through that landscape' and adding that 'this journey within and across practices shapes who we are' (p. 19). Fenton-O'Creevy *et al*. (2015, pp. 43-44) also add that there are multiple, individual, trajectories across a landscape, i.e. levels of engagement, participation, or embeddedness within a community can be different for different individuals and at different times. This underscores the dynamic nature of the journey, the individual learning and identity changes, and the interplay between the individual and the social. It becomes easier to see the dynamism inherent in experience, doing, belonging, and becoming as highlighted in Figure 1. These aspects of learning are also helpful to think about in terms of how different actions or actors affect the doctoral journey - and importantly, where HEIs and DTPs sit in this landscape.

Wenger (1998, pp. 72-74) also asserts that what defines a community of practice is mutual engagement, joint enterprise, and shared repertoire and that these are three key aspects of a community of practice through sharing, negotiating, evolving, and identifying with a community's practices. He notes (2010, p. 182) that 'as learning gives rise to a multiplicity of interrelated practices, it shapes the human world as a complex landscape of practices'. What is described here in the experience of doctoral education is not a simple, single community of learners but rather many communities, large and small, that have different characteristics, elements, practices, and participants - a landscape of practice. What one learns forms one's identity and learning continues to change one's identity over time as individuals participate in their communities in their own ways. This interconnectedness and interdependence of agent and social world is key to understanding a socially situated approach to learning in the inter-connected landscape of doctoral education.

The argument advanced by this chapter is that doctoral education can be seen as a complex landscape of practices, using Wenger's theory of learning as social participation showing 'meaning (learning as experience), practice (learning as doing), community (learning as belonging) and identity (learning as becoming)' (Wenger, 1998, p. 5) to illustrate this landscape.

4 Research Methods

4.1 Introduction and Approach to Research

This chapter will detail the approach, methods, design, and analysis of the research supporting this dissertation. In summary, this was a qualitative study using interviews as a data-gathering method and employing a thematic analysis to interpret the data. However, these are the broad mechanics of the work, and this chapter will illuminate the assumptions and choices of the researcher in designing, executing, and analysing the research. It will also consider the positionality of the researcher and reflections on the process.

4.1.1 Epistemology and Ontology

Creswell (2007, p. 16-17) discusses the perspectives of qualitative researchers in researching the views and experiences of their participants as having a subjective ontology; that is, that reality must be subjective, from the perspective of the individual or subject, for the differing views and experiences of individuals to be valid and subject to the kind of interpretation that takes place in qualitative research. Ontology is 'the consideration of being: what is, what exists, what it means for something—or somebody—to be' (Packer and Goicoechea, 2000, p. 227). Described in this way, this subjective ontology asserts the existence of a reality that exists in the experience of individuals rather than an external, fixed, and measurable reality that does not require the engagement of individuals to understand it or to give it meaning.

Creswell (pp.16-17) further outlines that by undertaking qualitative research, researchers take broad epistemological (knowledge and understanding of participants' contexts), axiological (articulating the values of the researcher), rhetorical (presentation of the research), and methodological (inductive processes) positions. Packer and Goicoechea (20000, p. 227) define epistemology as 'the systematic consideration, in philosophy and elsewhere, of knowing: when knowledge is valid, what counts as truth, and so on'. In very simple terms, epistemology can be

viewed similarly to ontology in that questions related to what we know and how we know it also relate to objective and subjective realities – does knowledge exist independently of individuals who tap into it, is knowledge created by individuals for themselves and then resides within them in some way, or is knowledge created by individuals through social interactions and resides as a shared, social construct? The literature review chapter preceding this chapter engaged with these ideas in relation to learning.

Following Creswell's assertions, this would suggest that qualitative researchers will likely rely broadly on one of the latter two of these simple articulations of epistemology in exploring the views and experiences of individuals - that knowledge is created by and for individuals inside themselves or that knowledge is shared and socially constructed. Indeed, referring to the previous chapter, it is suggested here that there is an interdependence and reciprocity between the individual and the social that is key (Billett, 2006, p. 54).

As an individual, it appears to this researcher that personal knowledge is constructed on an individual level as an individual can only guess at the experiences and knowledge of others. However, it also seems apparent that any knowledge is built up through interaction with others, has a shared quality, and arguably lacks some meaning without reference to others. It is asserted herein that knowledge has both individual and social qualities that are required for understanding and meaning. An individual isolated from other humans, e.g. on a desert island, still would have a history of learning and interaction and continue to interact with their environment.

Birks (2014) presents an approach to epistemology with high-level categories of rationalist (knowledge through thought and reason), empiricist (knowledge through data and evidence), or interpretivist (knowledge through appreciating the complexity of the human experience and interactions). She says (2014, p. 19) that interpretivism 'deals with human beings, human society, our stories and cultural artefacts and a host of human problems' and 'allows its descriptions and

explanations of human beings and their concerns to be subtly and thoughtfully imbued with human values'.

It is this latter, interpretivist, position that is taken in this research project – a view that knowledge and human understandings can be understood, explained, and even theorised through multiple viewpoints or lenses and that these understandings can have meaning at both individual and group levels. Birks also notes that this means that 'explanations and conclusions are forever open to reinterpretation and social critique' but that this is how it should be given the position. Indeed, as an insider to the institution conducting research in the institution, these multiple viewpoints and reinterpretations add additional interest and texture to the research.

Having established a broad positioning related to subjective ontologies and epistemologies, the next step is to consider which paradigm, or theoretical position applies, to this research. Creswell sees these as 'worldviews' (2000, p. 19) and considers the relevant possibilities to be post-positivism, social constructivism, pragmatism, or an approach which he characterises as advocacy or participatory. Birks (2007, p. 20) presents a similar but slightly different list: positivism, post-positivism, postmodernism, critical theory, and constructivism. She also highlights that this is not definitive and cites critical realism as an example of a paradigm that arguably sits between positivism and constructivism.

4.1.2 Social Constructivism

This study adopts a social constructivist paradigm – both Creswell and Birks link this to interpretivism and this is apparent above in the articulation of the researcher's view that knowledge is built, learning takes place, and meaning is made by individuals through social interactions. Notably, social constructivism was identified in the previous chapter as being a somewhat slippery approach to understanding learning as social constructivists are described by Prawat and Floden (1994. p. 37) as agreeing on little beyond a fundamental idea that 'knowledge is a social product'. Packer and

Goicoechea (2000, p. 235) describe a challenge to (not 'social') constructivism as failing 'to see that the individual cognizer is not a natural creature, but one possible creation of human culture and history'. They contrast this with a sociocultural viewpoint, noting that: 'to the sociocultural emphasis on situation and participation must be added the recognition that membership of a community is never an unproblematic enculturation' (p. 235), highlighting that individuals are diverse, with diverse needs, viewpoints, and histories. Their linkage of these two viewpoints is that 'person and social world are in dynamic tension, and community membership sets the stage for an active search for identity, the result of which is that both person and community are transformed' (p. 235). This research project takes this viewpoint that a dynamic relationship is needed between the individual 'cognizer' and the social situations in which they exist to understand how individuals make sense of their world and how, as researchers, we can review evidence from individual experience and draw understanding and recommendations for action from this. This also suggests an evaluative approach to the interpretation to draw conclusions and recommendations for change or action from the research.

Further, an inductive process was used to build an understanding of the data in this study. Birks (2014, p. 23) explains that:

> *Through induction, qualitative research methodologies can generate theory. Conversely, through deduction, quantitative research aims to test theory. Thus, qualitative approaches generate knowledge that is seen to reflect the reality of individuals and groups while quantitative research seeks to validate that knowledge and its potential global application through empirical testing.*

The view taken here was that to understand the data from the participant experiences, the data should be analysed without applying a specific theory, and the themes generated by a thematic analysis would point to ways to understand the data and apply a relevant theoretical approach.

The research questions themselves focus on the experiences and perspectives of students, as recounted by them, rather than what universities or university managers are able to or would like to

measure and is by design subjective and individual. The questions asked how students felt that the SGSs contributed to their journey and what this brought to their individual doctoral experience. It focused on the lived experience rather than outcomes such as timely submission or number of publications.

4.1.3 Professional Context and Positionality

As previously noted, this research project was undertaken as part of a Doctorate in Education (EdD) and therefore is linked to the professional context and positionality of the researcher as a manager in higher education, with a role focused on doctoral education. The researcher was simultaneously a student, a staff member, and a researcher in the same institution and thus conducting what is often referred to as 'insider research' (Mercer, 2007; Floyd and Arthur, 2012). The position of the researcher in the institution engendered a deep and longitudinal understanding of university policies, strategies, and processes related to doctoral researchers as well as of institutional survey data which measured broad satisfaction. This understanding also included a sense of the limitations of considering the doctoral experience from the perspective of staff members and the institutional need to solve problems at a population level without understanding how this is experienced by doctoral researchers or what satisfaction might mean to different individuals. The existence of policies or processes does not guarantee that they work well, work at all, or are effectively communicated to students. This project is an attempt to fill some of these gaps in understanding.

Costley et al. (2010) discuss the insider researcher as being situated in their context but also highlight that while providing insight and connection, this situated-ness requires significant personal and professional understanding from the researcher to be critical, reflective, and unbiased. Interestingly, Mercer (2007) notes the variations of 'insider-ness' in her study with staff at different levels and across two different institutions where she had employment relationships and how this may have affected the participants in that study. She felt that conceptions of insider and

outsider were not always black and white and were more of a continuum depending on context, shared characteristics or other variables that might enhance a researcher's understanding of a given situation. In this project, the researcher was not in a student-facing role and therefore not personally familiar to any students, making the assertion that the researcher was acting in the capacity of a student rather than a staff member perhaps more convincing to participants. However, ongoing reflection and criticality were required to ensure objectivity and openness. This required a conscious effort to allow the data to tell its own story and interrogate the interpretation when it did seem to support previous assumptions. It is useful perhaps to highlight that while some assumptions or preconceived ideas may be based on anecdote or opinion, professional knowledge is built up from lived experience as 'learning professional ways of being' occurring 'through integration of knowing, acting and being the professionals in question' (Dall'Alba, 2009, p. 43).

Floyd and Arthur (2012) raise important ethical concerns about the insider position of a researcher, such as extra measures to protect the confidentiality and well-being of participants in the research and an awareness of power dynamics between participants and researcher. However, Yardley (2008) highlights that there is no way that the researcher can entirely remove themselves from a study that they have personally designed and executed but that they must acknowledge and consider this on an ongoing basis. Floyd and Arthur (2012) also highlight that supervisors of postgraduate research in cases where the research is being conducted within the same institution are also insiders and should reflect on their position as such.

The researcher in this study held the post of 'PGR Strategy and Policy Manager', had access to senior management in the routine conduct of this role, was able to influence policy decisions within the institution, and had a role in ensuring well-made funding decisions. In addition, the researcher had an institutional responsibility for the administration of the funding stream for the SGSSS through the line management of their team. The knowledge and experience of holding this post since 2010 with a specific remit for PGR matters at an institutional level and the experience of working with

students and organisational units that supported students throughout this period led to an in-depth understanding of the policy and funding landscapes relevant to this study. This led to a desire to better understand the lived experience of students and what was important to them in their doctoral journeys, as contrasted with what was important to the institution – and indeed, how these two interests overlapped.

The value of the professional doctorate is often described as the potential for enhancing the professional understanding and approach that the researcher can bring back into their work. Interestingly, Hawkes and Yerrabati (2018) highlight in a systematic review of the literature about professional doctorates that there was a gap in the literature about the effect of the professional doctorate on researchers undertaking these and on their employing institutions. Boud et al. (2021, p. 442)) address this gap only partially through their discussion of impact (as defined in the context of research assessment), noting that 'the interactions and mutual reinforcements of a growing research-mindedness, increasing professional competence and confidence, developed abilities for impactful behaviours and outcomes' in professional doctorate holders. Further, they noted that 'the impact was directly and indirectly related to doctoral learning in that it was not solely the research driving impact, since the research itself is grounded in practice'. In the case of this research project, the researcher would argue that the effects were both profound and subtle but permeated their approach to their professional practice, enhanced their criticality, opened new viewpoints, enhanced their ability to reflect on their work, and enabled them to see themselves more clearly as a professional in their working context. Burnard et al. (2018) discuss this journey as being from a practitioner to a researching professional and the identity transformation that accompanies this as they build a new, expanded, professional identity. They note (p. 51) that: 'This repositioning of the professional identity at the nexus of practice and theory takes them closer to achieving Aristotle's phronesis (that is, wisdom in determining ends and the means of attaining them), but this journey is far more arduous, not least because they are not only personally but also professionally invested in

the outcome.' More arduous perhaps but, arguably, even more rewarding as the impact of the research or, as Boud et al. (2021, p. 442) described, 'research minded-ness' in the approach to the professional context could generate demonstrable benefits and impacts that were personally important. However, as noted above, it also required care, reflection, and an objective approach to the research data as it was important that the resulting analysis did not merely confirm expectations but rather enabled an understanding of the full range of views expressed.

Indeed, an important reason for undertaking this research through an EdD rather than a PhD was to examine and understand the professional context of the researcher and to use the opportunity to provide evidence-based suggestions and improvements for the experience of doctoral students. Galvin and Carr (2004, cited in Mellors-Bourne, 2016, p. 9) discuss the difference between a PhD and a professional doctorate as the difference between the outcome of being a 'professional scholar' and a 'scholarly professional'. Indeed, the professional viewpoint and insider position of the researcher led to particular choices about the research, particularly in relation to a focus on lived experience rather than policy decisions, knowing less about the former than the latter. This enabled the researcher to take a different viewpoint on their work and expand their professional horizons within a role that focused on strategy and policy. Further, it was hoped that the study would lead to new understandings and recommendations specific to the context of this university.

4.2 Research Design and Procedures

4.2.1 Pilot Study

This study did not directly benefit from a pilot exercise. However, the structure of the EdD is such that the final course undertaken as part of the taught element required a small pilot study to be conducted and written up as well as a proposal written for the dissertation study. There was no requirement for the pilot study in the taught portion of the course to be a directly linked pilot for the eventual dissertation. It was a way to test out ideas and research methods and to inform the student's thinking about the proposal for the dissertation. The research question employed in this

pilot study was: What is/was your motivation (or your students' motivation) for undertaking doctoral study? Semi-structured interviews expanded on this to ask whether these motivations changed during students' period of study and why, whether students' motivations helped to sustain them during difficult times, whether specific aspects of the doctoral journey influenced motivation, such as supervisory support, career plans or other support or training that they received, and what students found demotivating. The intention of the study had been to conduct two student focus groups to explore this topic, but recruitment of participants proved challenging, and this was amended to interviews that included both academic staff members and current PGR students. It proved difficult to recruit participants and there was a narrow window, based on the timing of the course, in which the study needed to be conducted. The aim of this study was to gain experience in running and writing up a pilot study and this included the ability to experiment with a relevant aspect of the intended dissertation study as well as to experiment with the execution of the research method.

Key insights about the execution of the study were the challenges in recruiting students to focus groups, necessitating the change to an interview format. It was noted at the time that in addition to the challenges of recruitment, focus groups as a method had challenges of their own. Breen (2006) acknowledges the organisational challenges as well as noting additional potential challenges with group dynamics (such as those who dominate or those who say little) and the role of the moderator on the outcome. Onwuegbuzie et al. (2009) also suggest that focus group data has the potential to represent group dynamics rather than individuals' opinions or feelings. This ultimately influenced the choice of one-to-one semi-structured interviews in this study.

The analysis of this small study relied on the ideas related to self-determination theory in both the conceptual design of the questions and the analysis. The analysis then suggested that the three basic needs articulated by Deci and Ryan (2012, p. 88) autonomy, competence, and relatedness, were in evidence in the interview data. Autonomy is related to their variety of motivations and competence to their persistence in the face of challenges (Litalien and Guay, 2015). The final need

related by Deci and Ryan, relatedness, was also an important influence on the thinking behind this dissertation study to potentially understand the doctoral experience.

4.2.2 Main Study

The proposal for the main study was designed in parallel to the conduct of the pilot study as these were submitted together for assessment of the final taught course on the EdD. In addition to the influences of self-determination theory and ideas of relatedness noted above, the ideas for the design of this project emerged from reading Hopwood (2010 a, b) and Baker and Pifer (2011). Hopwood took a view of the individual postgraduate researcher and of the individual agency and relationships of doctoral learners. He refers to this as a 'bottom-up view of doctoral experience, focusing on students' accounts of learning through their engagement in a range of activities' (2010b, p. 830). Baker and Pifer (2011) brought together perspectives related to sociocultural theory and developmental networks to analyse aspects of the doctoral researcher experience and the role of relationships in identity development. Both studies used interviews as a research method although Hopwood supplemented interviews with focus groups. Both studies also relied to a greater or lesser extent on a sociocultural theory of learning.

Further, the role of the researcher in interactions through their day-to-day functions over time and in management of staff who directly supported the SGSSS funding stream, and indeed early involvement in the development of institutional practices supporting the SGSAH and SGSSS funding streams, led to the question of the value that they enabled for students. It was perceived that this was a question that was never asked and that the value was assumed. It is not a matter for discussion herein but the value of the funding to the institution is assumed since it is a large and prestigious funding stream. Arguably, in addition to the benefit of the funding, there are significant hidden costs and opportunity costs to the institution in terms of staff resources and partial funding of students. It was not inconceivable that there were hidden or at least less evident costs or benefits to the students who participated in the funding. While this dissertation study was careful to ask open-

ended questions to elicit a broader discussion of value and took an inductive approach to understanding the data, it would be difficult to say that the ideas related to sociocultural theories and more socially oriented theories of learning were not influential in the design of the study.

4.2.3 Interviews

The decision to use interviews as a data collection method was influenced by an original intention to use interpretive phenomenological analysis (IPA) as a broad methodology. Smith et al. (2009, p. 56) state that interviews are one of the key methods for an investigation in which IPA is used as they 'facilitate the elicitation of stories, thoughts and feelings about the target phenomenon' and provide 'an intimate focus on one person's experience'. Further, one-to-one, semi-structured interviews, as used in this study, are recommended for building rapport with participants, exploring ideas and events raised by participants, and allowing participants a way to provide a 'rich, detailed, first-person account of their experiences' (p. 56). It was decided after the first two interviews that the methods recommended by IPA would not be used as a method to analyse the interviews and this will be discussed in more detail in the analysis section. That decision notwithstanding, interviews are an important method for collecting data about individual experiences, for example in the descriptive phenomenology described by Sundler et al. (2019). Alshenqeeti (2014) reviews the strengths and weaknesses of using interviews including that as strengths, interviews can allow researchers to probe participants' views and experiences more deeply and explore emerging topics as well as for data to go beyond the description of phenomena through its interactive approach and potential for interpretation. Conversely, interviews as a research method might be criticised (Alshenqeeti, 2014) for the labour-intensiveness of their recording, transcription, and analysis or that interviewees may not be entirely forthcoming in their replies. A potential value of insider research in this case is a familiarity with the subject matter (the SGS) and the structures and processes of the institution of the participants. This also enables the ability to understand the context for participant responses and

probe deeper for more detail whereas a researcher with less personal knowledge of a situation might take more replies at face value.

4.3 Research Instruments and Process

4.3.1 Ethical Approval

Ethical Approval was granted for the study by the College of Social Sciences. The approval process included a description of the process below, a discussion of data protection and management, and drafts of participant information sheets and consent forms. Final versions of these are contained in the appendices. During the pandemic, an additional ethical approval request was submitted so that the interviews could be conducted online and an online method for the card sorting exercise described below could be used.

4.3.2 Interview Design

A set of interview questions was designed, with feedback from the supervisor, to elicit information about the PGR experience broadly as well as specifically as it related to the SGSs. The interview questions may be found in the appendices. A key line of questioning is what helped or hindered students in their journeys. As the interviews were semi-structured, these were not to be followed in a linear or exact fashion. Rather, they were used as prompts for discussion or to ensure that the fullest range of topics were considered while allowing the conversation to flow naturally, guided by the interviewee. While the broad questions were designed to ask students about their doctoral journeys, it was hoped that they would independently raise the SGSs and their experiences, especially as they had been informed that the value being added by the SGSs was the key aim of the study. Participants had been informed, via the participant information sheet and consent forms, of the topic of the research and were prepared to discuss this. However, the questions were used to allow students to talk about what and who were valuable in their journeys in general before asking specific questions about their experiences with the SGS.

4.3.3 Recruitment and Selection of Participants

Participants were recruited by emails using established internal, University of Glasgow mailing lists and sent from institutional accounts familiar to the potential participants. Emails came from the central research office PGR team who frequently communicated with PGRs about policy and funding matters. These emails, while more likely to be opened and read by participants from an internal address, also underscored the staff position of the researcher as they were being approached via a channel used by staff to communicate. The researcher was clear at all times of their staff role and that they would stand outside of that role as a student in conducting the research.

Selection criteria and thus targeting of emails to students were: (1) University of Glasgow postgraduate researchers; (2) funded by either SGSSS or SGSAH, (3) students who had completed 2 years of doctoral study, either full or part-time. The intention was that their experience as a PGR would be informed by more than their initial settling-in period, that they would have participated in more training and events over time, and that they would be able to discuss a broader range of issues from their personal experience. All had also started prior to the pandemic/lockdown period and therefore had the ability to share experiences before the move to online/off-campus study.

Students were only mildly responsive to the first request for interviews in 2019 and only two participants were interviewed prior to the pandemic. Interviews were conducted face-to-face, on campus in the meeting room in the Research Services offices. The interviews were audio-recorded for transcription. Photos were taken of the card sorting exercise described below. Later, when Zoom was used for online interviews, interviews were recorded by that software and screenshots were taken of the card sorting exercise.

4.3.4 Card Sorting Exercise

Alongside the interviews, an additional reflective technique was employed. The interview questions asked participants, amongst other things, where their support came from and/or what

support was most useful to them in their doctoral journey. This technique emerged from discussions with the supervisor for this project, who had used visual research methods in the past (Elliot et al., 2017), and how this might be one way to follow advice to 'always seek the particular' when conducting interviews for research (Richards, 2003, 9. 53, cited in Alshenqeeti, 2014, p. 41).

At the start of the interview, participants were asked to take a stack of index cards with names of possible supporters on them (e.g., supervisor, graduate school, office mate, partner, family, etc) and arrange them in a way that suited them around a central card representing themselves to visualise their network of support. The list of named cards is found in the appendices. Participants were also provided with several blank cards and a pen and were told that they could add anything they wanted. When interviews moved online, a website called 'padlet' (***https://padlet.com/***) stood in for this and was approved as part of the secondary ethical approval for online interviews. Padlet is a way to capture ideas on virtual post-it notes which can be created, edited, or moved around the screen. Participants were provided with a link to the pre-created pallet with virtual post-it notes the same as the index cards. Participants were similarly asked to move these around or to add to edit them as they pleased. A screenshot of the padlet was captured and saved so that no participant data remained in an external system.

This technique served as a warm-up exercise at the start of the interview to give participants a few minutes to reflect on their experience and who (people or entities) had helped them on their journeys as did the short discussion of what they produced. In one interview, the padlet technology failed, and the participant was unable to move the virtual post-it notes on the screen. However, the exercise was still completed as a discussion with the narrative captured in the transcript. The analysis of interview data puts the interpretation into the hands of the researcher (Stone, 2015) but the evidence from this additional exercise, in addition to its value as an icebreaker, served to further illuminate and confirm what was discussed in the interviews. Further, it fit with the IPA-style approach described above which was initially intended in this project. IPA approaches favour more

iterative, layered approaches to understanding and analysing data and attempts to 'bracket', or put to one side, one's preconceptions (Smith et al., 2009, p. 28, 35).

While limited in the data the technique produced, the exercise also served as an implicit validation of what participants said about their experiences during the interview. There were no card exercises that suggested any evidence that the narrative provided by participants was not a reasonable accounting of their experience. Less direct visual methods than words on cards might have produced richer data but it was felt that the richness would be in the narrative and that this avoided the challenge of approaches requiring additional interpretation or participants who struggled to engage with less direct methods.

4.3.5 Interviews

In the interviews, participants (n=9) were asked to describe aspects of their experience that helped them and that hindered them in making progress or in having a positive experience during their studies, at first without prompting about who or where support was found or where issues occurred and then more specifically about supervisors, schools, the University, and the SGSs. While focusing on the SGS' role, broader experiential questions were asked so that the discussion about the SGSs emerged as a part of the overall context of their experience rather than the sole topic of discussion.

Two interviews were conducted face-to-face in late 2019 and after delays due to periods of suspension related to the pandemic, 7 more interviews were conducted in late 2021. These 7 interviews were conducted during a time when some students were returning to campus and restrictions were being lifted but the disruption due to the pandemic was still fresh in everyone's minds. Participants who were interviewed post-pandemic were told that it was fine to acknowledge the impact of the pandemic as this was an unavoidable part of their experience but asked to think back as well to the pre-pandemic period when considering how they recounted their experiences.

The contrast between the two experiences (pre- and post-pandemic) was notable for most of them but, while not always a positive experience, participants adapted by and large to their changed circumstances, either in terms of how / where they worked, how they adapted their research and/or how they reorganised their studying life (such as moving to part-time).

Finally, participants were sent a summary of their interviews after they were completed and offered the opportunity to comment further or point out any mischaracterisations or errors in the summary. None of the participants responded to this email, suggesting either that there were no perceived issues or that anecdotal PGR student complaints about being too busy or getting too many emails leading to missed communications are correct. Table 1, below, provides details of the interview participants.

Table 1: Participant Details

Pseudonym	Scottish Graduate School	College (UofG)	Study Load	Year of Study**	Age	Gender	Domicile
Wynona (P1)	SGSSS	COSS	FT*	3	35-40	F	UK
Thomas (P2)	SGSSS	COSS	FT	3	25-30	M	UK
Scott (P3)	SGSSS	COSS	FT	3	25-30	M	UK
Leila (P4)	SGSAH	COAH	PT	3	35-40	F	UK
Hamish (P5)	SGSAH	COAH	FT	3	25-30	M	EU
Fiona (P6)	SGSAH	COAH	FT	3	25-30	F	UK
Catrina (P7)	SGSSS	COSS	PT*	3	35-40	F	UK
Fergus (P8)	SGSAH	COAH	FT	3	25-30	M	UK
Nora (P9)	SGSAH	COAH	FT*	3	30-34	F	UK

*Changed status during their programmes, table reflects their current status
Legend: SGSSS (Scottish Graduate School of Social Sciences); SGSAH (Scottish Graduate School for the Arts and Humanities); COSS (College of Social Sciences); COAH (College of Arts and Humanities)

4.3.6 Analysis

Interviews were transcribed and the text was uploaded to NVivo where they were coded to generate themes. The first two interviews were coded manually using Microsoft Word and the interpretative phenomenological approach recommended by Smith et al. (2009, p.86) and taking detailed notes on the text and the descriptive, linguistic, and conceptual ideas found in the transcripts. 'This involves looking at the language that they use, thinking about the context of their

concerns (their lived world), and identifying more abstract concepts which can help you to make sense of the patterns of meaning in their account (p. 83).' Those three categories of ideas were not intended to be prescriptive, and Smith et al. (2009) encourage researchers to see the description as principles to follow, especially for new researchers, rather than a prescription (p. 80). This approach is an effort to deeply engage with the text, develop a 'dialogue' with it (p. 79) and ultimately to develop themes.

However, the kind of detailed line-by-line analysis was not felt in this case to generate significantly more insight than a more straightforward thematic analysis using NVivo and a straightforward thematic coding of the text. More than a year had also passed due to the pandemic allowing for reflection on the method used for analysis of the text. Indeed, the method adopted bears more resemblance to what Sundler et al. (2019. p. 735) describe in their article about thematic analysis and descriptive phenomenology, based on the 'methodological principles of emphasizing openness, questioning pre-understanding and adopting a reflective attitude.' Their view is that the lived experiences of participants do not require interpretation so much as they are illuminated (p. 735) through thematic analysis, i.e. the meaning within the data may seem hidden or less than obvious, but the analysis will enable the researcher to see the meaning. This may be true for an analysis of the data, but arguably, the interpretation exists in discussing the data and the analysis, drawing conclusions, and making recommendations.

Analysis of the interview material was therefore undertaken using NVivo to code the interview transcripts and then generate themes based on multiple readings of the transcripts and code extracts. Coding is, of course, a subjective activity. In many research projects, multiple researchers would code the material independently or other similar attempts would be made to include the viewpoints of several researchers in the resultant code lists and thematic understandings. In this case, as a postgraduate researcher, there was no other researcher as part of the team, save the

supervisor. As noted, coding was discussed, and a detailed review was undertaken on the first two interviews providing a basis for subsequent coding.

The table below sets out the details of the approach to the analysis of the transcripts, taking a thematic approach.

Table 2: Stages of analysis, drawing on Braun and Clarke (2006)

Stage	Implementation within the current study
Transcription and review of data	• Transcription of interviews by the researcher; two passes at the transcription were done to ensure thoroughness • Notes taken and short summaries written as an initial level of analysis.
Generate initial codes	• First two interviews were coded using techniques related to Interpretive phenomenological analysis*. This initial review informed the generation of codes when full coding of all interview transcripts took place in Nvivo.
Consolidating Coding / Looking for themes	• Codes generated through Nvivo were reviewed, and in some cases re-coded where codes were felt to over-lap significantly. Nvivo outputs (code lists, code frequencies, code summaries) were reviewed to support initial consideration of themes and a further review of coding. • Data under each consolidated code was produced by Nvivo and reviewed to further strengthen thinking on themes. Some codes were limited to smaller numbers of interviews (e.g., direct references to specific aspects of one of the SGSs) and were still reviewed in considering themes to ensure coding had been thorough.
Reviewing themes	• Further coding review and reflection with a focus on consolidating codes with similarities. Codes were not always consolidated when they were similar (e.g., community, social support and interaction, and peer support) as they offered distinctive perspectives.
Defining and naming themes	• Codes/themes organised into a visual thematic map as an exercise to review the larger picture of how the themes fit together and what might have been missing. Sundler *et al*. (2019, p. 736) describe this as looking for a 'meaningful wholeness'.
Producing analysis chapter	• Drafted chapter around the themes and sub-themes using quoted material from interviews. Writing process strengthened thinking on thematic choices and enabled further refinement of the presentation of the themes. • In later editing, a new thematic map was created to simplify the themes that were presented, and the chapter edited and reorganised to align with this.

*Use of this method was re-evaluated and changed in favour of a thematic analysis after the first two interviews.

While frequency is not necessarily a proxy for relevance or meaning, it is possible to see in the frequency table produced by NVivo that the key themes were largely visible in outline form. For example, discussions of funding and supervisor support were often raised after direct questioning rather than coming up on their own. Indeed, participants were often surprised that they had not mentioned their supervisors until they were asked about them. Students were somewhat variable about these relationships with most noting how invaluable this relationship was and some articulating some difficulties or challenges with the relationship. Ultimately, this was not included as a theme or sub-theme as it did not come out as strongly as the themes related to day-to-day working, communities, or training. Notably, students interviewed were in the humanities, arts, and social sciences and therefore had less day-to-day or less frequent engagement with supervisors than those students in more lab-based subjects might have.

Table 3: NVivo Top 20 Codes

Codes	Number of references in the data	Number of Interviews where code appeared
1. Community	67	9
2. Training relevance	59	9
3. Pandemic impact	56	7
4. Bureaucracy	55	9
5. Supervisor support	54	9
6. Funding	51	9
7. College graduate school	49	9
8. Discipline	44	9
9. University support	38	9
10. Social support and interaction	30	8
11. Office space	29	8
12. School or subject support	29	8
13. Academia	26	9
14. Complexity	26	7
15. Peer support	25	7
16. Skills	25	6
17. SGSAH Support	24	5
18. SGSAH training	24	6
19. Workload	24	7
20. Challenge	23	6

4.4 Validity and Trustworthiness

Validity and Trustworthiness are considered in the table below. It should be noted that these terms, validity, and trustworthiness, can often be conflated and/or used interchangeably (Hayashi et al., 2019). The table below sets out criteria for trustworthiness adapted from Neal and Frederickson (2016) who drew on the authors noted at the base of the table.

Key points are that:

- the study uses well-established research methods and the use of the card sorting technique alongside the interviews added evidence that the interviews represent what was intended to be expressed by participants, at least in broad terms;
- the research was designed and conducted by a professional manager with several years of experience of the subject matter, in the final stages of a professional doctorate, and supported by an experienced supervisor;
- the participants were able to speak knowledgeably about their experiences in relation to the topic of the research;
- thematic analysis yielded findings that were consistent across the interviews, suggesting that the experiences were possibly shared more widely in the population, and in alignment with existing literature;
- the insider-ness of the researcher has been acknowledged and discussed in this chapter, as has the professional context and understanding of the researcher, suggesting that a reflexive approach has been taken in designing, implementing, analysing, and reporting on this research.

Table 4: Trustworthiness criteria, adapted from Neal and Frederickson (2016)*

Trustworthiness criteria	How this was achieved in this study
Credibility • Are findings congruent with reality? • Is a reliable picture of the situation is presented?	• Well established research methods: semi-structured interviews; consideration given to evidence regarding interview design and studies with similar approaches; • Supervisor participated in a detailed review of first two interviews to discuss and cross-check coding; • Sundler *et al*. (2019, p. 737) note: 'Credibility lies in both the methodology and in the presentation of findings…. Themes described must be illustrated with quotes to ensure the content and described meanings are consistent.' This is laid out in this chapter and in the analysis chapter. • As a professional manager working in doctoral education for 12+ years, findings were consistent with the professional experience of the researcher.
Transferability • Can findings be applied to other, comparable situations? • Are findings Relevant useful, and meaningful (Sundler *et al*., 2019, p. 737).	• Participants has sufficient experience of the situation under examination to comment knowledgeably and represented a variety of relevant perspectives and characteristics (e.g., male/female; full time/part time). The study could be conducted on other broadly similar doctoral training structures as designed. • This chapter (Research Methods) sets out the details of the research design and execution and relates also to the credibility of the research. Findings in broad alignment with existing literature.
Dependability • Would similar results be obtained if replicated? • Is there enough data/description to allow another researcher to replicate the study?	• Initial coding of first two interviews reviewed with supervisor. • Emergent themes consistent with existing literature. • Emergent themes came through consistently across all interviews, suggesting a similarity in aspects of the student experience.
Confirmability • Are findings influenced by the characteristics and preferences of the researcher? • Demonstration of 'reflexivity' (Sundler *et al*., 2019, p. 737).	• Value of a professional doctorate (amongst other things) is that reflexivity is encouraged as are an awareness of the researcher's professional role and development, and their position as an insider researcher. • Related to evidence of reflexivity in the work – reflecting clearly both the work itself and the views and professional experience of the researcher in the discussion and conclusions.

*Based on Guba (1981), Krefting (1991), Lincoln and Guba, (1985) and Shenton, (2004)

5 Analysis

5.1 Introduction

This chapter will present an analysis of the interview data, organised by the key themes that emerged from the data. The research questions that guided this study are as follows:

1. From the perspective of students, how do UKRI-funded Scottish Graduate Schools (SGSs) contribute to doctoral learning and development, if at all?

2. Does participation add value to the student experience and doctoral students' learning journeys? If so, what value is added from the perspective of the student?

The table below details the participants, which SGS provides the funding, whether they are full or part-time (study load), their age group, and their year of study in their programme. To recap from the previous chapter, the first two participants were interviewed in late 2019 and the rest in 2021. They are listed in the order in which they were interviewed with 4 participants from SGSSS and 5 from SGSAH. Eight of the students were British and one was an EU student, but UK domiciled. Until the UK formally left the EU, international students (non-UK, non-EU) were rarely funded and only in areas agreed by ESRC, such as economics, so it is not surprising that in a small sample, there are no international students. EU students were funded prior to the UK leaving the EU, but on a fees-only basis (no stipend provided) and there were therefore only small numbers of these students as well. All interviewees except for Nora were based on or close to campus. She was based about 2 hours away by train.

Table 5: Participants

Pseudonym	Scottish Graduate School	Study Load	Age	Year of Study
Wynona (P1)	SGSSS	FT*	35-40	3
Thomas (P2)	SGSSS	FT	25-30	3
Scott (P3)	SGSSS	FT	25-30	3
Leila (P4)	SGSAH	PT	35-40	3
Hamish (P5)	SGSAH	FT	25-30	3

Pseudonym	Scottish Graduate School	Study Load	Age	Year of Study
Fiona (P6)	SGSAH	FT	25-30	3
Catrina (P7)	SGSSS	PT*	35-40	3
Fergus (P8)	SGSAH	FT	25-30	3
Nora (P9)	SGSAH	FT*	30-34	3

*Changed status during their programmes, table reflect their current status

The key themes and sub-themes and sub-themes from the interview data are set out below. These ideas were widespread in the data, appearing in all the interviews, and pointing strongly to the themes below.

Table 6: Themes and Sub-themes

Themes	Sub-themes
1. Community and Connection	1. Shared Workspaces
	2. Shared Experiences
2. Complexity and Bureaucracy	1. Student Experience
	2. Training Landscape

5.2 Community and Connection

5.2.1 Shared Workspaces

Shared workspaces as discussed by participants fell into three categories: (1) shared offices; (2) disciplinary campus spaces such as buildings used by a subject group or research centre; and (3) different, non-disciplinary, workspaces that were shared in some way. Beyond specific references to physical spaces, participants also articulated the role of disciplinary communities in their journeys and how their communities supported them in navigating some of the challenges of doctoral study.

5.2.1.1 Social and Professional Value of Shared Offices

Participants consistently reported that their shared office spaces on campus were important to them in several ways, socially and professionally. These themes came out quite strongly, perhaps even more strongly due to the length of time away from campus during the pandemic. Seven interviews were conducted at a time when students had largely returned to workspaces on campus, but large numbers of staff and students had not returned.

'It's kind of lonely initially, but peers have been helping me along. It's…just nicer, to be able to go into the office and like chat with somebody…you're going through the same things together. And that's, that's really good.' (Thomas, SGSSS, FT)

'I really, really feel I need to be back in an office …, surrounded by people because I think a huge amount of a PhD is about the development…from the peer learning and the peer development and the knowledge that you absorb from people. And without that… it's very different and I don't think is, is the… same quality of experience' (Scott, SGSSS, FT)

'…it's had such a huge impact on me, [having a shared office space] feeling like I have a community and being able to speak to people and ask these casual questions… about the most basic stuff… it's just been so valuable… that's made the difference between me feeling really isolated…not knowing anybody… I've got a community… some of the other folk… we set up our podcast, we did all kinds of things. We used to get pizza in the office sometimes … it …made a huge difference… I wouldn't change anything, but I would change it so that everybody else gets that….' (Leila, SGSAH, PT)

Scott and Leila felt very strongly about the positive role that their office mates played in their working lives. Scott felt that this was about the learning experience and being able to learn from others, but Leila was very focused on the aspect of having a community around her. She reported in her interview that she and her office mates did some collaborative work together, such as setting up a podcast. Arguably, different people might feel differently and not all office mates or similar will get along. However, participants felt the positive benefit of this support.

5.2.1.2 Support for Navigating the Challenges of Doctoral Study

It is also not just the sense of a shared working life that helped participants but also how their peers and colleagues were able to help to navigate challenges like negative feedback, feelings of isolation, the quite individual journey that doctoral students undertake, and how this support provides context to one's learning journey.

'…the feedback, that has been, like feedback is harsh. Like, I think now, in my third year … I'm starting to kind of be able to, almost like laugh it off and like, sit with my peers in the office and be like, I got the worst comment ever. Have you ever had this one? Whereas in first and second year, I just it just actually like came down on me like a tonne of bricks. And like I said, my supervisors have helped me,

and they have, but it's been a really tough love kind of process.' (Wynona, SGSSS, FT)

'PhDs are quite isolating anyway, because you're working on something that's unique to you and the opportunities for working and I suppose yeah opportunities for peer learning are quite limited, but then when you remove the sort of the physical element, and you put people behind the screen spread out all over the world, I think that gets amplified extensively.' (Scott, SGSSS, FT)

Doctoral students also find their own way to shared spaces or shared working practices that support them or help them to keep progressing with their work.

'There were two of us that started at the same time and we've kind of like worked in the lab together… every working day other than when we've been on holiday, and it's just having somebody that we work together, have coffee together…. that has just been absolutely central to my I don't know, coping slash doing the thing, you know…' (Fergus, SGSAH, FT)

'…we work together most days now. Although it's not really an office, it's more zoom office mates, and that's something that developed over the past few months. We kind of call together for an hour or two and just write or do research at the same time just having a chat…discussing things.' (Participant who shares supervisors with a colleague, opposite first and second supervisors, on working together during the pandemic) (Hamish, SGSAH, FT)

'There is a [faith-based group] in the in the university…. so I've been part of the community for, since the beginning of my academic career… like six years ago and I've been able to work there....it's a community …that's been very important for me, probably more over my pre-pandemic years than now...But it also is weird to count them as office mates because also just, they are firstly, friends from the community that happen to share our workspace.' (Hamish, SGSAH, FT)

Fergus articulated the sense of support from 'human interaction' and the role this can play quite nicely to support 'coping slash doing the thing'. That sense of support, both socially and as part of the learning journey, comes across as vital. Hamish was quite creative in finding his own path to workspaces and supportive community that helped him to progress, finding both a supportive social community that was also a workplace as well as a 'zoom office mate' online for some companionship during the pandemic.

This section shows just how important participants found this sense of shared working space and a sense of community to their experience as postgraduate researchers as well as how important this is to their development as researchers, how supported they feel and their overall wellbeing.

5.2.1.3 Campus Workspaces, Disciplinary Communities and 'Found' Communities

Broader than simply workspaces, communal spaces in subjects, schools or research centres and informal interactions were highlighted in several interviews.

> *'I can't really do any more [foreign language]. I've got the foundation, and you have to speak… to get any better… I was really looking forward to being in the building, because even just going up to the kitchen, and everybody in here speaks [foreign language], so you're sort of forced to speak.' (Fiona, SGSAH, FT)*

> *'Because of being based in [research centre], where the PhD students and academic staff are, it's a small building, and everyone's in and out of the kitchen, so everyone tends to know each other quite well. And then also, because of having various research assistant jobs, I would probably ask [about covid rules for interviewing face to face], I would probably … reach out to other staff as well, at this point quite a bit.' (Catrina, SGSSS, PT)*

Both Fiona and Catrina articulate here the sense of being part of their larger shared workplace and what that interaction adds for them, whether its specific skills like foreign language practice or being able to ask questions of colleagues who are not students. This further reinforces the sense that those around them support them in various ways on their learning journeys, especially within a university setting. Participants articulated the ways in which they sought out these communities or communal spaces and/or made use of them. As with the commentary about shared workspaces, this may have seemed even more precious due to periods where everyone was working away from campus during the pandemic. However, a renewed appreciation for the value of these interactions takes nothing away from their value to these students.

It was, however, also felt to be missing sometimes.

> *'But I was still kind of surprised…when I arrived, I thought there would be a bit more of a sense of… being part of something…but then … I'm part-time, so maybe other people … might not feel like that...' [speaking about the lack of community in their subject area in their school] (Leila, SGSAH, PT)*

> *'…it would be nice to have a more organised… cohort of students in Glasgow University in [subject]… maybe it's a requirement… Would that be nice? I'm not sure. Maybe, maybe that could be good … there's been no occasion to meet with the rest of the cohort….' (Hamish, SGSAH, FT)*

Participants seemed to crave some level of community around them, missing it when it was not there and being grateful for it when it was. The sense of isolation (Levecque *et al*., 2017; Mantai, 2019) that can be common amongst doctoral students conducting individual and independent research projects was noted on only one occasion explicitly in the interviews. This sense of not being isolated as they had some sort of community around them or some sort of social support to rely on was noted by all participants. It is impossible to know what other students who are not part of the SGSs would say although presumably, it would be similarly mixed, with some students easily finding their tribe around them (Becher and Trowler, 2001) and others struggling or taking creative approaches to find a support network.

Leila also notes that her status as a part-time student may impact this. She was the only student in this study who had started and remained as a part-time student and felt that this set her apart somewhat in her subject/school. However, nonetheless, she found her community in her shared office space and in meeting other students through the SGSAH. Deem and Brehony (2000) highlight that some student groups, particularly part-time and international students, can have a more difficult time than full-time or home students in accessing local research cultures. This fits with Leila's perception that something was lacking in the environment as a gap she needed to fill.

Three participants highlighted the value of being in a workplace where they were able to interact with the entire department, particularly in casual contexts, enabling them to feel part of the academic workplace as well as pick up information or ideas informally.

Depending on the size and structure of the school or subject, assigned workspaces may not be available at all or may be spread across different buildings. However, four participants highlighted their subject, research centre or school area as a source of community. Casual interactions in communal spaces were a source of learning as well as camaraderie.

> *'And the loss of the loss of the peer network [during the pandemic] as well, like being based in office or a building with, you know, a few other people who are working on similar things, and who you can talk to. You can turn round and talk to someone about a paper you've read or about, you know, what the annual progress review process involves, or even just standing in the kitchen talking to the lecturers who work upstairs, and you pick up things about what teaching they're doing, and about how grant applications work, or other sort of useful stuff that you can sort of absorb. I think losing that has been really difficult, because that sort of like interaction was a big part of experience for the first six months, and gives you a sense of like what you're working towards' (Scott, SGSSS, FT)*

> *'I definitely feel more involved in this community around the subject rather than the Scottish Graduate School, I think I've definitely had more from like my advisors and colleagues in [subject group] and the wider [school] here, than I have from the Scottish Graduate School. Not that you wouldn't expect that obviously, it's not necessarily a negative thing. And but yeah, there definitely is quite a good community and network throughout the [subject] for sure. '(Fiona, SGSAH, FT)*

It is interesting to note, however, the contrasting experiences. Scott really missed 'absorbing' information about his doctoral journey and academic life. Fiona felt that her key support was in her subject area but that this was entirely fine and to be expected. Fergus, however, coming from a discipline described as a bit in between the Arts and the Social Sciences felt that meeting people through the SGS had been the 'quality thing' as their local disciplinary community was less well-defined. It demonstrates perhaps the variety of experiences that postgraduate researchers have within the university, with that community and support around them or not, but also that where it does not exist, the SGSs might serve to fill in at least some of the gaps.

5.2.2 Shared Experiences

The SGSs, due to their distributed nature across institutions, cannot provide office space or easily replicate the informal interactions in a campus environment. They do not have much in the

way of physical student spaces other than some meeting and training spaces. They both do, however, provide virtual spaces although notably the participants did not reference these. However, they do provide opportunities for students to work and learn together in different ways.

> *'…the Hub festival… it was mostly business and economics …. two days and an overnight I think, and that was really nice… in terms of the balance between cohort, cohort building, in terms of everyone was very friendly, and we went to the pub afterwards …there would be socialising as well as the training…. it could have been probably more subject-specific …even though it was the only one I've been to where it was quite subject-specific…that wasn't the reason why I enjoyed it so much, right' (Wynona, SGSSS, FT)*

> *'… you're meeting other people who have … worked in the [sector] … you're sharing sort of that experience… So, you can get those opportunities to moan, complain, therapy, even gossip. … at certain points and when you're doing solo working to have those meeting points is absolutely, is really useful.' [students based at a distance but part of a cohort within a cohort] (Nora, SGSAH, FT)*

As Nora noted in that final quote, many students come to postgraduate study with work experience either in the subject area or in an associated sector. Being able to share those experiences, from either inside or outside of the university, helps form bonds and enhances the feeling of shared experience. Wynona shared how much she liked an event that she attended because it was a mix of training and social activity. Scott commented as well that meeting a broader range of people to 'work and learn together in different ways' was something he found valuable. Arguably, this is a key strength of the SGSs to add these additional opportunities and what these bring to the experience of postgraduate researchers, bringing people together to 'work and learn together in different ways.' It is worth noting however that overall, this was discussed less by participants than the value to them of the people around them in local, institutional shared working spaces.

5.2.2.1 Sense of cohort

Participants were asked about the support they felt they had from institutional and SGS structures. Some of these interactions were formal and some were less so; some were good, some

were less so; some were supportive socially and led to a feeling of being part of a cohort and some were simply frustrating. The sense of being part of a cohort in this context is contested as the SGSs form quite large groups of students, potentially making the creation of a cohesive group of students challenging (Basom and Yerkes, 2001).

Several participants reported largely positive experiences:

> *'They set up a few like cohort building exercises… they were… quite fun…quite a good opportunity … gets you out gets you meeting other people …sometimes from my own institution, sometimes from other institutions … have proved to be like, very interesting colleagues and like, friends, and yeah, we've kind of networked and it's been good…. maybe future collaborators….' (Thomas, SGSSS, FT)*

> *'SGSAH feel like they do actually have a commitment to try to build links between researchers and in particular as a part-timer, I think it's, it's been really good ... I really like got to know a lot of people … that I've then kept in touch with … and it has created a kind of peer group that I don't have through other things…'' (Leila, SGSAH, PT)*

> *'I have really enjoyed being part of SGSAH. But the reasons that I've enjoyed it have been largely because they've put me in touch with… the cohort itself. So, meeting new people who are also doing a PhD at the same level, and then coming back into touch with them….' (Fergus, SGSAH, FT)*

However, several participants reported frustrations with the large size of the cohorts and did not see the overarching SGS structures as providing cohort or community. One noted that they experienced several challenges during their programme and that what they perceived as a lack of appropriate support was surprising and disappointing.

> *'Actually, I think cohort is probably the wrong word to describe it because that implies that there should be a degree of sort of social activity and a degree of sort of community, which you're never going to get across… 20 institutions and a wide range of subjects because any event you go to, you're going to be with different groups of people. So, there's not really going to be any kind of community building there. So perhaps, yeah, perhaps they're setting themselves up for a fall there by making it sort of making it sound like they're aiming for too much' (Scott, SGSSS, FT)*

> *'… it's in some ways it's [the PhD experience] met my expectations. In terms of like the job opportunities that I've got… the career development opportunities that I've had, the amount I've learned, the support I've had from my supervisor…But yeah, the support from the ESRC, the SGSSS is just like really, really fallen short of what I would have expected.' (Catrina, SGSSS, PT)*

> *'Though, to what extent do I feel any kind of like belonging or membership with this wider cohort, other than the Friday email updates I get from them? I don't really to be honest. It creates kind of another umbrella, umbrella organisation, alongside university or college or school or subject area, you know, ESRC, you know, collaborative partner, all these other things. It's one of those but I do, I do think there's, there's potential there for it to be a bit stronger.' (Scott, SGSSS, FT)*

Contrasting comments like these suggest that the cohort-type approach taken by large entities such as the SGSs is not uniformly positive for participants or experienced in the same way. This may be due to having expectations that were not met or not always feeling a connection due to the large size of the group of students supported. This suggests that even within individual journeys, experiences and expectations can vary and that there is a difference between appreciating aspects of the experience and feeling connected to the group as part of one's own community. What to expect is probably never clearly articulated either to students at the University or to SGS students.

5.2.2.2 Role of Personal Engagement with the Cohort

Participants also articulated that their own level of engagement with one of the SGSs made a difference to their experiences.

> *'… there's been something which, reflecting on it, has been interesting and helpful… that is a chance to meet other students from the Scotland cohort, some from Glasgow, not just other [subject].... But I must say it never, never developed into a relationship, right? I think if I had wanted and put more effort in, I could have built more connections with people.... it does bring everybody together…a couple or three times a year. And then summer school is just a big, big event where you can meet people at seminars but there's not much of a chance to go beyond that...' (Hamish, SGSAH, FT)*

> *'I mean, I see this as kind of the downside is also one of the good things about it, is that having to go to the mandatory training, or the mandatory events, which have both been, you know, at one point feels like, oh, no, I've got to go somewhere and do this thing. But then it's just been overwhelmingly positive, you*

> *know, meeting my colleagues again, and kind of building these relationships, etc. '(Fergus, SGSAH, FT)*

There are challenges associated with a large group of students who are geographically dispersed and the connection that students may or may not feel to each other or an SGS. The contrasting views provided by Hamish and Fergus highlight this effectively – for Hamish, he knew that might have gotten more out if he had put more in, but he generally enjoyed the interactions; conversely, for Fergus, he felt that the compulsion to attend was a 'downside' but that in the end, it was an 'overwhelmingly positive' experience.

This may also reflect that different students have different needs for support and community and find what they want in different places, in different ways and/or in different group sizes or shapes. It could also be suggested that there is a proactivity required of students to achieve the most benefit from their experiences - where students engage with a wider range of opportunities on offer, they generally benefit from the broader range of experiences (even where they admit they forced themselves to engage). The extent to which community in some ways coalesces around each student or that each student actively looks for their community is unclear from the data but there is a variability that suggests that students who make the effort to engage reap positive benefits. Mantai (2019) suggests that a supportive culture can engender this engagement but that a range of factors (e.g., commitments external to their doctoral work) can affect this. Bowden *et al*. (2021) highlight the interdependence of factors when assessing student engagement. Indeed, they highlight four dimensions on which they suggest measuring student engagement (affective, social, cognitive, and behavioural engagement) (p.1207) and that these form an 'invisible tapestry' (p. 1218) of engagement. Further, they stress that expectations are one of the antecedents to engagement – the other antecedent being termed as involvement, which is related to motivation.

5.2.3 Community and Connection Conclusions

The sense of shared experience, of not being alone, was a very important feeling for several participants, contributing to a positive experience. The loss of this experience due to the pandemic was challenging although some were able to adapt or find ways to maintain a sense of community for themselves. Serendipitous moments where ideas, leading to outputs such as a podcast mentioned by one participant, are shared or knowledge about broader research contexts are informally absorbed all contribute to a sense of professional development.

Four participants benefited from shared office spaces and noted the positive value of these. They pointed to a sense of being part of a community and/or shared experience as well as peer support as being key reasons for this positive view. Being able to easily discuss issues or questions and share information quickly was of benefit to students as well as being able to share and learn things of unexpected value and interest, such as ideas or insights from those using different research methods or who may have more experience in particular disciplines. This support was reported as being mainly due to proximity and the allocation of workspaces is a practical matter rather than planned - not all students have an office space and when they do have one, it is often a random assignment.

Shared offices or working spaces create community for these students and through that community, learning happened informally, creativity and collaboration emerged, and colleagues informally shared information, provided support to each other, or even just felt some comfort that their experience was shared, rather than exceptional. Both Wynona and Thomas, interviewed prior to the pandemic, discussed adverse circumstances that they had endured during their programmes and how helpful the support of peers in these workspaces was to them so there is some evidence that this is not simply a post-pandemic phenomenon.

The doctoral journey is a complex journey, where students are not just learning to become researchers but also developing a wide range of academic and professional skills. Having the support of others to ask casual questions and learn through informal interactions was clear for all participants. However, they also valued the shared experiences and sense of cohort although this experience was more variable. This does demonstrate, however, that the SGSs play an overall positive role in a complex landscape even if the experience of what they offer or require is not uniformly positive from the perspective of the participants.

One thing that was clear from the participants was the role of community in their learning journeys and how they articulated learning from peers and others around them, using words like 'absorbing' and reporting the informal nature of the discussions and conversations that helped them on their learning journeys. Experiences can help to create some community through shared participation, but they also may not have a role in developing a supportive community. Indeed communities can engender conflict or be unsupportive (McAlpine *et al*., 2012). This also serves to highlight that the PGR journey is highly individual, and participants reported positive experiences related to their need for community being met. As illustrated in Figure 1, the learning journey at the heart of the doctoral experience is found in a dynamic space between the individual and the communities in which they participate.

5.3 Complexity and Bureaucracy

Complexity is a concept that emerged in numerous ways throughout the data, particularly in discussions about bureaucracy, challenges, and institutional and extra-institutional structures and requirements. Large organisations like universities are complex and inevitably create bureaucracy in order to operate. The University of Glasgow has a layered structure with schools made up of subjects and/or research centres, and colleges made up of schools or institutes - all supported by college graduate schools. Further complexity is added by a range of central services which support students in different ways. Even more complexity is added by the additional layer of the SGSs as an actor in

the student experience. It is not that any one layer is particularly or consistently problematic; more that there are so many layers and that this can result in confusion or overlapping requirements or messages. That said, complexity also brings variety and opportunity so should not be seen as inherently negative. What participants see as negative is as much how the complexity is, or is not managed, as much or more so than the complexity itself.

5.3.1 Student Experience

The student experience as a concept is perhaps a tricky thing to define or assess. It is often assessed in terms of a student having a positive or negative experience, being engaged, having one's expectations met, or in achieving some defined aspect of success (Bowden *et al*., 2021). Student engagement is often used interchangeably with the idea of the student experience but has a more active connotation. This section will discuss how participants reflected on how complexity and bureaucracy affected aspects of their student experience. It is useful to highlight that many of the negative reflections here relate to instances where students perceived a lack of agency, i.e. felt powerless, that things were done to them, or where they suffered from rules or processes that were misapplied or did not exist where they could have been supportive. Students also highlight where they pushed themselves or were pushed by requirements to engage with development opportunities and ultimately benefited from them.

5.3.1.1 Bureaucracy

Processes and procedures are described variously by interviewees as impersonal, slow, and lacking in flexibility and/or clarity. This starts from the application process to enter the programme and is a factor throughout the doctoral journey. These issues can exist at any level or within any organisational or extra-organisational structure, and challenges with institutional and SGS processes and procedures are highlighted below.

5.3.1.1.1 Institutional Processes and Procedures

In the quotes below, these were university issues – in particular, a supervisor relationship breakdown that was slow to be resolved from Thomas' perspective and a case of financial hardship in Catrina's case that university rules around graduate teaching work made hard to resolve. Thomas comments below that it is not uncommon to change supervisors. While this does happen due to both practical matters, such as a supervisor leaving the institution, or interpersonal issues, it is probably not exactly common either. However, there should be processes in place to support this and it seems that on this occasion, they did not operate effectively from his perspective.

> *'… the main thing was the process, which is so slow, like, for me actually expressing, wanting to change supervisor to getting a new supervisor in place, it was so slow, like, they have to do something to streamline that, because it's not uncommon for people to change supervisors.' (Thomas, SGSSS, FT)*

> *'I wouldn't say I enjoyed it necessarily. I found it quite frustrating because of the way the programme was structured…parts of it were quite repetitive on the MSc that I just did, there was a mix of research training, which was different and was useful. … and I think it was a bit of a strangely structured programme, but there was only one other person on it in the entire subject area. And it was obviously it kind of felt like it had been put together to satisfy the requirement to have a master's for a one plus three programme to an extent. So, I kind of felt like I was in purgatory for a year with it, waiting to move on to the PhD.' (Scott, SGSSS, FT, speaking of an MRes year)*

> *'…the other annoying thing…was the university bureaucracy. So, I asked at the time if I could take on teaching work, I asked if I could suspend my PhD and just do teaching work part-time, they said, no, that's not allowed. you are not registered as a student; you can't carry on teaching. So, there was just not, there was just no kind of solution.' (Catrina, SGSSS, PT)*

Thomas noted that in his case, he also reached out to SGSSS but that they were unable to assist. It was not clear from his recounting of the episode whether this was something they did not want to engage in as it was not in their remit or whether their own processes were also slow, such that it was resolved ultimately by the University. In Scott's case, the MRes year is often a requirement of the SGSSS when it is felt that any prior academic work, including master's degrees not focused on research, had insufficient research training or methods content. It is not uncommon

in this case for there to be an insistence that a student complete a master's degree about research (MRes). However, as Scott noted, this felt like a delay and at the University level was not a well-structured programme in his view. His description of this as purgatory suggests how he felt about it – that it was more to be endured to meet a requirement, and which held him back rather than something beneficial. In Scott's and Catrina's cases, it would be useful to note that the student perception of rules or requirements is not always the full picture and indeed they may look back on an experience to realise it was more beneficial than they may have thought.

5.3.1.1.2 SGS Processes and Procedures

Wynona recounts below a stressful situation due to an inflexible process and Catrina an issue where she would have benefitted from more support, in particular sick pay.

> *'So, when I signed up for my PhD, I went part-time… because I'd already done a year, I was given the thumbs up on the basis that I had to go back and do two modules, because I had a taught master's…. it was really, really difficult, because that was the year I was doing the teaching. And I asked if the ESRC would let me wait and do just one module, and then maybe do the next one the next year, but they wanted all the training front-loaded as they call it…. So, I ended up in a position where I was doing my PhD full time … doing full-time teaching, and then two modules, which was A LOT. it was a lot. That was like my nightmare year.' (Wynona, SGSSS, FT)*

> *' … I think at that point, I became quite cynical about the whole thing … it was just, it was just a period of time when I just couldn't work…. It had been incredibly stressful, and I really do feel pretty let down by how little support there was for me. Because I just wasn't expecting that. I just came from a job where I would have had sick pay and everything. And just to come into a situation where I just yeah, I didn't read the fine print, I didn't realise there wasn't going to be any, any provision for that.' (Catrina, SGSSS, PT)*

It is worth noting that in Catrina's case, sick pay should have been available so either her perception of the situation, how it was handled by the university, or how it was explained to her created some kind of misunderstanding. Possibly as well, the sick pay available may simply not have been enough for her needs. Both episodes, however, point to inflexibility in processes as well as an insistence on meeting requirements or following rules to the detriment of the student, especially

where students may be in quite challenging circumstances and/or require more personalised support. This further highlights the individual journey of students – their support needs are as variable as their training needs.

5.3.1.1.3 Supporting Collaboration

The quotes below note other stories of frustrating episodes where students expected more from one of the SGSs.

> *'… one frustration that I've had…of trying to get something specific from SGSSS … I'm on this collaborative studentship…. I didn't, I didn't have any experience of anything like this, neither did my supervisor. As it turns out, neither did anyone else in SGSSS, because we went around the houses trying to find anyone who would be able to give us a bit more detail on what was expected. Because the collaborative partner had certain expectations, which I felt and my supervisor agreed, were a bit off the mark. …. The only thing we got was that it's a fairly new studentship model and that it's up to you to work out what works for you. And that was quite frustrating. Because that was, I felt something that was clearly within the remit of SGSSS that wasn't really being met.' (Scott, SGSSS, FT)*

Nora was originally part of a smaller cohort with the SGSAH that related to a particular stream of work that supported several collaborative studentships. This was something she relished and had a lot to do with her choosing this programme. However, as she notes, when there was a personnel change or other internal change, this smaller cohort was deprioritised.

> *'…but I just think it was a shame that this is the thing that was dropped… like it just needed one person's attachment to it… we were all collaborative doctoral partnerships, so we needed to learn from each other. We need to learn how these collaborations work and what they feed in more widely to… it's a real shame…particularly when most of us were engaged with small to medium size organisations and I think we could have made a lot more impact….' (Nora, SGSAH, FT)*

Nora recounted this episode in more detail in her interview and was clear in her disappointment that her cohort group had been deprioritised, that students were not informed as to the reasoning for this change and thus felt that the shift was confusing and unnecessary.

5.3.1.1.4 Lack of Clarity and Flexibility

As noted above, University structures and operations, and SGS operations, are complex at the best of times. Students struggle to understand how the various entities fit together or what each of them is for in relation to their experience.

> *'…you feel like you're part of a big machine. … you don't have your like, key worker…like a contact… that's just for you, that's checking my going on.' (Wynona, SGSSS, FT)*

> *'I think broadly speaking, they probably [SGSSS] meet what it's aiming to do quite well, right, in terms of training workshops, and the range of things it offers and the quality of them… it's quite just quite confusing at times trying to work out what's supposed to happen where even…at this point in my studentship, I'm still not sure…there's still sort of like a degree of confusion about, you know, where do I go for questions about funding, where do I go for things about training, where do I go things about collaborative studentship, etc, etc. So perhaps there's a broader point there about, like how everything fits together.' (Scott, SGSSS, FT)*

> *'So, it's not, I'm not completely oblivious to why they exist. I just feel perhaps they have less to do with it because I'm not in Glasgow. I think if I was in Glasgow and I had a working space in Glasgow, I'd feel a lot more connected to this, what the college does and what the school does. And I actually right now, other than it being a group as a way to group certain subjects together. I don't know what it does.' speaking about their School at Glasgow (Nora, SGSAH, FT)*

These comments reflect the complexity of both the University and the SGSs and in how these entities work together from the student perspective. Nora, in particular, as a distance learning student who is not located in Glasgow, feels disconnected from her school in the university but acknowledges that her inability to be physically present in Glasgow may compound this. Wynona's comment is important as she suggests that there should be, or at least that she would benefit from, more personalised support or advocacy, like a 'key worker'.

Requirements come with a responsibility to complete them or adhere to them. However, students come up against scenarios where they do not fit a so-called 'normal' pattern or journey or the timing is not right, but requirements seem inflexible.

> *'…. I do feel it could have been much more flexible. I just think it was just like we front load training, so you do this. There was no consideration of practice, teaching, the fact that I'm a parent, the fact that whatever, that I hadn't done statistics for ten years.' (Wynona, SGSSS, FT)*

> *'…because I've not had like a very traditional pathway into my doctoral programme, I found it a bit confusing. So, they have like their lists of mandatory training courses that you have to do but then I didn't quite fit into the level … so I just did my introduction or starting off on your PhD. I only managed to do that last year but actually I'd been part-time since the year before … I had to go back as if I was just starting, and it was just the tick the box exercise I just had to do and I understand that. But … it does seem a bit disjointed. And I'm not really sure what I'm expected to do this year… it just doesn't seem very clear.' (Fiona, SGSAH, FT)*

Both Wynona and Fiona recount ways that they did not fit into a typical journey for students. This underscores the lack of flexibility, the individuality of the doctoral journey, and the challenges of applying one-size-fits-all structures and processes to these journeys. For Wynona, this was a particularly stressful experience, in part due to her external circumstances which were not accounted for. Fiona describes this as 'disjointed' and recounts this as needing to tick boxes rather than there being any assessment of whether the requirements were of value to her and indeed lacked a sense of what was still required of her.

Students are often unclear about how to explore their options or what those options are, and busy university staff may not have the flexibility to allow for divergence from normal processes or the capacity, or latitude, to find alternatives for individuals. While students might benefit from more individualised support, the number of students makes this almost impossible to provide. The individualised support that students do get is from their supervisors, but this is in a very different capacity, providing academic support, rather than working through bureaucratic challenges. This does not suggest that supervisors would not or do not attempt to assist students with these matters but rather that they must largely work within the same structures and rules as their students.

5.3.1.2 Student Experience Conclusions

From these comments, it seems that institutional structures may be designed or implemented to suit a set of needs or ideas (such as how one conceives of disciplinary boundaries, or how funding is organised or delivered) and promote particular outcomes but not necessarily have a focus on the users of the services provided and their needs. Requirements are described as being imposed without considering how they will be implemented or supported in terms of their delivery. Funder rules and SGS rules are set at quite a high level. Terms and conditions are published and then further interpreted by individuals who make strategic and operational decisions. This is then layered onto university regulations and operations.

Priorities can also change for institutions, which may also affect their structures or operations, in ways that are confusing to students. As institutions and entities such as SGSs respond to internal and external drivers, such as changes in government policy, funding priorities or even personnel changes, it can seem like positive things are put in place and then are dropped and/or replaced, often with something perceived as less good or having lost the trust or goodwill of the students.

Participants noted times when they had been forced to do training at a particular time by one of the SGSs to tick a box that it was done even if this was outside of a time where it would have been useful or was otherwise conflicting with other elements of the doctoral journey. This suggests a lack of empowerment for staff at either universities or SGSs to effectively make allowances for individuals or to bend or shape the regulations or process to suit student needs. Participants also noted that they often missed important details or failed to understand key policies, such as the availability of sick pay to students, leading to stress and frustration. Further, the reported lack of consideration for individual journeys and personal characteristics, such as being part-time or being a parent, was noted to be very challenging for students to navigate.

It would be easy to see this as entirely negative but, as some students noted, information was made available to them, and staff are in place who can assist them either at different levels of the university or within the SGSs This may be another aspect of the student journey that would benefit from additional engagement from students to advocate for themselves, expectation management from institutions or SGSs or for institutions or SGSs to not assume that students are enabled or empowered to do this. It also perhaps suggests that students with more complex needs for training and support, who do not fit into the one-size-fits-all approach, may tend to struggle more with the complexity of the landscape and in having their needs met.

5.3.2 Training and Development Landscape

Participants readily discussed training courses/development opportunities in a range of contexts, positive and negative, reflecting their highly individual responses to and relationships with various development programmes, opportunities, and initiatives. All PGRs undertake training and development of different kinds during their programmes related to personal or professional skills and research methods. Some of this is offered locally by subjects or schools, by the college graduate schools, by various university services, through the SGSs, or through other external entities. Much of the discussion in this section was about training courses specifically and thus 'training' is often used to discuss their responses rather than the broader term 'development'. The training referred to was also often related to research methods rather than broader personal or professional development.

All participants discussed the relevance of the training they attended, the positive experiences, the value they felt they received, and the challenges and complexities they experienced in undertaking training either at either the university or one of the SGSs How individuals felt about these experiences varied as some were frustrated by the complexity and bureaucracy while others simply acknowledged it as part of the experience of a complex landscape which they generally valued despite any challenges. Some also reported significant benefits to the training they undertook

in either providing the kind of social or community support detailed in the previous section or in learning things that transformed their thinking about their work.

5.3.2.1 Delivery Challenges

Delivering training programmes at scale and to fit a range of purposes and students in different disciplines appears as a challenging endeavour from the student perspective. Different entities have different requirements and some of this is repetitive.

5.3.2.1.1 Repetition and organisation

Participants described a range of experiences, including where the training they needed was by the 'other' SGS and therefore less accessible to them.

> *'Would I necessarily engage with it more if there was … a more regular meeting to go to based on my pathway? I don't know I might do…it's difficult because there's so many of these spaces where things happen… in SGSSS, things happen in the college, things happen in the school, things happen in the subject area, you can end up, you end up doing the same things about 10 different times and having the same conversation about 10 different times. So, there's a question about … the appropriate scale at which these things happen, maybe.' (Scott, SGSSS, FT)*

> *'I found the catalyst events really not good. And then the summer school events that they have on, are also just quite confused.… the programme was good, but then you would have the event, right, and everything clashed, and you had a million different links… there didn't really seem to be a thread running through it.… I wouldn't be like completely chomping at the bit to sign up for another of these sort of training events. If I could get away with not doing it, I would probably not at this stage.' (Fiona, SGSAH, FT)*

> *'I have to say, a lot of what I've done has been self-taught. Other than that, it's been within my lab, training that's been offered by the staff within the lab. So sometimes… courses that are offered by SGSSS might be more appropriate, or, or ones that are offered by … the College of Social Sciences are sometimes it's more appropriate. …. But…I'm not kept in the loop about that. I only find out about those things when my… colleague gets emails and then tells me what's going on….' (Speaking as an SGSAH-funded student) (Fergus, SGSAH, PT)*

Scott and Fiona sum the issues up nicely with Scott highlighting the repetition in the landscape but having to endure this to meet requirements and Fiona highlighting the challenges in running a

sizable programme of training and communicating effectively. Fergus' comments are interesting as he notes that he has learned what he has learned in a largely 'self-taught' way or from those around him, linking back to earlier discussion in this chapter on local and peer support. However, in a previous section, he also described how much he liked interacting with the cohort. This suggests something of a separation between the instrumental value of training (needing to learn something specific) and the social value of training (opportunities to interact with peers).

5.3.2.1.2 Bureaucracy and Record-keeping

The record-keeping required to track training is described as less than straightforward by several participants.

> *'Yeah, I don't I don't know if the ones that I did last year were recorded anywhere. I never got confirmation that it was going to be put onto any sort of record, or if it just automatically did…there isn't like an end of year [report], apart from your APR [Annual Progress Review] …, or maybe there is, and I haven't been doing it … And so, it says mandatory and then I'm not really sure yet how it's mandatory.' (Fiona, SGSAH, FT)*

> *'… SGSSS … feels to me like quite a big bureaucracy, and there's a lot of paperwork and things like that, that you have to fill in. But it's like, where does that go? …I've said the same thing every single time, this is my training need and there's never anything …or they always have one session on archives…it's about like visiting an archive. And it's like, no … it's about using [subject] methods … it just feels like why am I filling in all of these things, when it doesn't, there's no feedback from any of it?' (Catrina, SGSSS, PT)*

As Fiona and Catrina describe above, they are not sure how the record-keeping happens, what it is for, or if information is collected, what happens to it. They also highlight that when they provide feedback about additional training needs, these are seemingly not addressed. This might suggest that they assume that different entities are more joined up than they really are. This, however, further highlights the challenges of running large training programmes across multiple institutions and the challenges of communicating this effectively. It also further highlights the complexity of the landscape in which training takes place.

5.3.2.1.3 Multiple possible sources for training

Some students, however, found it positive that there were different providers of training and that these were meeting different training needs.

> *'I have had some good training as well in terms of like actual things to take away … more kind of in the wider kind of understanding of like how the whole system works, like some of the summer school trainings … that have been really beneficial, and I haven't really been able to pick up here [university] so much.' (Wynona, SGSSS, FT)*

> *'…most of my interaction with them [university graduate school] has been training. So, if I'm getting this, right, they run the sort of the university research training courses that I've been involved in, so stuff like the research integrity training, and some other things on data management, all the compulsory ones, … sort of research skills and academic skills…. And I think that that accompanies SGSSS stuff quite nicely.' (Scott, SGSSS, FT)*

Catrina found what she needed elsewhere, but nonetheless was able to meet her training needs.

> *'So, to be honest, the main things that I accessed in terms of training, networking, things like that, that's been through a [research centre], which is… the collaboration between [several HEIs].' (Catrina, SGSSS, PT)*

It is unlikely that any training course would be viewed as universally positive and, as discussed here, students have different needs and come with different backgrounds and prior experiences. However, the level of frustration that some of the participants reported was palpable. The benefits of being able to find a wide variety of training to meet a wide variety of needs were, for several participants, offset by the frustrations of attending compulsory training where it is not valued, difficulties with recording and reporting training to meet or understand requirements or a lack of being able to provide feedback that is acted upon.

5.3.2.1.4 Variable quality and level of training

Quality in this context is highly subjective and is reported by participants based on their personal experiences. As noted previously, training is offered by more than one entity, none of which seemed to be perceived as uniformly good or bad by the participants. Participants reported both

positive and negative experiences; time wasted as well as exposure to new methods or ideas that were transformative; but also, a tendency to feel training was at a more basic level where they might have preferred something more advanced. There are again also individual differences as to whether university or SGS was preferred with participants noting issues with both.

> *'…it's been a mixture of whether I think the training has been that beneficial, depends on …what I've chosen to go to. And sometimes it's because it's obviously, across all social sciences, sometimes it's more relevant than others… it depends on whether you get someone from a [subject] background, doing the training then it's really relevant, or, you know, sometimes things are transferable from other disciplines.' (Wynona, SGSSS, FT)*
>
> *'And then you go to a few trainings, you know, yourself, like you've been to trainings where you're kind of like, I could have ran that training, and you know, you go to something quite basic, or where they just assume a very baseline level of knowledge.' (Leila, SGSAH, PT)*
>
> *''… the external things that SGSAH push you to do have been very helpful. The internal things, some are hit and miss, sometimes they have been nice, sometimes it's been totally wasted time' (Hamish, SGSAH, FT)*
>
> *'I think overall, until very recently, I had quite a negative perception of SGSAH, and I found quite a lot of their events and workshops and things quite confusing, or just a bit convoluted … I've been to a few of like the [subject] catalysts and events and things that I found I just found unhelpful, like quite patronising and a bit of a waste of time. And I don't mean to say that in an ungrateful way. Because obviously, I'm very grateful for the funding.' (Fiona, SGSAH, FT)*

By contrast, Fiona found other training quite useful:

> *'And there was a workshop on peer review. Last semester that I found, I found that really useful. And just the mechanics of peer review, I've never done it. So, it's interesting to find out about and they had some really good speakers on. And so that was definitely interesting. I definitely benefited from that workshop. And because that is something that's very specialised.' (Fiona, SGSAH, FT)*

One final quote highlights a further interesting issue. Even in this sample of 9 participants, 6 mentioned previous work experience. Training, and arguably much of the PGR experience, does often seem to assume no prior knowledge or only a basic level of knowledge and as well as a need to deliver skills (Craswell, 2007; Cumming, 2010; Crossouard, 2013) to training participants but does

not, or perhaps is not able at the larger scale on which training is delivered, to take into account the complexities of the journeys that students have undertaken prior to their doctoral journeys and the experience that they bring with them. Billett (2003) suggests that to understand learning in social situations, it is necessary to consider how individuals' historical and cultural life histories interact with their day-to-day situational learning experiences and how these different aspects inform one another. It is not clear the extent to which tailored training opportunities would be possible for large numbers of students and the potential variety of their needs. It does, however, suggest that perhaps more flexible approaches might be more useful than a one-size-fits-all approach.

> *'And I do think I spoke about that in one of my APRs. I felt that a lot of the training was geared towards individuals who hadn't been out in the working world, but actually most of them that I was meeting had, so it wasn't quite matching up.' (Nora, SGSAH, FT)*

Within this commentary about different levels of quality, there is a thread about the level of the training. There were several comments by the participants about some training being too basic or too broad. Participants noted that they went to training in some cases because they had to but that it was not always a good use of their time. Conversely, however, sometimes it was. It is difficult in such a broad construction such as a social science or arts and humanities graduate school (either university graduate school or SGS) to provide such a broad range of training which also suits everyone's needs. While it is clear that there are also more advanced or more specific opportunities, these are not always accessible to everyone at the right time or in the right place.

5.3.2.2 Beyond Personal and Professional Development

Participants articulated a range of development opportunities beyond training courses as helpful to them on their journey. Indeed, these opportunities, such as research assistant work that provides a different perspective and potentially changes the relationship with your doctoral work, are portrayed as important parts of their journeys.

'…I do find it really useful to have something else to focus on….It sounds silly, but you have too much time to think about all of the things you've got to do and all of the difficulties of the PhD. I think it's having a day or two a week of doing something else is really healthy, I find it like helps concentrate my mind quite well.' (speaking about research assistant work) (Scott, SGSSS, FT)

' I had a chance to…learn some programming languages over the course of my PhD. And it's been…really fun, and something new I didn't expect that I would do … And now I'm learning some Python…And I sort of discovered…through my work, yeah, things that I didn't expect to discover, which is very, very nice.' (Hamish, SGSAH, FT)

'… my supervisor and our boss… what's made the difference is that there's been people in my circle who have created jobs that I've been able to do, that's… enabled me to financially like continue. If they hadn't done that, then I would have just had to leave because there's no way there would have been the money to complete it not with all … the time that I lost to the various things. So that's really what's made the difference. So, I just feel really fortunate.' (Catrina, SGSSS, PT)

As Catrina's final quote highlights, it is not just about the opportunities for research assistant work but also the very real financial lifeline that accompanies student employment opportunities.

5.3.2.3 Role of supervisors

Supervisors were mentioned frequently by participants as a key part of their journeys. All highlighted that they were key supporters and positive elements in their doctoral journeys. There was one participant who had a negative supervisory relationship that was subsequently rectified with a positive outcome. Others noted that they relied on their supervisors for a range of professional skills, connections, and support.

'…my current supervisor, who was advising me through that difficult period [when they were requesting a change of supervisor], helped a substantial amount and probably the most, I think, just like just trying to reassure me and just sort of setting little goals for me with stuff to be getting on with, you know, just doing that job as a supervisor, really' (Thomas, SGSSS, FT)

'My supervisor and I have also been writing a paper together that we've just had accepted in a journal…. probably we've ended up meeting and working together more on those two things that we have in supervision meetings over the last year… And I've learned quite a lot from him. And not just during the PhD, but in terms of like how research works, and how to write papers, how to communicate

> *with an academic audience, that sort of thing. So definitely, in professional academic terms, I think that relationship has been the key one.' (Scott, SGSSS, FT)*
>
> *''Yeah, it's been more helpful for the extra academic things, but not directly research, more how to, yeah, how to present it, how to, how to, you know, market it outside of just research, right? How to do that, knowledge exchange in a different way. So, in essence, have been very helpful, but also quite non-traditional, which is helpful, right? ….' (Hamish, SGSAH, FT) [speaking about second supervisor]*

Several participants did not discuss their supervisors until prompted but were then surprised that they had not mentioned them considering the importance of their role to the doctoral experience. This could be linked to the level of broader community support and connection felt by students, i.e. where they were less connected the supervisor had more prominence in their experiences.

Participants discussed the ways that the development opportunities beyond training gave them a way of seeing their projects or their outside work as parts of a larger whole, as refreshing, and ways of engaging deeply with resources and scholarship in their fields that their doctoral study was not providing. They tended to highlight that this is often due to supervisors or their connections or support within schools in the university. None of the participants had done an internship to date in their journeys but three of them did mention that it was something they were planning to do or might do. It might be expected that internships might provide similar benefits to university employment.

5.3.2.4 Research methods

'Training' is discussed in broad terms throughout this chapter. However, as noted above, there are two main types of training discussed here, i.e. training related to personal and professional skills and training related to research methods and the conduct of research. In university settings, the former is often offered by several different entities, local to the academic unit or from central university operations. The latter, however, is offered in academic settings and generally locally, at

subject, school or Graduate School level depending on local structures. The SGSs also offer both types of training but focus heavily on training in different research methods, e.g. through a shared 'spring into methods' multi-day series of workshops, and summer schools that focus on methods training. Despite both SGSs being very broadly based across a wide range of disciplines, this is a key offering for each to deliver training related to research methods.

Three participants noted how important, and in Hamish's case transformative, this has been for them when they have been exposed to methods of which they were previously unaware.

> *'And then I went to Edinburgh for visual data analysis …something like that was quite interesting because there are very few students who do use visual methods. So, the fact they're able to get us together, I think there were only about 10 of us from different universities, and just hearing how everyone else was using their visual methods.' (Wynona, SGSSS, FT)*

> *'…the things I've been to, most of them are mostly methods… or research design based. Because at that point, I was still sort of adapting my methods. And that was actually quite helpful for getting a sense of what was out there and what I might do. I went to another one … about project planning in uncertain times… which was very good for sort of helping me get a grip on how to adapt my timeline in light of the pandemic.' (Scott, SGSSS, FT)*

> *'I think there's been some really excellent things from SGSAH…, like even the catalyst plus stuff really changed my whole research. …. I also did a really, really cool, another catalyst plus this year on like narrative and like storytelling was also really good. Really, really good, really helpful.' (Hamish, SGSAH, FT)*

These quotes highlight the importance of the opportunity to explore research methods and the value of doing this in training course settings. Fergus, below, notes the absence of some methods training that he would have liked to see. A key challenge for him is that his research seemed to fall between the arts/humanities and the social sciences. While there were some opportunities to cut across this divide, he felt he would have benefitted from more training on the 'other side'.

> *'I think I would benefit from qualitative research training even though it's not my principal methodology. And I'm sure a lot of the people doing the practice-based research stuff would also benefit from it because it would get them to think*

about, you know, even if they're not doing interviews, thinking about how they're treating their participants.' (Fergus, SGSAH, FT)

Arguably, developing skills in research methods is of key importance to the development journey of researchers during their doctoral journeys. The skills needed and the varying approaches participants can take to their research make a big difference in how they think about their research and the final outcomes of the research. The ability of the SGSs to provide opportunities to explore different methods, find training that is timely for them and interact with other researchers in relation to this learning, despite the challenges around complexity and bureaucracy, were reported as being very valuable to participants. Indeed, as noted by Scott, this was a key reason for his interaction with the SGS.

5.3.2.5 Training Landscape Conclusions

Training courses and development opportunities are important and impactful activities undertaken by nearly all doctoral students to develop research skills, personal skills, and professional skills. This is, however, a complex landscape with many providers of training and both institutional and extra-institutional (from the SGSs and others) requirements to be navigated. Sometimes participants felt that these requirements were a burden on them that they could do without – but equally, sometimes having attended something grudgingly, it turned out to be a valuable experience for them.

However, all 'training' is not created equal, and participants could sometimes come away feeling that they have wasted their time, that the training was too basic, was ill-timed for their journey or that they wanted more from the experience. Sometimes a lack of flexibility over the requirements was seen where students are compelled to do something that, in their view, is repetitive in some way of training they have already done or wastes their precious time in some way. Overall, they tended to appreciate the social value of training – although some reported that the

groups are too large and diverse for any ongoing connection or social support to be an effective 'outcome' of the training experience.

However, researchers clearly felt that they benefited from the training and exposure to a variety of research methods beyond what they may have been able to do in their own institutions. Wynona's comment about visual methods supports this as the ability to connect across institutions meant that there were enough colleagues for there to be training available in a method she wanted to explore.

Participants reported that they could be unsure how to provide effective feedback, make suggestions for training that they need, or be sure that feedback or suggestions provided are acted upon. A further issue is for students who do not quite fit neatly into how either SGSSS/SGSAH are organised or even how the university is organised and who by virtue of their methods or their research cut across institutional or extra-institutional boundaries. Other issues raised were the accessibility of training, especially where they had caring responsibilities or other reasons why travelling around Scotland might be difficult or where they were part-time students and opportunities felt less accessible. Supporting more flexible and inclusive approaches can be challenging when managing complex bureaucratic operations. i.e. making everyone feel like they are being listened to, supporting boundary-crossing research, or managing the accessibility of training for students with a variety of needs and personal circumstances.

It also might be observed that those who are predisposed to pursuing or actively cultivating a sense of community within larger cohorts (as opposed to those who are content with small supportive groups or local communities) are those who tend to find value in training and development experiences beyond the potential for skills development as they see the social value of training (Saetnan, 2020). This is not to say that even those not predisposed to finding this value have not had valuable training experiences.

Finally, the complexity that PGRs experience as part of their learning journeys, through inflexibility, a lack of clarity, or a crowded programme of differing and overlapping provision, can almost act as an opposing force to the dynamic learning space between community and individual. Structures, rules, and formal programming of events and activities feed into and support the learning journey but also complicate it and/or erode its individual nature through enforcing participation at times. In Figure 1, this is shown as being perpendicular to the community individual transverse line and therefore might be seen as both a supporting structure and an opposing force.

5.4 Chapter Conclusions

This analysis covered two main themes – community and connection, and complexity and bureaucracy. Participants discussed a range of issues, but the focus of this chapter was to look at the interview data in the light of the research questions – how the SGSs add value to PGRs learning journeys and doctoral experience. The clearest message from this analysis is the importance of support from others – whether that is an office or subject-based community, colleagues that work together and support each other, a work-based location where informal interactions support the academic journey or how supportive supervisors are to doctoral students on their journey in both academic and professional development. The SGSs contribute to this in part. They do not provide workspaces or day-to-day support or community for students. However, they do contribute to this landscape in positive ways through the opportunities that they provide. Participants articulated that they generally valued meeting other students through these opportunities, even where this did not form lasting relationships, collaborations, or communities.

In contrast to this need for community and social support, doctoral study is often seen as and experienced as an individual journey (Pilbeam and Denyer, 2009). This is, however, in contrast to a push to standardise offerings and create more structure, presumably with a view to greater efficiency and swifter journeys through programmes (Cumming, 2010). Institutions and funders want to maximise the return on their investment and therefore seek to have greater numbers of students

complete their degrees. While the student experience was not reported to be fully positive or, to be fair, fully negative, with regard to any of the organisational entities with which they engaged, these entities nonetheless provide infrastructure, support, and training in various ways to students. However, there are some comments from participants that reflect a desire for more individualised attention to their needs. There is also a suggestion in the data that you get out what you put in and that if you are willing to engage with the opportunities available to you, you will find benefits.

Participants reflected frequently on enjoying the social value of training in addition to the academic value. However, the complexity of the landscapes in which these opportunities or programmes are delivered adds challenge and frustration to students in many cases. A lack of clarity as to what is being offered, students with unclear expectations, the level at which opportunities are offered as well as a lack of flexibility in what needs to be done when adds negative components to what is broadly felt to be a positive experience for students, despite its challenges.

The tendency to continue to add more formal structures to the doctoral journey (Smith McGloin and Wynne, 2022) seems on the surface to conflict with this individual journey. Both universities and SGSs provide large, varied programmes of training and development but err on the side of offering more opportunities rather than less. It would arguably be impossible to fully meet the needs of hundreds of students, but it could be suggested that a less 'one size fits all' approach might better serve the needs of the community of researchers.

6 Discussion

6.1 Challenges and Opportunities

This chapter will discuss and interpret the preceding analysis. In the interviews for this study, participants were asked, in broad terms, about what helped and hindered them on their doctoral journeys to understand more about the role of the SGSs and the SGSs perceived value to students who received their funding. The main themes from the preceding analysis were (1) the important role of community, peer, and social support in learning in the PGR journey; and (2) the impacts of complexity and bureaucracy on the PGR experience, especially as it relates to the development opportunities offered, and institutional (HEI and DTP) bureaucracy. From the perspective of the participants, the SGSs had a role in creating both community and complexity but added value through extra-institutional opportunities for engagement and belonging as well as providing vital funding.

Looking at the evidence from the interviews, it is suggested that the student experience can be described through both the challenges and the opportunities across this landscape as well as the ways these are inter-connected and even sometimes opposing forces. Challenges and opportunities may also be viewed in a more nuanced way in that neither challenge nor opportunity is wholly negative or positive and may feed into each other. These both exist in the landscape and can be viewed as by-products of structures and social interactions.

For example, students may view the issues experienced or regulations to which they must adhere negatively or neutrally at times but there is also evidence that there is structured and organised support for PGRs which can be useful, such as a clear focus on deadlines throughout the programme or the provision of funding (Skopek et al., 2022). It is worth noting, however, that a view based on measuring timely completion rates is a measure of institutionally defined success rather than necessarily a marker of positive experience. However, timely completion is not inherently

negative. Students may report an experience as negative at the time but later see its value to them as part of their experience. This perceived value may also change over time post-PhD and in relation to other factors, such as career trajectory (Guccione and Bryan, 2022).

6.1.1 Challenge: Complexity and Bureaucracy

For most of the history of doctoral education, and as discussed previously, it has been an unstructured educational process (Cahusac de Caux, 2019), certainly from the perspective of institutions, and was often described as being an apprentice (student) working with a master (supervisor) (McCormack, 2004). Students worked closely with their supervisors who provided, and still provide for students, pivotal support and guidance for their research projects. This, however, is changing - students still have a close and vitally important relationship with their supervisors, but as institutions support more students, more people become involved in supporting the doctoral journey and the supervisory relationship changes (McAlpine, 2013; McAlpine et al., 2020). The advent of institutional and extra-institutional structures that govern doctoral education such as Graduate Schools, Doctoral Colleges, and cross-institutional funding structures such as Doctoral Training Partnerships and Centres for Doctoral Training, have fostered institutional structures and programme level structures within and for doctoral education (Smith McGloin and Wynne, 2022). These structures provide both additional support and opportunity for students but also additional regulation and complexity. A tension exists between the top-down pressures of regulation and requirements from institutional entities while the learning journey itself is very individual and bottom-up.

However, our current practices may be in danger, from the perspective of the student experience, of eroding some important aspects of that individual journey through imposing more rigid training structures, an increasing tendency to rely on one size fits all in delivery, and ultimately changing how we think about supporting development for PGRs. This points to tensions between an individualised approach and a broader, more structured approach to doctoral learning. As the

numbers of doctoral students have grown and funders have increasingly wanted to demonstrate the social and economic contributions of the funding provided, these structures have grown in institutional importance and added layers of accountability. However, as Kiley (2017, p. 309) notes, the individual and structural are not necessarily mutually exclusive but nonetheless require a 'delicate balance' between individual learning and a more standardised programme or, a more standardised 'doctoral-level curriculum' (p. 298).

A particular symptom of the complexity of the landscape on which participants focused was the variety programmes of training courses and development opportunities in which they participated. As noted previously (UKRI, 2017), PGRs come to doctoral study with widely divergent backgrounds and experiences therefore setting broad or generic courses and expecting them to meet most of their needs in this way seems insufficient to them. Participants often noted that many courses were meant to be introductory and that they would have preferred to be able to access more in-depth training as a better use of their time. They also wanted more training that would perhaps be less broadly applicable to the entire community, e.g., more niche research methods. This can lead to a number of issues: (1) students become customers or consumers rather than co-creators of their own journey (Naylor et al., 2020); (2) bureaucracy and complexity are confusing and/or dis-empowering (Baschung, 2010, Hopwood, 2010a); (3) there is a perceived lack of flexibility in the student journey in contrast to its individual nature (Cribb and Gewirtz, 2006; Hopwood, 2010a); (4) there are few efforts to align systems and processes or indeed existing systems that would enable this.

While interviewees were able to articulate the value of their experiences of funding through the SGSs they also highlighted numerous challenges. Participants in this study made individual choices with their training, as agreed with their supervisors, to ensure necessary skills development for their research or to pursue additional skills that might help them foster their interests or secure future employment. The challenges were that sometimes the right courses or opportunities were not

available, were not available at the right time, or were on the right topic but insufficient in some way for their needs, for example being aimed at a broader or more introductory level audience (a common complaint). However, participants also admitted that they sometimes attended a course or event that they had not particularly wanted to but were required to, but which turned out to be enjoyable or useful. Balancing training needs, training requirements, and what is actually useful for students is a very challenging exercise, especially across a large group of students. This suggests that there are structural and operational issues at play in providing a balance between an individualised and a structured doctoral environment. Kiley (2017, p. 309) highlights that there has been a 'transition from an almost exclusive focus on the candidate and supervisor as the designers of the PhD to now the involvement of school, faculty and central staff in designing the learning experience'. The involvement of others beyond student and supervisor goes beyond institutional actors and extends to extra-institutional actors, such as the SGSs and disciplinary and other networks, and is a key factor in creating additional complexity. A further challenge, however, is that these organisational entities also tend to act independently of one another, each thinking that what they have chosen to deliver is what they should do.

There is some tension between these individual needs and the move towards more one-size-fits-all all approaches to training that serve larger populations (Parker-Jenkins, 2018). Indeed, many may have their needs met by a general set of training courses that would be useful for a broad range of researchers. The challenges are for those who have more specialist needs and how they can address these needs while also meeting a broad range of requirements. There was a sense from the interviews that participants who were willing to engage more, participate in more events or courses, and build networks were satisfied with this approach and found support as well as development in their participation (Cheng et al.,2016). Others wished to participate differently, often more locally or with smaller groups. They expressed some scepticism as to the value of the engagement at the level of the SGSs. There were interviewees from both SGSs who articulated these feelings. Whether this

scepticism is the result of a less than positive experience, a personal disinclination to engage with a wider community when their needs were met locally, a focus on their work to the exclusion of other pursuits, or other factors, is not clear. However, the same approaches, requirements and levels of support or engagement were not satisfactory for all students.

Driving an increase in organisational structures for the delivery of doctoral education is the need for institutional accountability for funding – whether explicit funding for doctoral programmes from research councils or other funders, more broadly through support provided to institutions through quality-related funding by national funding councils, or through accountability for institutional resources (McAlpine et al., 2020). It is difficult to agree on the ways of measuring institutional return on investment for PGRs and how institutions can demonstrate that they are managing their resources effectively beyond duration of study, timely completion and/or the number of publications. These measures form only a proxy measurement for the lived experience of students. For example, timely submission is seen as a positive, but it is not possible to discern from a data point whether submission was on time due to excellent support and guidance, somewhat in defiance of a difficult experience, or unrelated to any provision offered.

Funders, and therefore universities, tend to be most concerned with these measurable outputs and therefore place less emphasis on understanding the experience that leads to these outputs. UKRI's 'New Deal for PGRs' (UKRI, 2023a) work is an attempt to begin to unpick a range of issues faced by PGRs during their experience, such as levels of funding provided and terms and conditions related to study, e. g. sick leave. However, there is a possibility, a danger even, that UKRI will make recommendations or insist via their funding streams on policies and/or behaviours that are overlaid onto an already complex landscape of activities and actors. A challenge for institutions is that these instructions or changes are handed down and must be implemented quickly within an already complex policy landscape around PGRs and must also be systematised so that student records and reporting can be adapted. This adds challenge to institutional regulations and practices

which move more slowly through institutional approval processes, such as annual cycles of committees.

Elliot et al. (2016) write about similar themes, suggesting in their analysis an ecological model based on Bronfenbrenner (2005, cited in Elliot et al., 2016) which describes the layers, nested systems, and/or multiple contexts which doctoral students traverse. They note the challenges of crossing the boundaries between metaphorical contexts but also the opportunities for learning and change that are inherent in this. In an earlier work, McAlpine and Norton (2006) similarly discuss 'nested contexts' which are those of the department / disciplinary grouping, institutional context, and the societal context. The SGSs and similar structures effectively add a layer to this construct, fitting neatly neither into the institutional nor societal contexts but having aspects of both through their operation across a multi-institutional landscape. McAlpine and Norton make the point that the value of considering such a construct of nested contexts is to encourage a view of interconnections and impacts across contexts. However, a key challenge for PGRs as highlighted in the interviews is how these contexts, systems, or layers across the landscape can conflict or impinge on one another, almost as if these contexts remain unaware, wilfully or otherwise, of each other.

It is pertinent to ask, considering that PGRs are still on such individual programmes of research/study and despite the structural changes to the delivery of doctoral education, is it appropriate that they are planned for and supported through population-level structures and support? Conversely, given the pressure on resources, is it possible to deliver doctoral programmes any other way? This discussion reflects these tensions – that institutions move more and more to structured support and development through a variety of institutional and extra-institutional actors but that fundamentally the design of doctoral education remains highly individual and relies significantly on learning within local disciplinary communities. This is difficult to reconcile in an age of doctoral training partnerships and centres for doctoral training where often the focus is across multiple institutions in tension with the local disciplinary community. The goal of some of these

doctoral training structures is to create that disciplinary community across institutional boundaries but the pressures on PGRs suggest that this can supplant some local efforts to support students as they focus on funder requirements. Where PGRs find their communities for support and learning varies widely and is therefore hard to legislate by institutional entities. Most students interviewed found their own connections locally rather than through institutional doctoral training entities although they did interact with, and value, aspects of the connections fostered by institutional entities. Students did not often see the interconnections (as suggested above in McAlpine and Norton, 2006) in their contexts or see these as productive. Rather, they reflected seeing complexity and bureaucracy.

6.1.2 Opportunities within the Challenge

However, the challenges articulated also present opportunities for engagement and development. It might be easier to focus on the negative aspects related to complexity, such as stress or frustration for students or the management of increasing levels of structure or regulation but there are positives to having choices for how and with whom to socialise and find one's community, in having expanded training options or in having multiple avenues for support or for resolving issues.

Flexibility

One possible antidote to complexity is flexibility in how students move through their requirements and their landscape. Participants described scenarios in which they did not always understand all the requirements as each entity had its different requirements and/or different reporting mechanisms and that there were aspects of this that were not always clear, e.g., what to take when, what was required in each year, how participation was recorded or how feedback was used, or in some cases, how to provide feedback. This was also linked to a lack of flexibility as there was an assumption as well that students started in October of their first year on their funding and

followed a similar trajectory to one another. Those who started at other times of the year or began their funding in year 2 of their doctoral programme found it challenging to meet requirements that were on a timetable that did not line up with where they were on their personal doctoral journey. There could be, for example, an inflexibility about what you took when, such as taking a required course suited to those just starting their programmes, even though you are in year 2 and have already gone through several induction processes.

Allowing PGRs greater flexibility in how to meet mandatory requirements might alleviate some of the frustrations experienced by students. Similarly, a clearer offering that articulates why students might be asked to do particular things at particular points might help to spur positive engagement. Within the complexity of the landscape and the regulatory regimes, some spoke about the value of the development opportunities available either based on what they had learnt or their ability to meet and interact with other researchers. Some found the training hit or miss, but where it was a 'hit', it could sometimes be transformational to how they thought about their research. This additional training and engagement with other students, particularly on research methods, provided by the SGSs points to where the added value from these structures might be found but also to the challenges faced by students in interacting with these structures.

A limiting factor in capitalising on this opportunity for greater choice and variation is that there is no straightforward way to map the system in each or across multiple institutions and therefore to understand and/or navigate it. The layers of organisational or funding entities that are involved can be insular, feel that they are each best placed to deliver something, or that they are filling a gap that they are unaware is filled all or in part elsewhere. There are no existing systems that effectively link and record training, engagement, or participation in such a way that it is visible to all relevant parties. Internal recording, where this exists, is not (certainly in the case of Glasgow) widely available to all those who might assess or plan training programmes and any record of training needs or achievements would need to be replicated for external users to be used by them. Where some

information sharing and coordination may happen within an institution, this can also be limited when activity cuts across multiple organisational boundaries. Outside of an institution, the substitute for systems is onerous or repetitive reporting which is frustrating for students and administratively burdensome for staff involved who need to chase, collect and analyse this information. No one entity is likely able to assemble a complete picture of activity or participation.

6.1.2.1 Agency

A report by the League of European Research Universities (LERU, 2016, p. 6) describes doctoral graduates as 'creative, critical, and autonomous intellectual risk takers', focusing on the experience of researchers and the environment that researchers should ideally work in, how they should lead their own development, and the ways they should be encouraged to cross disciplinary and other conceptual boundaries. However, this focus on the well-rounded researcher who will contribute to the economy and to society does suggest that a focus on the experience of the individual and the agency that they have to develop in their own individual ways could be hampered to some extent by a focus on the end of the journey (and the beginning of the next one perhaps) rather than on the journey itself. There is perhaps a balance to be struck and opportunities in what you might want to do as an individual (or feel comfortable doing) versus what is useful or productive for you to do in relation to your research journey or your future career. This begs the question then about who should decide what is good for any individual and whether some compulsion to interaction is ultimately beneficial on the basis that the interaction potentially has value even if the activity (perhaps) may not. Billett et al. (2017, p. 117)) phrases this as:

> *'…what is afforded by the professional space in terms of activities and interactions shapes its learning potential in ways that go beyond the mere acquisition of knowledge and emphasises the linkages and associations amongst different kinds and forms of occupational knowledge. The learning space is, however, very much shaped by how individuals take up that invitation through their engagement in those activities and interactions.'*

The answer to this question, of who should decide, seems like it should be simple with PGRs leading the decision-making on their own personal, flexible, doctoral journeys. This, however, does not suggest that individuals should ignore the range of support and advice provided to students by supervisors and other guides and peers on their journeys. It also fails to acknowledge the responsibilities of HEIs in supporting doctoral education and the value, financial and repetitional, that they receive for this role. In other parts of this discussion, we have noted the student-supervisor relationship and the role that the supervisor has in supporting students, helping them to decide what methods to use or what training is required and helping them to find ways to address these needs (Baker and Pifer, 2011). Further, supervisors often have a role in connecting students to networks or opportunities within their disciplines or both within and without their institutions. Doctoral researchers also join their programmes at many different points in their lives and with different experiences, employment histories, etc. The starting point is thus different for everyone with each student bringing their own past experiences with them (Billett, 2005). Tobbell and O'Donnell (2013) point out that PGRs are assumed to already know how to be students and navigate universities and these assumptions, along with the ways that this leads to a lack of explicit support, can exacerbate their feelings of being inadequate or being isolated (Oddone et al., 2021, Levecque et al., 2017). These challenges can exacerbate a feeling of a lack of agency in designing one's own journey.

Universities and other entities that deliver doctoral training rely on agreed sector mechanisms such as the Researcher Development Framework (Vitae, 2010a) which sets out what skills researchers might have or seek to develop. Students are encouraged to use tools like this to review their own skills and identify gaps which they may seek to fill. Structured ways of recording this training, such as the use of 'training needs assessments' (often called 'TNA') are often required as part of annual progression processes to demonstrate that students and supervisors are having conversations about training and development and that these needs are kept under an ongoing review.

There was a sense from some participants that they might not try too hard to get across any barriers to having the correct information as they felt it was not necessarily their responsibility to do this and that information should come to them without much effort. This perhaps reflects an idea that students see themselves as customers to be served (Lea, 2009), or expect to be treated as such, rather than co-creators of a research learning journey (Boud and Lee, 2005). Naylor et al. (2020), however, point out that this view of students as customers, which is promoted by the government and even HEIs in their own strategising, goes hand in hand with the marketisation of higher education as well as having the effect of reducing the agency of students as they become only customers rather than co-creators and/or participants. Hopwood (2010b) looks at the agency of PGRs and asserts that learning is likely a result of social interactions and what individuals decide to interact with, how they interact and what their interpretations are of these interactions, further shaped by their existing personal experiences, aligning with Billett et al. (2017).

Beyond a community of peers, something given less attention in the interviews by participants given the nature of the research questions and interview questions, is the role of supervisors and other staff who support PGRs beyond their found communities. However, an extensive literature points to the role of supervisors as the 'master' in the master/apprentice dyad, their ongoing role in the support and development of PGRs in the evolving landscape, and how this has changed over time in relation to the broader changes in doctoral education (Bengtsen and McAlpine, 2022). Supervisors are now part of a larger network of support and management for students (Taylor, 2023) as part of a move towards commodification and structuring of the doctoral experience. As institutional actors, they have a role in how policies and regulations are operationalised for students and how some development opportunities are accessed or perceived (Åkerlind and McAlpine, 2017). Supervisors are a source of information but also a source of complexity where they are not able to sufficiently understand the landscape and provide signposting to resources or support. They

also would benefit from greater support from institutional and extra-institutional entities to enable them to support their students to best effect.

Peer support might also have a role in the noted trend towards more structured and more generic approaches to supporting PGRs to help provide that delicate balance between top-down and bottom-up tensions (Kiley, 2017). While the environment can provide frustrating barriers and roadblocks, PGRs often turn to their personal networks of support (peers, colleagues, supervisors) to negotiate the systems around them to create learning trajectories to suit them and their needs. Not everyone has the same ability to do this but there is a lesson for universities in that perhaps explicitly communicating, empowering, and supporting students more to lead their own development as a way forward (Groen, 2021). This might also be stated as 'trusting' them to make choices that support their own development within explicit frameworks. Providing choice and flexibility in development and structure (programmatic rather than organisational) rather than seeing PGRs through what they are lacking in terms of skills – 'swapping top-down conceptions focused on institutional provisions with individual, contextualised accounts of learning' (Hopwood, 2010, p. 830) and allowing students the agency to plan to make their own developmental choices with the support of supervisors.

6.1.3 Opportunity: Community

The second main theme from the analysis was that participants in this study were clear about the value they placed on the people around them in their day-to-day academic life on campus (or virtually) and the support provided by these peers and colleagues. This aspect of the doctoral education experience can fade into the background (Mantai, 2019) with much more focus on academic support and development and less on the student experience or social support. Mantai highlights that the role of 'candidates' personal, social, and professional relationships is critical in doctoral candidates' identity development' and that 'a positive PhD experience does not exist without support and helpful relationships' (p. 368). PGRs also make choices about their relationships

and who can help or support them (Baker and Pifer, 2011) and this is an aspect of their agency in their own doctoral experience (Hopwood, 2010a).

Balanced against the challenges of complexity and bureaucracy is that PGRs are indeed on an individual journey, embedded in their disciplinary communities locally (i.e., in schools, departments, research centres, and subjects) and the message from students is that these local connections are the foundation of that sense of belonging and to navigating the complexity they face. These local communities may also be smaller and can benefit from local leadership which is meaningful within that disciplinary context, where resources, methods, and networks can be shared.

Social and peer support described in the interview data came from office mates, lab colleagues, small disciplinary groupings, colleagues in schools or subject areas, or similar informal and semi-formal connections. Semi-formal as a descriptor is meant to suggest that formal structures have a role in supporting the connections that are made but do not necessarily dictate it - e.g., in shared office spaces there is some serendipity to those that end up in a shared office but who are connected by formal institutional structures such as the schools which own the spaces. Even where students in the study were less inclined to be sociable and seek out groups of peers, they remained connected to one or two other researchers with whom they could discuss their experiences or seek information or support, often through semi-formal academic connections with an aspect of shared physical spaces, such as shared lab space or connections forged in communal kitchens.

One important aspect that was highlighted by participants is the shared experience and the relief of knowing that whatever you are struggling with, it is not generally unique to you – for example, it's not just you that had feedback from your supervisor that seemed harsh; it's not just you that does not fully understand a particular concept; it's not just you that worries you will never be able to finish your thesis. This shared experience and shared process knowledge and the way that peers help each other through these experiences is a key part of the doctoral journey and a part of

the learning experience. Pilbeam et al. (2013) underscore these observations highlighting the tacit or experiential knowledge that doctoral students require to succeed as well as defining three ways that personal networks support PGRs: '(1) academic discussion and problem-solving; (2) validation and benchmarking; and (3) support and personal and professional development' (p. 1479). They further describe three elements (what they call 'prime facilitators' (p. 1481)) for building networks amongst PGRs, which are physical presence, shared experience, and common purpose (p. 1481). What the interviewees in this study describe validates all three of these facilitators – even where the presence was virtual, it was still shared, such as the participant who described shared, informal and unstructured time on Zoom as a 'Zoom office mate'.

Many postgraduate researchers express feeling alone or that their individual work on their personal projects is isolating. Leveque et al. (2017, p. 872) assert that this is a particular problem for students in the humanities and social sciences who are more likely to be lone researchers on a project than PGRs in biological or physical sciences. This isolation may seem contradictory to the conceptions of community that have been discussed here but the communities of which we speak are not simply those of friendship or shared personal interests but rather those of shared learning, shared spaces for learning, and shared experiences. It is possible, for example, to feel intellectually isolated or lonely while still engaged with communities of practice through the development or work undertaken or through institutional experiences. Many PGRs express a feeling that maybe they are not up to the task of their doctoral work and that they worry someone might realise that they are not 'good enough' or compare themselves against peers and feel that their peers are somehow doing better or are further ahead against some imagined metric. Metcalfe et al. (2018) in a report for the Higher Education Funding Council for England (now Research England) and Vitae note 'imposter syndrome' and the accompanying 'self-doubt' as negative factors impacting PGR well-being (p. 1). This kind of self-doubt is a major factor in feeling isolated. Community and connection mitigate against these issues for PGRs and participants in this study expressed this clearly, even if not always

in these precise terms. Baker and Lattuca (2010) lean on the concept of 'developmental networks' to describe the different networks and relationships that doctoral students might have during their journeys. They suggest that it is an academic community that PGRs rely on to support their learning and development, but this is defined broadly to encompass professional social relationships of varying kinds that contribute to each individual's development.

What also seemed clear from participants is that social support and peer learning go hand in hand. They relied on their peers as sounding boards, sources of information, validation and simply the companionship of being there. One participant stated emphatically that their close working connection to one other researcher in a shared space was key to 'coping slash doing the thing'. Mantai (2019, p. 369) notes that 'peer groups help develop learning skills, while also acting as places for encouragement and mutual empowerment'. Boud and Lee (2005), as noted previously, argue against 'provisionism' (p. 501) meaning simply providing resources or a structure in which to interact and learn as a substitute for a focus on the learning itself. This is a challenge for doctoral training structures such as the SGSs who have a large constituency to support where they need to ideally make opportunities for meaningful engagement rather than simply putting on events and training and assuming that this more meaningful engagement will happen. This is not to suggest that this is intended by the SGSs or other entities. However, they are under pressure to deliver measurable outcomes to a funder, and it is considerably easier to enumerate events and activities than to consistently orchestrate measurable, meaningful engagement at an individual level.

Boud and Lee (2005) further suggest that peer learning and learning to be a peer can be important aspects of the process of learning in the doctoral context. Students doing quite different work in the same overall discipline can, for example, share their research approach or interesting reading, allowing each one to potentially broaden their horizons. Several participants noted that they had an improved understanding of different kinds of research, such as particular qualitative or quantitative approaches, due to these informal interactions. Students can also direct each other to

resources, such as a seminal text to help them to understand something new, or how to successfully navigate processes within the university.

These community interactions also arguably lead to a more authentic learning experience. Rule (2006) states that one of the key aspects of authentic learning is that it takes place within the discourses of a community of learners, narrowly (for example a peer group) or broadly (for example a professional or disciplinary context). She also adds other key themes related to authentic learning are undertaking real-world problems, activities that enable the cognitive and critical skills required for these problems, and student agency in choosing the direction of their work. Participants in this study were all on a doctoral journey to become 'researchers' in some sense of that word that is highly individual to them. They may or may not pursue careers where they are defined as 'researchers' or as 'academics' but the skills they develop to conduct and write up their research are highly valuable skills for employment (Bourner et al., 2014). Learning how to do this – to be a doctoral student and/or to be a researcher – is situated in their experience in universities and in their participation in their disciplinary communities.

6.1.4 Challenges within the Opportunity

The flexibility of a doctoral education landscape allows for members of communities to work with others informally or on an ad hoc basis to support their own journey and in turn support the journey of their peers. Meschitti (2019) discusses peer learning in an ethnographic study of a research group and finds that a 'sustained dialogue' (p. 1217) is needed for learning; that is, that interactions were more beneficial for learning over time rather than in casual one-off interactions. This underscores the view in the interviews where one-off engagement in training courses with a range of others often seemed a bit unsatisfying.

Conversely, Meschitti (2019) also points out that individuals can become excluded from these small peer communities and therefore excluded from the learning that is shared. This is a possible

challenge related to the highly personal nature of an individual's communities. This was not reported by participants in this study who built their own personal networks and reported very positive experiences of these, but it could become an issue for anyone excluded from or lacking access to a peer community. The one student in the study who was located a few hours away from campus had their own personal network but did articulate a sense of missing out on the closer connection to campus communities.

Communities of practice and situated learning theory reflect this participatory approach to understanding learning. Wenger (2010, p. 179) describes this as 'a perspective that locates learning, not in the head or outside it, but in the relationship between the person and the world.' Further, he adds that there is an 'emphasis on the person as a social participant, as a meaning-making entity for whom the social world is a resource for constituting an identity' (p. 180), focusing learning not on the social participation but the participant in social interactions. Each PGR is on an individual journey on their own project, even in cases where their project may form part of a larger body of research or be actively in collaboration with other researchers or organisations. An important challenge therefore for doctoral training structures is how to support or enable this highly individual development process while imposing structures and requirements onto students to manage operations such that they are ensuring that these two goals do not conflict.

Participants also described their perceived lack of physical connections to other people during the pandemic and periods of lockdown and the resultant feeling of being less connected overall (Goldstone and Zhang, 2021). Indeed, in their data (p. 19) they demonstrated a connection between 'mental well-being, connection to peers, training access, and access to resources' and suggested that universities and funders should pay attention to the intersection of these experiential aspects of student support. Interactions in online spaces were less informal and spontaneous, although still valued when this was the main source of interaction or connection. Different participants managed this in different ways and according to what was available to them – one participant developed what

they called a 'Zoom office mate' that they spent several hours a day with online in a Zoom session for companionship rather than constant interaction, another described a 'what's app' texting group, others leaned into additional participation in online events and training courses, others got back onto campus and into an office space at the earliest opportunity in order to leave the confines of their homes and resume their academic lives in a way that felt more authentic.

6.1.5 Summary of Implications

Table 7: Summary of Implications

Individuals / PGRs: Complexity and Bureaucracy	**Individuals / PGRs: Community and Connection**
• PGRs are on an individual journey despite existing within programmatic structures which create tensions between individual needs and one size fits all solutions • They can be viewed as stakeholders/customers rather than agentic participants or co-creators • PGRs find it useful to be able to choose from a range of different opportunities to meet diverse needs	• Benefit from access to a dynamic landscape of possibilities, peers, and communities • Need to be engaged with and open to the possibilities for learning in different physical and metaphorical spaces • Need to be proactive about meeting their own learning and support needs
Supervisors and other staff: Complexity and Bureaucracy	**Supervisors and other staff: Community and Connection**
• Need to have knowledge, understanding and engagement with the landscape (with support) if they are to help students navigate requirements and to support their own professional journeys	• Helpful to foster community/network building • Need to communicate clearly and manage expectations about they can or will do
HEIs: Complexity and Bureaucracy	**HEIs: Community and Connection**
• Pressure to meet a broad range of student needs, support increasing numbers of doctoral students efficiently, and deliver on institutional/funder metrics, leading to a focus on more generic streamlined delivery • Few choices in accepting operational responsibilities or policy initiatives from funders • Organisational units are generally inwardly focused rather than their place in the landscape • Provision of training programmes for all PGRs with multi-level institutional actors (university, college school) and extra-institutional actors	• Need to support ways for students to find their own communities/ways in which communities can emerge organically and recognise their role in this • Need to communicate clearly and manage expectations about opportunities and support for students • Should more thoroughly consider how to engage students with opportunities beyond provision-ism or setting requirements
SGSs/DTPs: Complexity and Bureaucracy	**SGSs/DTPs: Community and Connection**
• Pressure to deliver a programme across disciplines and HEIs for large numbers while also accountable to meet funder needs and targets / metrics • Pressure to comply with diverse drivers, such as for external collaboration or specific agenda, such as equality and diversity • As a conduit for funding, they have choices in which aspects of the student experience they deliver and which to devolve to HEIs	• Important to foster engagement and space for communities so that they add more value than complexity • Should use existing drivers (e.g. shared needs around methods training) to build community rather than simply 'deliver' • Communicate clearly and manage expectations about support and provision

Funders: Complexity and Bureaucracy	Funders: Community and Connection
• Accountable to deliver on an agenda from government to train researchers to contribute to the economy and drive innovation • Focus on managing the inputs/outcomes rather than the experience of students and therefore pushing operational issues onto DTPs and HEIs • Management of reporting regimes on funding streams and increasing levels of detail required	• Should consider their priorities, such as the focus on skills and careers, and how these impact on delivery rather than devolving most things to DTPs and HEIs • Fostering disciplinary communities in a broader, sector-wide, way could work to their advantage and allow them improved feedback loops beyond existing metrics

6.2 Learning Journeys through Landscapes of Practice

The learning journey, a commonly employed metaphor for doctoral education, to becoming a researcher is often framed in current discussions as 'training'– for example 'doctoral training', 'postgraduate training' or 'transferable skills training'. Owens et al. (2020) assert that on this journey there is a tendency for institutions and supervisors to assume that students have access to or understanding of what they need to be successful, what is available to them, and/or that they have a greater understanding of the journey than they necessarily do. Journeys connote a sense of movement from one, literal or figurative, place to another. However, journeys do not start in the same place. Further, both Hughes and Tight (2013) and Wenger-Trayner and Wenger -Trayner (2015a) caution against conceptions of the individual nature of a journey - the former as seeing an individual on a quest, as discussed in Chapter 2, who succeeds through their personal resilience or other qualities, and the latter as it fails to acknowledge the full range of interactions and relationships in the landscape of a journey. Both perspectives convey the complexity of a journey and point to the interactive experience of a journey rather than a simplification to a line marked out on a map. This is, in part, the challenge and opportunity for HEIs, DTPs and the SGSs in delivering doctoral education – that the individual experience, with its various starting points and unique characteristics, is difficult to distil into something simple and linear, but which is worth the effort to nurture and support.

Further, as previously noted, it is also possible to discuss that which is hidden, as in a 'hidden curriculum' (Elliot et al., 2020) of unofficial sources of learning into which doctoral researchers might tap, alternatively described by Elliot et al. (2016) as 'hidden treasure' which doctoral researchers may find. This hidden treasure is understood in part by what is found in journeying through or across the various contexts or systems in which doctoral students engage. Elliot et al. (2016) also invoke the idea of darkness alongside the hidden curriculum to understand what is between formal and informal curricula and that which students perhaps cannot easily see and need to seek out for themselves.

These metaphors serve to help illuminate some of a variety of ways to understand the diversity and complexity of doctoral learning, and the value of understanding the individual student experiences and perceptions, to continue to develop and enhance that journey for those who support doctoral education. While these suggest different approaches to understanding doctoral education - movement towards a goal and the range of non-programmatic activities that support this - they help to see the experience of doctoral research as more than a formal educational experience or as professional development, but an experience in which individuals can search for and find what is most meaningful to them to do this.

6.2.1 A landscape of practice

Another way to consider the evidence from the interviews is, as previously suggested, to employ another metaphor, that the doctoral experience, after Wenger (1998) and Wenger-Trayner et al. (2015), can be viewed as a landscape of practice. Storberg-Walker (2008) defined communities of practice as a 'one way for limited human minds to structure complicated, multilevel social phenomena' and 'to look at collective learning processes, interpret social relations, and identify how they affect learning and identity development' (p. 559). Extending this to a view of a landscape of practice and of multiple communities of practice interwoven across a landscape with individuals on their own trajectories helps to frame the complex experience described by the participants in this

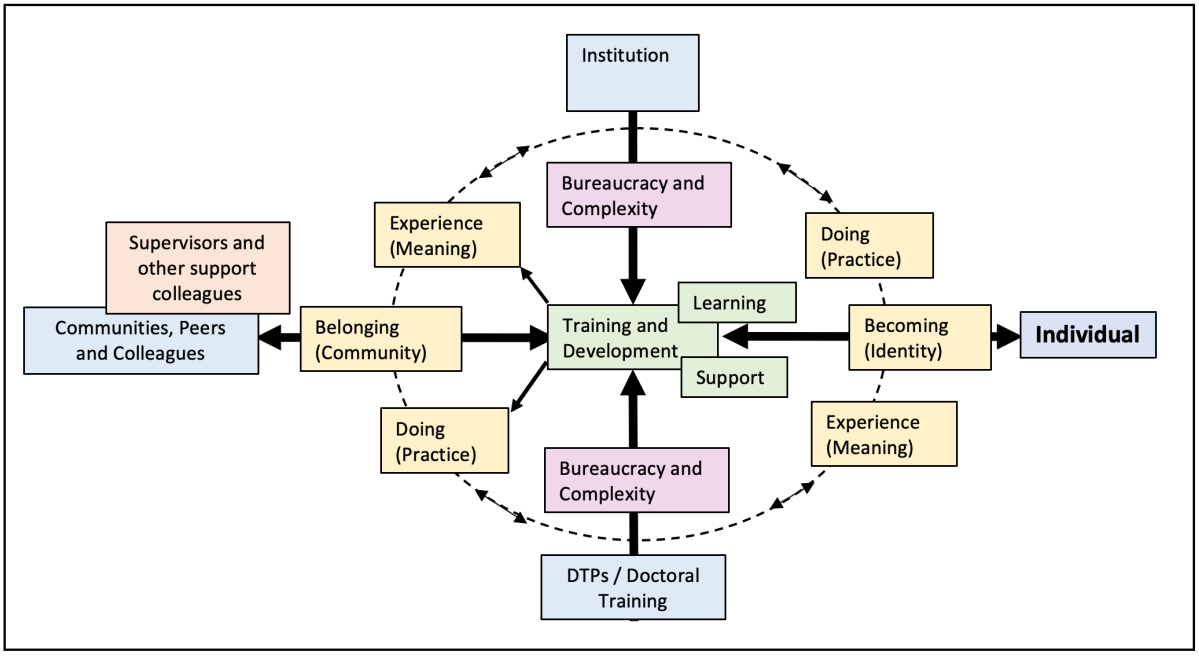
study as a landscape of practice and to consider the challenges the students described in their experiences as students funded by SGSs.

It is suggested here that this metaphor in particular can help to understand the journey, consider what might make up the landscape, including what may be less obvious or hidden, and consider how individuals interact within and with the landscape. Wenger (1998, p. 188) confirms that in his view the landscape is defined by 'practice, not by institutional affiliation' and by the communities that exist within the landscape. This seems apt to describe the PGR journey - not a single community or community of practice which can imply boundary and structure but rather a more dynamic idea of multiple, intersecting, or co-existing communities and connections that support doctoral learning endeavours. Indeed, Wenger (1998, p 149) sees an important aspect of an individual's identity, and to their learning, as linked to their 'multi-membership' in a variety of communities across the landscape and this multi-membership is an important way that practice is shared across different communities.

Learners in such a landscape are 'active participants in the practices of social communities and constructing identities in relation to these communities', as well as supporting learning as experience, doing, belonging, and becoming (Wenger, 1998, pp. 4-5). This active participation is considered by Wenger-Trayner and Wenger-Trayner (2015a) as a trajectory, a journey across a landscape of practice, or 'the becoming of a person who inhabits the landscape with an identity whose dynamic construction reflects our trajectory through that landscape' (p. 19). Fenton-O'Creevy et al. (2015, pp. 43-44) also add that there are multiple trajectories across a landscape and that not every trajectory is the same, i.e. levels of engagement, participation, or embeddedness within a community can be different for different individuals and at different times. This underscores the dynamic nature of the journey - the individual learning and identity changes, the interplay between the individual and the social, and the engagement with experience, doing, belonging and becoming.

As previously noted in Chapter 2, Figure 1, which describes a simple doctoral learning landscape, does not represent a definitive mapping as the configuration of any given landscape for an individual may look quite different. Figure 2, below, updates this depiction to convey a sense of dynamism and interconnection – while also being a generalised representation rather than a definitive mapping. People - students, peers, colleagues, and communities - are on one axis with structures, institutions and bureaucracies on the other. As with earlier discussions of a view of social learning, while learning is individual it is also achieved through experience, doing, belonging, and becoming which forms the heart of the depiction. Experience and doing (meaning and practice) are repeated in the landscape to depict the active, multi-sited, multi-membership of a doctoral experience. Further, there is a relational interdependence between the individual and communities of practice, but individuals chart their own trajectories within, through and across this.

Figure 2: An updated doctoral learning landscape



6.2.2 Articulating the Value

Having described the opportunities and challenges and settled on a way to describe what is seen, it is now time to turn to the questions which this study seeks to answer. This dissertation set

out to query the value from the student perspective of the SGSs. From the student perspective, this value might be understood through the challenges and opportunities articulated in the interviews. Neither the opportunities nor the challenges are wholly negative or positive as the challenges provide potential benefits (more opportunity) while the opportunities have possible downsides (communities are not always welcoming or available in ways that meet needs). This is, of course, not a full picture as the student experience and its impact on individuals and their future lives and careers cannot be simply reduced to this discussion. However, the value, it is suggested, is found in the variety and dynamism of the landscape and through the significant contributions to training and development orchestrated by the SGSs. The size of the operations and the critical mass created enable opportunity on a scale that individual institutions cannot generally replicate. However, it is also suggested that their participation in the doctoral education landscape in Scotland has been somewhat unexamined on the premise that more funding and more training and development can only be positive. The data generated by this study suggests that this is more nuanced: the value of the opportunities is clear, but the additional bureaucracy and complexity which can attempt to supplant local structures and regulations is often unhelpful and tarnishes this value.

This challenge exists within universities themselves as complex entities, so it is not unique to these funding streams. Internal and external organisational units have overlapping responsibilities, adding the potential for offerings to be repetitive, or overlapping regulatory regimes which may be unaligned or conflicting at times. All of this is done in good will and to provide the best possible service and support but there is often little coordination, inter-connectedness, or accountability between units or entities. In practice, there can be both competition and repetition across the landscape. There is evidence to suggest that while different levels within each organisational unit or entity may have views about where they should contribute to the support and development of their doctoral researchers, there are challenges in understanding student needs, capacity for development and delivery, and overlap with other units. This further suggests that:

> *'At the practice level, our results suggest that universities should work to explicitly define roles and responsibilities; that graduate faculties rather than departments should take the lead on doctoral professional development; that faculties should seek to develop collaborative models that are responsive to disciplinary needs without creating demands on individual departments; and that departments should resist the temptation to create their own programs and instead seek to work with graduate faculties.' (Berdahl and Malloy, 2019, p. 47)*

There may not be universal agreement with that perspective as to where responsibility should sit for aspects of doctoral education but the point that individual entities should resist the temptation to recreate what already exists elsewhere is well made. Participants all highlighted, albeit in different ways, the effect of the complexity of their environment on their learning journey or their feelings about their learning journey. They did not always use the word 'complexity', but this word encapsulates the experiences they described. It can be confusing for students to determine which entity does or delivers what, or where to go for what they need, in training terms or in process terms. Two of the participants specifically noted the challenges of being on one side or the other of an organisational/disciplinary divide and the challenges in being made aware of or accessing training or events.

Participants often deferred to local information sources and articulated a sense that there is more information available to them, such as from the Graduate School, if they choose to look for it. However, this suggests that information is spread throughout the layers of institutional structures and accessible from many different points. While arguably true, in practice information is not spread evenly and PGRs can often be given wrong answers or incomplete answers to their queries or must spend significant time tracking information down or building answers from multiple sources. There is both an element of engagement, i.e. being willing to search for information that is required, but also of coherence or consistency, i.e. not making information difficult to find, compile, or interpret.

The preceding discussion focused on some challenges and opportunities in the doctoral learning experience described by participants in this study. There are tensions that have emerged

from the changes to doctoral education over recent years and emerge, at least in part, from several developments: (a) a marked increase of training and development opportunities, often focused on research methods, skills development, or career development; (b) structured models of delivery which form cohorts or groupings of students of various sizes and of various structures; (c) structured support via graduate schools, doctoral colleges or similar models that bring administrative resources together; (d) cross-institutional funding models that have a role in multi-institutional delivery. None of these emergent factors are inherently negative and indeed are all aimed at greater support and/or community building and at helping doctoral students in the early steps of their career journeys.

Arguably, the positionality of the researcher in this study as both staff and student with a longitudinal understanding of these issues has enabled the articulation of the perspectives elaborated from the evidence, i.e. that complex structures and regulatory regimes are not entirely negative despite student perception and that community and connection are emergent but too easily seen as somehow unworthy of greater attention.

PGRs interviewed valued people, community, and experience more than structures and boundaries. This is not to suggest that the latter are not valued or valuable – but rather that from an institutional perspective they may be over-valued. The institutional actors contribute both challenge and opportunity to experience, doing, belonging and becoming but this is not uniformly positive. Indeed, some positivity can be lost or cancelled out where interactions tend towards the negative.

The institutional perspective on a landscape of practice - even if that landscape looks somewhat different from different perspectives - should perhaps be a force that promotes dynamism, inter-connectedness, and cohesion without working against the serendipitous aspects of that dynamism to control and/or measure the landscape. This seems a challenging task but where communication is open, students are encouraged and enabled to engage, and there is flexibility in

meeting goals, there are possibilities for nurturing the ecosystem rather than corralling the landscape into controllable pieces.

Wenger-Trayner and Wenger-Trayner (2015b) describe a specific role in landscapes of practice for 'systems conveners' (p. 99):

> *'These conveners see a social landscape with all its separate and related practices through a wide-angle lens; they spot opportunities for creating new learning spaces and partnerships that will bring different and often unlikely people together to engage in learning across boundaries.'*

This role, while being described by Wenger-Trayner and Wenger-Trayner, as one held by individuals, is one that could be created and/or championed by an entity or institution such as an HEI or DTP to be undertaken by individuals. They see this role as enabling change and collaboration, creating new capabilities, and spotting and acting on potential in the landscape. Thinking through Wenger's (1998, pp. 4-5) theory of learning with the components of meaning, practice, community and identity (or experience, doing, belonging and becoming) some tools or approaches to systems convening in the landscape could emerge – e.g. ways for students to engage with knowledge or practice through development opportunities, ways that communities and peer support might be fostered, and the ways that students are encouraged to understand their journey and their personal transformation.

This is a role that the SGSs could take, in the form of colleagues who undertake this work as well as in the explicit articulation of this enabling function in their plans and proposals. SGSs have superimposed themselves on the landscape perhaps without as much regard for how they fit into it. This systems convener view, which takes that 'wide angle', could release energy and resources from repetitive efforts across the landscape and direct it to ever more productive efforts. Wenger-Trayner and Wenger-Trayner (2015b) further add:

> *'In seeking new common ground conveners honour the existing accountability of stakeholders to their contexts, including regimes of competence, the agendas and*

> *expectations of organizations involved, and their own trajectory through the landscape. This respect for boundaries takes patience and persistence, but the commitment to common ground is likely to be more robust.' (p. 102)*

They discuss in depth the challenges inherent in doing this convening work and the role of convenors as part of the landscape as well as the need to invoke aspiration and imagination and foster alignment: 'Conveners need to offer people new ways of seeing and experiencing themselves in the landscape. They have to go beyond simply inviting people into a project; they invite them to reconfigure their identity to become part of a reconfigured landscape' (p. 106).

Viewing doctoral learning as a landscape helps to see the bigger picture and how the value, structures, and complexity are interlinked. Wenger describes a landscape of practice as a 'weaving of both boundaries and peripheries' (1998, p. 118), suggesting a variety and texture to the figurative landscape made up of different communities of practice. These communities relate to those in which students participate across personal, disciplinary, institutional, extra-institutional groupings, and/or organisational units. Interviewees all stated how much they valued their peers and the communities of support they built around them, often but not exclusively, in local, physical spaces, and that these communities provided both academic and personal support. Some participants preferred to chart their own course in building their personal networks, but others were grateful for the opportunities presented to meet other students and form bonds or connections with other students.

What might be observed from the previously stated developments in doctoral education is that they are largely things done to students or for students, underscoring a top-down view. What is missing is a meaningful view of and acknowledgement of the value of the student experience and of student agency in co-creating their experiences and in building their own communities of practice, learning and support. The individual has given way to the structural and the collective. Actors in the sector push responsibility for the softer, more personal aspects of engagement and community building ever further down within the hierarchy of the landscape as a more local concern but this only fosters repetition in what is created. Yet, the participants in this study seemed to value these

structural elements far less than the individual communities around them. The challenge is for institutional actors to appreciate and nurture the value of community and connection, the interconnectedness in the landscape, the role of experience, doing, belonging and becoming, and value contributions beyond their own.

6.3 Study limitations and recommendations for future research

Limitations of the study were primarily related to the scope and scale of the research. As an EdD, the thesis is shorter and the period over which the research is conducted and written up is shorter. In this case, the research period was also interrupted by a global pandemic necessitating a nearly two-year break in studies and a student experience in many ways transformed by this. A longer study in less troubled times may have incorporated additional interviews or included additional methods to triangulate the findings, such as a survey to reach a larger number of students.

The research was also conducted at a single institution with its own institutional history, regulations, and quirks. While the insider nature of the research attempted to make a virtue of this in terms of the knowledge and experience of the researcher of that institution and the greater likelihood of a shared experience of students at one institution, it remains a single institution study. As above, additional interviews or methods which extended the range of participants may have enabled the inclusion of a broader range of viewpoints from other institutions.

Similarly, the study was limited to the SGSs and the disciplines within them. An extension of the study might be to look at other doctoral training structures, such as CDTs in the physical sciences or other Scottish partnerships in the biological and biomedical sciences. The different disciplinary cultures, smaller student numbers in CDTs, and a tendency for more lab-based activities in shared spaces would have the potential to provide further perspectives on how students experience these structured funding streams.

The experiential nature of the study also meant that it was based on students' perceptions of their experience at a point in time - and indeed a challenging point in time near the end of a global pandemic. A more longitudinal view might mean that issues and challenges that were perceived in the moment were bothersome to students over time or even yielded their own benefits. As Guccione and Bryan (2022) highlighted, feelings about the doctoral experience and the value of the doctorate change over time. Whether the challenges experienced during doctoral study are irrelevant to longer-term perceived value is perhaps up for discussion. This is, however, rather like the ends justifying the mean and It would be interesting to consider the extent to which negative experiences ultimately became viewed more positively. This is not to suggest that where experiences were personally damaging for students that this should be ignored or that students should not be supported through difficulties. Rather that some aspects of frustration may be ephemeral and not have much meaning in the longer term. A study which looked at students who had completed and moved onto a variety of careers, but which asked them to look back at some of what is discussed here related to community and complexity might add insight to consideration of the importance of managing aspects of the student experience. Additionally, a look at doctoral student engagement in this context might also be fruitful.

Further, there are important aspects of the doctoral experience that were not discussed in any detail by participants that could be seen as gaps in the study. Employment, employability. and career plans, for example, were only occasionally discussed. Participants were discussing their current experiences for the most part rather than taking a view on the future.

There were challenges in the study that certain data and knowledge of the institution sat outside the research and the researcher had access to materials and data that could not be included as part of the research (e.g., access to student survey data that was collected as part of routine monitoring rather than as part of the research). The researcher also had wide access to student personal data as part of their role, highlighting the paramount importance of confidentiality and the

need for objectivity from the researcher. Sitting centrally in a research office and in a management role could, however, be perceived as a position of at least some power within the institution.

From the perspective of study participants, it would not be unreasonable for them to have concerns about what they might reveal to an institutional manager who has the potential to influence their experience in ways of which they were not entirely aware. There could be a temptation on the part of the participants for example, to censor themselves or modify their responses to questions based on their perception of this (Mercer, 2007). The researcher also needed to be mindful to conduct the interview as a student and leave their staff role outside the interview.

Sikes (2006, p. 110) highlights, amongst a range of potential pitfalls for insider researchers that 'people considering embarking on insider research have to think very carefully about what taking on the role and identity of researcher can mean and involve in a setting where they are normally seen as someone else with particular responsibilities and powers.' Greene (2014) however suggests that reflection on and sensitivity to the benefits and challenges of insider research as well as a focus on the research itself and not just on the position of the researcher has the potential to mitigate the potential pitfalls of insider research.

7 Recommendations and Conclusions

7.1 Recommendations

This section elaborates recommendations for policy and practice based on the discussions in the preceding chapters.

Students reflected that, beyond the enabling nature of the funding, the best thing about the SGSs is that there are a multitude of developmental and social opportunities for students who want them, fostering the attainment or movement towards individual and multi-faceted goals. These opportunities are focused on developing PGRs to conduct the best research, support the development of disciplines, and lead to satisfying careers for doctoral graduates. Conversely, the worst thing about the SGSs', as reported by interview participants, is that they impose another layer of complexity on PGRs who already have significant demands placed on them. PGRs must balance requirements between universities and doctoral training entities while meeting academic criteria for progress and balancing personal and family needs.

This does then beg the question as to the purpose of these structures, as they are defined and as they are operated. Are they valuable for what they deliver or how they are used by students? Does the structure and sense of belonging to these, even where this is tenuous, enhance the student experience? What does it mean to enhance the student experience? How are the offerings of the SGSs something beyond what institutions can provide in a way that is synergistic with the rest of the landscape? These are challenging questions to answer, and answers vary at the individual level based on the interview evidence. There is no evidence here to suggest that the SGSs do not provide significant value to students in terms of funding and opportunities for development. However, the evidence does suggest that the individual experience of these entities is mixed as well as interdependent with a range of other factors. The contribution of positive elements perhaps does not balance the more negative emergent aspects in the complexity that is created. This

interdependence is not easily recognised by institutional actors and most institutional actors in the landscape fail to take adequate account of the other actors in the landscape.

Few of these recommendations that follow would be simple to implement, in part as the doctoral education landscape forms part of much larger educational, economic, and societal landscapes and even the approach to understanding the student experience from institutional perspectives tends to be at the population level, e.g. in survey results. However, these recommendations are informed by the professional experience and knowledge of the researcher. While challenging, they suggest fruitful areas for review and discussion by those who fund, deliver, and organise doctoral education. The recommendations are therefore offered as food for thought and with the recognition that sector-wide conversations about the issues raised here could yield productive outcomes that could positively impact the PGR experience. Indeed, UKRI (2023b) has, as of September 2023, published the first recommendations from its review of doctoral education and there may be opportunities to contribute some of these ideas to that work.

Many of these recommendations could also be read as promoting ever-increasing centralisation and therefore possibly increasing the top-down bureaucratic aspects that are often described as less than positive. However, this is not the intention. Rather the intention is to recommend greater flexibility, greater collaboration, coordination, and collective effort where useful, reduction of repetition, repurposing resources where repetition is reduced, and above all enhanced sharing of best practice across the sector. An ecosystem does not need to be highly regulated and centralised to be transparent as well as dynamic and productive. The idea of systems convening in the preceding chapter conveys this idea compellingly – that actors in the landscape can have responsibility (chosen for them or delegated to them) for looking across the landscape to improve it in ways that extend beyond organisational units to which they belong. Conceiving of doctoral education in the UK itself as a landscape of practice or a landscape of overlapping and intersecting

communities of practice helps to understand the complex landscape and to see PGRs as participating in their own landscapes of practice as well as the interconnectivity across the sector.

Further, many of these recommendations are broad and even structural, promoting a view that the resources expended on maintaining and enhancing existing bureaucracies could be re-directed into more targeted and cohesive initiatives for the health of the entire sector. When referring to 'HEIs' this should be considered as looking at institutional measures but also looking at measures through the layers of an institution as appropriate for their structures. HEIs are many-layered, and those layers enable diverse disciplines to thrive but often with repetitive structures and activities in each layer.

7.1.1 General Recommendations

1. The high-level recommendation is that we as a sector should be taking opportunities to reflect on what we do, why we do it, and how these are situated in the landscape, and focus on the student experience as well as the outcomes of that experience.

    - PGR policy, delivery, regulation, and provision should be reviewed holistically across relevant entities and partners with a view to streamlining requirements and regulations and which entities are offering which provision to try to remove duplication and overlap.

    - Willingness to stop doing some things may be required as someone else may already be doing them perfectly well. This also should be seen as an ongoing effort rather than a one-off exercise.

    - Student engagement and the management and communication of expectations are behind several issues that PGRs experience. There is often a focus on engagement as a compliance activity, e.g. recording attendance at a suite of mandatory courses, rather than a focus on ensuring that there is value in activities, that this value is communicated and understood, and that there is sufficient flexibility and opportunity to ensure that

individual needs are met. Supporting a highly individual enterprise while delivering efficiently at scale is an ongoing challenge that should be recognised. There needs to be engagement from all actors in the landscape on this.

2. The social nature of learning and the way that interviewees in this study described this support highlight the value of what can be hidden or at least not explicitly valued - personal relationships, local communities, unexpected opportunities, or leaps in thinking. While it may not be possible to engineer what is at least in part serendipitous, attention, energy, and resources should be given to creating the conditions and spaces for community and support to emerge and valuing this when it happens.

7.1.2 Funders

Funders may feel that it is not their role but rather the responsibility of HEIs to consider the student experience. However, their efforts should be supportive of this rather than detached from or dis-enabling of it. We have increasing centralisation of funding, and this funding leads the sector to change when there are conditions or terms accompanying the funding. Decisions about how funding and funder goals are implemented do not always fully consider the student experience, rather focusing on the measurable outcomes of the experience or goals such as employability.

1. Funders constantly update their requirements to include agendas such as equality, diversity and inclusion, research culture, and advanced training, but successful bids for funding often re-create familiar structures in parallel in layers in trying to demonstrate how they can achieve funder-approved success. Instead of layering on new agendas, funders could lead culture change around simplifying doctoral education. They could, for example:

    - develop and report on impact statements or similar disclosures about the potential effects of their initiatives on students, staff, universities, DTPs, and the whole research ecosystem. This could encompass clear statements about roles and responsibilities for

funders DTPs (or similar), HEIs or other partners in delivering initiatives and negotiate these roles and responsibilities to ensure they are fit for purpose.

- consider adding commitments to streamlining and bureaucracy reduction to funding calls and as performance indicators to incentivise HEIs, DTPs and other partners to make this a priority, e.g. demonstrating embedded-ness in existing structures and provisions, and thus enhanced sustainability, while still promoting innovation in delivery.
- insist on more emphasis on how DTPs build meaningful student engagement and create supportive communities for PGRs in awarding funding.

2. Funders should work more closely with HEIs and DTPs and others across the sector on developing responses to new policy initiatives or measurement and reporting requirements. The devolution of operational matters to DTPs and onto HEIs is perhaps meant to be a sign of institutional independence but each HEI puts energy and resources into their individual but very similar responses which potentially could be more efficiently shared or developed through collaboration and consensus.

3. Funders should consider their reliance on cross-institutional 'graduate school' structures. Casting these structures in a different light or with a different remit (e.g. employability and career development, advanced research methods) rather than as a 'graduate school' with overlapping responsibilities with institutional graduate schools could add additional clarity about their role.

7.1.3 DTP Recommendations

1. Like recommendations for funders, DTPs should work to evolve more bottom-up approaches to working with their constituent HEIs on the details of what they implement. They have an opportunity as systems convenors to foster the dynamism and build connections in their landscapes. The focus should be on simplifying their policies, processes and initiatives, enabling more sharing of existing processes, training, and resources across HEIs, rather than adding new

layers of complexity or parallel structures and occasionally simply supplanting existing institutional efforts for groups of students.

- Methods training is an example of where more collective approaches to design and delivery would likely yield benefits as institutions share their innovations. Many institutions offer very similar training, and DTPs can at times also replicate very similar training. This should be viewed as an opportunity to identify where the most value is added, target resources to these areas, and enable greater sharing of provision.

2. DTPs are ultimately led by institutional actors with a view to bringing greater funding into their institutions. DTP leaders and HEI leaders should consider how they can bring innovation and enhanced student support into the design of DTPs and into the delivery of doctoral education without adding additional bureaucracy. Mechanisms for doing this might include the development of impact statements that set out how new provision does not unnecessarily replicate existing structures as well as how they add value to the entire ecosystem and foster inter-connectedness in the landscape.

3. DTPs enact funder priorities but can influence delivery through how they frame their funding bids and what they deliver to PGRs. They are under pressure from funders to deliver on a range of priorities but have choices in how they do this. DTPs could focus more on creating or making space for supportive communities that give researchers opportunities to explore their identity as researchers. Existing provision could be adjusted to enhance this focus, and the benefits linked to funder-supported outcomes, such as supporting timely submission.

4. Funders, DTPs, and HEIs should all consider how they explicitly communicate and manage expectations for students rather than assuming students' engagement, motivation, or sense of autonomy - or that students are able to make sense of a landscape that it seems none of the key actors have a full view of or fully understand.

7.1.4 HEI Recommendations

1. HEIs should consider undertaking evaluative exercises to understand the internal and external roles and responsibilities for PGR delivery, considering how delivery structures and programme designs interact to create unnecessary bureaucracy or complexity, and how to mitigate against this. This should include how they interact with extra-institutional entities.

2. HEIs should commit to an improved understanding of the PGR experience and the ongoing shared enterprise of improving it. HEIs should ensure that they have effective evaluation and feedback mechanisms to ensure that they are hearing the voices of PGRs and supervisors and then act on relevant feedback. While many individual actors in the landscape may feel that they understand the lived PGR experience, it needs to be pulled together from various perspectives for greater understanding. This is a resource-intensive activity, and one not fully addressed by existing surveys, and therefore one not always given the attention it deserves.

3. HEIs should ensure clarity and alignment of policies and processes that support students, ensuring that supervisor and PGR responsibilities and requirements are articulated clearly and that expectations are communicated and understood. To do this, PGR voices and experiences should be heard, and their views incorporated into this work.

4. Institutional policies should be flexible and sympathetic to the challenges faced by PGRs and empower them to make effective choices in designing their personal programmes of activity.

6. The communities of support articulated by students were reported in the interviews as very simple and straightforward shared places to work and gather, such as offices or kitchen spaces. HEIs should focus attention and resources on ensuring that these most basic aspects of physical (and virtual) environments provides sociability and connection.

7. As noted above, DTPs are led by institutional actors with support from HEIs with a view to bringing greater funding into their institutions. HEIs need to fully consider the resource

implications and contributions required of staff to interact with and support extra-institutional entities. This might mean that HEIs cede some aspects of delivery to DTPs.

7.1.5 Supervisor and Supporter Recommendations

University staff, academic and professional, should be proactive about their role in different entities to deliver the kinds of streamlining and collective efforts noted above. They also have a role in managing PGR expectations, advocating on their behalf, and supporting PGRs to advocate for themselves.

1. Supervisors will be well-connected at the point of delivery of doctoral education and should ideally have a significant voice in the design of doctoral training structures. Supervisors should be encouraged, supported, and enabled by institutions to engage with these efforts and to share their lived experience of supporting PGRs.

2. Supervisors should be supported and enabled, e.g. through acceptance of these or similar activities in workload modelling, to invest time in understanding the ecosystem in which they operate to better support their PGRs.

3. Staff who operate in various roles in the ecosystem across institutions should ensure they effectively communicate their initiatives and their roles to support this improved understanding.

7.1.6 PGR Recommendations

1. PGRs should be encouraged and empowered to have agency in charting their own courses through their doctoral programmes and should take the opportunities to add their voices to change across the sector and in their own institutions. One way that PGRs may be empowered is through flexibility and clarity of opportunity. Another way is that actors across the ecosystem listen to and value what PGRs tell them.

2. PGRs struggle with the complexity of the ecosystem but need to be engaged with the opportunities open to them and to use their voices to communicate where there are challenges, issues with quality, or complex bureaucracies. HEIs should make sure they are listening.

7.2 Conclusions

The question set out at the start of this dissertation asked what evidence there was that the SGSs provided value to the student experience from the student perspective. The assessments of participants in this study were that they valued the funding, many noting that they would not otherwise have been able to undertake PhD study, and valued the training and development opportunities, in and of themselves as well as for the opportunities to mix with other PhD students. The SGSs, however, added to the complexity of the overall landscape by duplicating some of what is offered institutionally, adding additional requirements and bureaucracy, often related to training and development, in addition to what is required institutionally.

PGRs have limited choice in accepting their place in a community such as that provided by an SGS. They gratefully accept the funding and through this become part of that group of students with the rights and responsibilities that this entails. While this is clearly intended to benefit students and deliver on funder objectives (and often does), there is an aspect to this endeavour of one size trying to fit all. Students do have agency in terms of how they engage with the SGSs, but they have only the possibility of limited roles in creating the structures, how they operate, what benefits they can seek, etc. It is rather like joining an existing university community which has existed long before the entry of an individual student but having to do this twice, or more, into different organisational structures as they interact with increasingly local disciplinary schools, subjects, and communities.

The challenge for PGRs is navigating requirements and choices across multiple entities. From the comments made by interviewees, it was clear that even within the institution it was not always clear what opportunities were offered where and by whom and therefore adding an extra layer of

choices added to a sense of confusion. However, interviewees also felt that these opportunities were important and engaged with them with at least some level of willingness. Sometimes reluctance was overcome by the opportunity being valuable in terms of the learning offered or the community or connection provided. Sometimes, however, PGRs simply attended requirements to tick boxes as their needs were met elsewhere, often locally in their schools or subjects.

The overriding observation is that while the SGSs have added a lot to the landscape, their approach of designating themselves as 'Graduate Schools' (creating an equivalence with institutional entities) could be, in the light of the comments made by the students interviewed for this work, seen as less than helpful. The ways in which students felt that the SGSs most added value were in the delivery of training and development, the potential for formal or informal interactions with other students across the partnership or other entities/organisations, and the provision of funding – all of which can be done without creating an entity that equates itself with a Graduate School or acts as another extra-institutional regulatory entity. In many ways, they supplant local Graduate Schools with the imposition of their own requirements and push considerable bureaucracy onto universities. A different model might have been constructed that was more focused on collaboration and partnership rather than delivery and control. This tendency towards measurement and control reflects some of the tensions discussed in this dissertation, between the individual journey and the need to deliver for large numbers of students efficiently.

A useful question to consider might be in what ways could funders be less directive without losing the assurance of institutions delivering a high-quality experience likely to lead to the kinds of outcomes that funders promote. The outcome, however, of funders and institutions attempting to address a range of issues and drivers all at the same time and in their own ways has resulted in a complex landscape where there are many actors and they each deliver support, development, or training to PGRs, overlapping requirements, and students who often do not know how to find the information they need. Secondary to this is that universities are complex organisations, each with

their own structures and strategies, and where the focus can be on the delivery of the teaching and learning activity which is generally the dominant activity in any institution. To be able to parse all the messages that arrive from institutional and extra-institutional actors and to understand the necessary systems and processes needed to navigate through university landscapes is a challenging enterprise as reflected in the interviews which support this thesis.

It is perhaps useful to be reminded of Gardner's (2007, p. 729) criticisms of aspects of Weidman *et al.* (2001) and what she saw as their 'monolithic treatment of graduate education', lacking nuance or attention to diversity. In effect, what is recommended here is to view the delivery of doctoral education across the sector as a landscape of practice, a landscape of diverse people and practices who support each other in myriad ways in a learning endeavour. This view would potentially enable greater sharing of good practice and greater alignment of activities across institutions while maintaining the dynamism and diversity of the existing landscape. What is recommended here might also be viewed as a call to shine a light on what is hidden - as in a 'hidden curriculum' (Elliot *et al.*, 2016) - to illuminate the more subtle aspects of the doctoral experience and explicitly acknowledge the roles and responsibilities of different actors in a shared landscape of practice.

While creating a fully collective enterprise out of doctoral education is not perhaps desirable and institutions do and must compete, the ability to leverage greater resources that benefit the entire sector becomes possible when significant duplication is removed. As Kiley (2017, p. 309) notes, top-down and bottom-up approaches are not necessarily mutually exclusive but rather require a 'delicate balance'. Could we be committed to achieving, or at least looking positively towards, this balance as a sector, balancing the individual with the structural and bureaucratic and with the community?

7.3 Final Reflections

Returning to comments in the introduction about the personal goals for undertaking this research, some final reflections on the work are provided to round out the discussion. In the introductory chapter, both Whitchurch (2008) (the concept of third space professionals) and Nerad (2012) (a global village) were highlighted. These concepts started a thinking process that led to this dissertation, looking for a way to understand the roles of different actors in the doctoral landscape and the complexity of the learning journey for doctoral students as witnessed but also as experienced personally through both a staff and student perspective. Coming from an institutional perspective, the evidence pointed to conclusions that were surprising in some ways, i.e. that doing 'more' for students was not necessarily the answer so much as getting out of our own way and looking carefully at what we already do before adding to this. The thinking around how communities across this landscape exist and interact, how we are all learners on a journey no matter what our roles and contributions, and that each journey no matter how interconnected to others through the process and activities of learning is still highly individual were important insights and already inform the development of policy and support for doctoral education at Glasgow.

This journey has been exhilarating, exhausting, surprising, transformative and entirely rewarding on both personal and professional levels. Understanding the doctoral journey in a different light, through this study, has illuminated what students value most in their experience, the contrasting and simultaneously interconnected yet individual student experience, and the variability of how students experience the most positively intended interventions. This is an understanding that can be used when reviewing and writing policy, designing events and activities, and even in considering organisational structures.

This has already engendered a greater level of student consultation and the reworking of institutional surveys to provide more qualitative data for a more nuanced understanding of the PGR experience beyond an assessment of satisfaction. It has also spearheaded a project to map the PGR

ecosystem at Glasgow and reduce duplication in the system which has at the time of writing only just commenced. The outcome of the ecosystem approach is one that it is hoped that those with the mindsets of systems conveners might use to transform the landscape within the University in both large and small ways.

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9 Appendices

9.1 Interview Themes and Questions

Understanding the contributions of UKRI-funded cohort-based doctoral training models to the doctoral journey from the perspective of the individual student experience

Opening

Explain the research project and get them to sign consent – be clear that I'm really looking for their personal experience and perceptions but also that by 'student experience' I refer also to their learning journey as doctoral students. Note as well that while I have framed this as a journey, they are welcome to use any other imagery or analogy that suits them. It is about their experience fundamentally. Notes: While these notes refer to 'CTMs' more common terminology was used in discussion, e.g., SGSSS or SGSAH.

Introductory questions

- Ask about their subject, School, CTM / funder (having explained my approach), supervisors, etc. When speaking to them, I will use familiar terminology, such as 'Scottish Graduate School' so that the questions are clear rather than referring to a 'CTM'.

- Ask for some broad demographic data (gender, age group, country of origin) – participants may elect not to answer

Card sorting exercise:

Students will be asked to arrange a series of index-sized cards.

- They may arrange these in a linear or more network-like or other fashion according to the meaning which they wish to convey.

- It will be explained that I want to get a sense of how they see the various structures and people who are part of their doctoral journey in relative importance to them in their journey. This is about both academic and non-academic support.

- They may also write on the cards – e.g., where the card says 'peers from other activities' they, for example, may make a note that references something specific (or they may merely verbalise this), that 'family member' refers to someone in particular or they may use blank cards to indicate something not suggested.

- Ask why they arranged the cards this way or encourage them to explain their thinking.

For interviews during the pandemic, this was converted to an exercise using Padlet, an application which presents virtual sticky notes.

List of Cards:

• Peers in subject area	• Subject
• Office mates (where relevant)	• School
• Peers within School	• College Graduate School
• Peers from other activities	• Scottish Graduate School
• Primary supervisor	• Peers from other universities (subject)
• Secondary supervisor	• Peers from other universities (training)
• Other supervisor	• Partner
• Advisor of studies	• Roommates
• Other academic staff member	• Friends
• Local administrative staff	• Family member
• Other administrative staff	• Blank cards

Interview Questions

Why did you choose to do a doctorate? (e.g., key motivating factors such career, funding availability, wanting to work with a particular supervisor, want to do research / research a particular area)

- Has this motivation changed over time? (I.e., do you still want to do it for the same reasons - have these reasons changed or evolved due your experiences)

Thinking about your student experience generally:

- would you say that your expectations were met / are being met in terms of why you chose to pursue a doctorate?
- what has helped you to progress?
- what has hindered you?
- What has been most surprising to you, positive and negative, about your doctoral experience?

Thinking specifically about your experience as a student who is part of a CTM:

- How would you describe being part of a CTM?
- How was being part of a cohort described to you? / What, if any, were your expectations of participating in a CTM? Were these met?
- What are the positive and negative aspects of being part of a CTM for you? Benefits? Downsides?

- How relevant is your experience of being part of CTM to your development as a doctoral researcher?
- Do you feel it has had an overall positive, neutral, or negative effect on your student experience and/or doctoral journey?

How would you describe / characterise your support networks during your doctoral journey?

- Are there particular groups that you feel part of and how have these supported you (referring to cards)?
- What kinds of support do these groups provide (e.g., social, emotional, academic, etc.)
- Who are the key actors in their support networks? What role do they play? Please explain and give an example. (inside or outside of the University – the question will be clear that detailed personal information is not required)

Have you participated in compulsory cohort events, networking, training, or activities?

- What kinds of events or training courses?
- Was their experience of this positive or negative?
- What was the benefit (or otherwise) of this participation?

Have you participated in non-compulsory cohort events or activities?

- If yes, what compelled you to participate?
- What kinds of events or training courses?
- What benefits (or otherwise) did you feel that this has provided?
- If you haven't participated, was this a choice or are there particular barriers to participation? Or both? If this was a choice, why have they chosen not to participate.

What would you change about the CTM, if you could change anything (within reason) about your experience?

If a potential PhD student who is seriously considering being part of a CTM approaches you and asks for advice, what would you say?

9.2 Participant Information Sheet

Study Title: Understanding the contributions of UKRI-funded cohort-based doctoral training models to the doctoral journey from the perspective of the individual student experience

Researcher: Mary Beth Kneafsey (Student, Doctorate in Education)

Thank you for reading this. You are being invited to take part in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

This research is being conducted as part of the Doctorate in Education (EdD); a professional / practitioner-based doctoral programme at the University of Glasgow. I am investigating a question related to my professional context – that is, from the perspective of postgraduate research students (PGRs), how do UKRI-funded cohort-based training models (CTMs) contribute to the doctoral journey or doctoral learning and development? The purpose of the research is to begin to understand the experiences of PGRs rather than the measurable outcomes (e.g., time to submission, number of publications, first employment destination) that are generally reported in formal evaluations of CTMs. It is hoped that evidence of good practice and what has mattered to students' experiences will emerge from the study and can be implemented or shared, thus improving the overall student experience. Universities are also measured on their ability to win this type of funding and it is hoped that a better understanding of what students value about their experiences will enable the university to improve its approach to designing and delivering CTMs.

I am a staff member at the University of Glasgow with a remit for University policy and strategy related to PGRs. As well as forming part of assessed work for the EdD, discussion or analyses of the results may be tabled at University committees or presented at internal or external conferences. No participants will be identifiable from any output of this work. As a staff member, I am receiving funding for tuition fees for this programme of study. However, neither the University nor my line management have any direct influence on this work or expectation of any outcome. My pursuit of this programme is entirely for personal and professional development.

PGRs who are funded through UKRI CTMs and who are in their second or later years are being invited to participate in an interview via Zoom lasting approximately an hour. This discussion will encourage students to reflect on their experiences of CTMs from their own perspectives and discuss what, if any, value they feel they have derived from their experiences. It is hoped that in addition to the contributions that participants make to this study, that students will find the reflection on their experiences both positive and beneficial. Participation is entirely voluntary.

To facilitate discussion about their doctoral journey, participants will be asked to undertake a short (online) card sorting exercise that will enable reflection on how their cohort experience fits into their doctoral experiences. Padlet, an online tool accessed via a link provided to the participant, will be used to replicate index cards which participants will be asked to sort to reflect the importance of various actors to their doctoral journey. A screenshot will be taken of the ordered cards and the data in Padlet deleted immediately. These screenshots will be stored alongside their matching interview transcripts, anonymised as noted below.

The interviews will last approximately one hour and will take a semi-structured format. If an individual should feel that the interview is impacting them negatively, they may take a break, terminate the interview, or withdraw their consent for participation. Participants may elect not to answer particular questions without further explanation. Where participants feel that they have been impacted negatively, the researcher will endeavour to ensure that they are directed to appropriate support if this is required, such as those on his web page: https://www.gla.ac.uk/myglasgow/students/safetyhealth/

Interviews will be recorded using functionality in Zoom for the purposes of transcription only. Each interview transcript will be identified by a numerical identifier with a key stored separately. The recordings and the key will be deleted once the transcription is complete and the required assessment is completed, submitted, and examined (no later than 31 December 2022).

Participants will be sent a short, 1-page maximum, summary of the interviews by email along with an invitation to comment on its accuracy or offer further reflections. Any email replies will be stored alongside matching interview transcripts, anonymised as noted above. Participants may review the full transcript of their interview on request. Outputs related to this study may contain anonymous quotes from individuals who will not be identifiable.

Participants may withdraw from the research, without penalty or providing a reason, via email request to the researcher within 14 calendar days of their interview. No data relating to any participant would be retained without explicit permission. Otherwise, all data would be removed from the study and permanently deleted.

All data relating to the study will be stored as password protected files on university servers. Access to these files will be limited to the researcher. Files containing any personal information (e.g., the list of participants, the identifier that links them to their interview and their consent forms) will be held as noted above until the assessment process for the programme is complete. Transcripts of interviews along with any analytical data and photographs of card sorting exercises will remain in storage for a period of 10 years (from the intended submission of assessed work in May 2022) as required by University policy. Researchers, including the supervisor of this project, other than the EdD student will only have access to de-identified research data.

Confidentiality will be respected unless there are compelling and legitimate reasons for this to be breached. If this were the case, we would inform you of any decisions that might limit your confidentiality. This is a small study and while confidentiality may be impossible to guarantee, every effort will be made to ensure that participant identities remain confidential.

This study has been considered and approved by the College of Social Sciences Research Ethics Committee. Any concerns or complaints regarding the conduct of this project should be directed to the College of Social Sciences Ethics Officer, **Dr Muir Houston, email:** Muir.Houston@glasgow.ac.uk.

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9.3 Glossary of Acronyms

AHRC	Arts and Humanities Research Council
CRAC	Careers Research and Advisory Centre
CDT	Centre for Doctoral Training
DTP	Doctoral Training Partnership
EPSRC	Engineering and Physical Sciences Research Council
ESRC	Economic and Social Research Council
HEI	Higher Education Institution
LERU	League of European Research Universities
NERC	Natural Environment Research Council
PRES	Postgraduate Research Experience Survey
QAA	Quality Assurance Agency
RDF	Researcher Development Framework
RDS	Researcher Development Statement
SCQF	Scottish Credit and Qualifications Framework
SGS	Scottish Graduate School
SGSAH	Scottish Graduate School for Arts and Humanities
SGSSS	Scottish Graduate School of Social Sciences
UKCGE	UK Council for Graduate Education
UKRI	United Kingdom Research and Innovation