Supporting Employees in their Development

Exploring the role of tailored support in informal learning

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In memory of Jayne McGlynn

22nd June 1961 – 3rd September 2011

The person who taught me the most important things I know,
who inspired me to work hard and never give up,
and instilled in me an insatiable curiosity for learning.

Abstract

Informal learning is relatively underexplored in the work psychology literature, with most existing efforts tending to focus on formal learning or general workplace learning. This thesis develops understanding as to how employers can best support their employees' informal learning, using samples drawn from a large UK energy firm, a small UK charity, and an international telecoms business.

The study is of a mixed methods design: a qualitative study, in which 31 interviews and 900 open-ended survey responses are thematically analysed, explores the barriers that learners may face when attempting to engage in informal learning, as well as the roles that other groups of people play in supporting, or hindering, learners' informal learning.

The quantitative study tests hypotheses relating to personality (curiosity, proactive personality, Big Five, age, tenure) and situational factors (interpersonal support, time demands, autonomy) that may predict informal learning, contrasting how these relate to formal learning and intention to develop. Relative importance analysis and mediation analyses are also carried out so as to better understand the importance of, and the processes that may underlie, these antecedents. Differences between groups of employees are also tested.

The findings from both studies are discussed separately, and are later integrated to form a broader understanding of how employers might support informal learning. Together, both studies offer new suggestions for both research and practice, especially in terms of curiosity, autonomy, and the consideration of support sources outside of the workplace. The study is one of a few to focus on informal learning, and is the first to consider the differences between informal and formal learning, and between incidental and intentional informal learning.

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Without participants, all of this would not have been possible. Thank you to all of those who responded to my requests for help, welcomed me into their organisations, and helped develop my research design into something practicable and meaningful. Stu, Helen, Craig, Kelly, Mark, Tanya, and Jodie: thank you. Thank you to all of those who participated in my research; I hope that, through my thesis, I've been able to tell your story.

Although we tend to focus on those within the workplace, those outside of work also have an important role to play in supporting our learning (but more on that in Chapter 3). My experience parallels that of my studies' findings, in that my family and friends have played one of the most important supportive roles for me.

Most of my family has no real idea about what I do or what it all means – but thanks to my dad and Mammar for trying to get their heads around it! There are some family members who aren't here anymore, but also to whom I owe my thanks. My two grandads both sadly passed away during my writing-up year; both played such an important role in encouraging the younger me to discover, to explore and to challenge thinking – all of which has been critical in the doctorate. Although my mum isn't here in person anymore, she's been with me throughout, holding my hand through those moments of doubt and difficulty.

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1. Introduction

1 Summary of the Thesis

This thesis focuses on how organisations can best support their employees' informal learning. Informal learning, in contrast to formal learning, is predominantly directed by the individual, rather than the organisation, and takes place outside of a traditional classroom or training setting. Whilst there is plentiful academic research into how formal learning can best be supported, from training design through to training transfer and evaluation, there is relatively little research into fostering effective informal learning. This is despite reported estimates that between 70% and 90% of employees' work-related knowledge is gathered through informal learning.

1.1 Research Objectives and Questions

The general research objective of the thesis is to determine the ways in which employers may best support their employees' informal learning.

In this thesis, eight research questions are addressed:

RQ1: What barriers do employees perceive may hinder informal learning?

RQ2: What roles do other people play in supporting employees' informal learning?

RQ3: Do individual differences (proactive personality, curiosity, Big Five, age, tenure) predict an employees participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

RQ4: Do situational aspects (autonomy, interpersonal support, time and role demands) predict an employees participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

RQ5: Which of the personality and situational antecedents studied are most important in explaining the variance in (a) informal learning participation, (b) formal learning participation, and (c) intention to develop?

RQ6: Which of the personality and situational antecedents studied are mediated by intention to develop in predicting (a) informal learning participation, and (b) formal learning participation?

RQ7: Are there differences in informal learning participation, formal learning participation, and intention to engage in learning (a) between home-workers and office-workers; and (b) between managers and non-managers?

RQ8: Do individual differences and situational factors predict informal learning participation, formal learning participation, and intention to engage in learning in different ways for (a) home-workers and office-workers, and (b) managers and non-managers?

The justifications and reasoning behind these research questions are presented in Chapters 3 and 4.

1.2 Strands and studies

The first two of these research questions are addressed through a qualitative study (Chapter 6), using interviews and the repertory grid technique in two organisations. 21 individuals from a large UK "Big Six" energy firm and 10 individuals from a small UK charity were asked questions about their experiences of informal learning. Thematic analysis is used to establish higher order categories that offer insight into how others - from managers and direct reports through to family and friends - support informal learning and how these different sources vary in comparison to one another.

The remaining research questions are addressed through a quantitative study (Chapter 7), using an online survey completed by 1,800 employees of a large multi-national telecoms business. In this questionnaire, employees were asked to complete established measures relating to their personality (Big Five, proactive personality, trait curiosity), their work environment (development support from various sources, autonomy, time and work demands), their intention to develop, and their self-reported participation in a number of informal and formal learning activities over the past three months. Through a series of regression analyses, a number of hypotheses are tested relating to how individual and situational variables predict intention to develop, informal learning and formal learning. Differences in how these variables predict, or fail to predict, each of the three outcomes are discussed. Further analyses are carried out to develop understanding of these antecedents, including a relative importance analysis to determine which antecedents explain the most variance in participation, a mediation analysis to assess whether antecedents' effects on participation are mediated through intention to develop, and a comparison of learning participation and predictors between groups of home-workers and office-workers, and between groups of managers and non-managers. These groups are chosen as there are assumed to be differences in the ways in which these two groups may engage in informal learning; further reasoning is offered in Chapter 4.

The two studies combine to offer a rounded view of informal learning and how it may be supported. The thesis concludes with a consideration of how these two studies, which employ a mixture of methods, may complement each other in developing understanding of informal learning.

1.3 Contributions

The thesis offers a number of contributions for both the academic and organisational understanding of informal learning. Academic exploration of informal learning is still in its infancy, and so a quantitative testing of variables

that may predict informal learning can offer important insight, especially when tested with such a large and diverse sample outside of the US. Few studies have explored the relationships between both individual and situational variables in predicting development activities, and none to date have considered the differences between informal and formal learning. The qualitative research questions offer new insights too. Whilst other areas of work psychology, such as the study of careers or in-depth studies of mentoring, have considered the role that others play in supporting or hindering learning, this idea is somewhat novel in the learning literature, particularly in the consideration of non-traditional sources such as direct reports, contractors and family. Existing qualitative research, particularly that relevant to the research question tackling barriers to learning, is also limited in that such studies have primarily considered formal or general workplace learning, rather than informal learning specifically. In practice, the thesis suggests a number of new avenues for organisations to be able to offer guidance and support to their employees, and develops awareness of important factors that organisations and employees should consider that they may not at present.

2 THESIS STRUCTURE

The thesis is made up of eight chapters, of which this is the first and offers an overview of the thesis and a summary of the forthcoming chapters.

Chapters 2, 3 and 4 review the existing literature. Chapter 2 outlines the definitions of learning and informal learning, and outlines the context in which learning operates. Particular consideration is given to the operationalisation and measurement of informal learning. Chapter 3 explores how employers may support their employees' informal learning, suggesting reasons why employers may need to offer such support, before reviewing existing work that has identified barriers to informal learning, and considering existing literature that may offer explanation as to the ways in which other people support, or hinder, a learners' efforts. This chapter proposes two research questions, which are later answered through qualitative study. Chapter 4 sets the scene for the later quantitative study, reviewing existing literature that has examined the antecedents of informal learning. Identifying these antecedents may be especially important for employers who wish to identify those who are less predisposed than others to engage in informal learning, so as to offer them targeted support. In this chapter, a number of specific hypotheses are proposed that are later tested in Chapter 7.

Chapter 5 acts a segue between the literature review chapters and the results chapters, and offers a number of philosophical and methodological discussions, outlining the case for mixed methods research and the choice of research design.

Chapter 6 and 7 are the largest, and key, chapters, and consider the qualitative and quantitative study strands respectively. In each chapter, a summary is offered of the research questions and arguments, the method is presented and justified, the results are presented in respect of the research questions, and these results are then discussed and critiqued in line with the existing literature.

The final chapter, ***Chapter 8***, then integrates the findings of the two research strands discussed in Chapters 6 and 7, and overarching themes are identified and discussed. The contribution of the thesis to both the academic understanding of informal learning, and to organisations and practitioners, is considered, before suggestions of limitations and future research areas are identified and discussed.

2. Defining and measuring informal learning

1 SUMMARY

The chapter begins by introducing a broad definition of learning and development, before considering the value of learning in the contemporary workplace, setting the scene and explaining how aspects of the modern workplace have made learning vital for both individuals and organisations to flourish. This leads into a discussion of the various types of learning that have been studied, and how this thesis sits in relation to these competing definitions.

The chapter finishes with an in-depth focus on informal learning, introducing the theoretical foundation for informal learning, and exploring what this means in practice: bringing in the limited research of 70:20:10 thinking, and considering the different types of development activities that could constitute informal learning.

The aim of the chapter overall is to provide key definitions and stress the importance of informal learning as a topic of research, explaining how it is the opportune moment to consider how employers can support their employees' informal learning.

2 DEFINING LEARNING

Learning is a term in common parlance and many people may hold different ideas as to what exactly is meant by 'learning'. As such, it is sensible to begin by clearly defining what is meant by 'learning' in this thesis.

The definition of learning used in this study, and communicated to participants during data collection, is that of Noe, Clarke and Klein (2014): "the process of employees enhancing their human capital through acquiring knowledge, skills, abilities, and other characteristics". Human capital refers to the economic value, or cost, placed on the skills, knowledge and other intangible attributes possessed by an individual, defined by Aguinis and Kraimer (2009) as "the collective set of performance-relevant knowledge, skills, and attitudes within a workforce (at an organisational or societal level)". This development of human capital may be important for the employee as they acquire new knowledge, skills or abilities to perform better in their current job role, develop in their career and be more employable, and better manage their work-related life.

The learning and development literature has often fluid distinctions between learning-related terms, with key terms of 'learning', 'training' and 'development' often being used interchangeably. As highlighted by Garavan (1997), in his review of learning and development terms, absolutist definitions are not helpful, either

for academic purposes or in the practical context of human resource development, and it is better to see all three terms as an integrated whole.

3 THE VALUE OF LEARNING

Workplace learning offers a number of benefits for both employers and employees, which are discussed in this section. The world of work is continually changing, and both employers and employees have to be adequately equipped so as to be able to respond, adapt and keep up in an ever-evolving world. Learning is an important part of this process.

3.1 THE CHANGING NATURE OF WORK

The context in which organisations and their employees operate is continually evolving and changing, with changes in the wider environment affecting the way in which people learn. Workplaces have seem several changes over the last few decades, such as increased globalisation and growing use of new technology, which, as well as being challenges to which employers and employees must adapt, have also offered new opportunities and ways of working. Broader macroeconomic issues, such as the financial crisis of 2008, unemployment, and economic uncertainty have meant that both organisations and employees are greatly aware of the need to remain relevant, financially sustainable and employable. Such broader issues are never likely to cease, with new challenges on the horizon, including Brexit and the surrounding unpredictably, and the growing phenomenon of deglobalisation.

Organisations have had to adapt in terms of changing roles of the organisation too, with a growth in the knowledge and services industries, an increasing focus on customer service, and new roles and industries geared towards technological trends, such as e-business. Employers also face new challenges with their employee base, with increasing diversity of employees, particularly in terms of the number of different generations now working together. Employees are now often thought to be values-led in their quest for job roles, which again provides new challenges for organisations.

Jobs themselves have changed and evolved, with newer jobs requiring increased cognitive complexity than before, more team-working and collaboration, and a shift from manual, routine work to knowledge-based and creative work. With the rise of automisation, there are fewer manual labour roles, and there has been a growth in jobs requiring computer skills and analytical thinking. All of these changes have meant that skills needs have changed, and so employees need to engage in continuous learning in order to remain employable.

Employees also face challenges in terms of changing work environments, with shifts from face-to-face interactions and hands-on activities to tasks and social interactions that involve and are mediated by technology. Workplaces are more dispersed than before, with teams more likely than before to work in multiple or mobile locations, with team members sometimes working from home.

Contracts have also changed – placing increased pressure on employees to manage their learning so as to remain employable. Zero-hour contracts are more common than ever before, with a shift from persistent employment and "jobs for life" to temporary employment and short-term contracts, and the emergence of the new so-called "gig economy" as seen with the likes of Uber. Working hours are more likely to be flexible than fixed in the modern workplace, with employees having greater control over their time.

All of these changes have meant that our existing models of how organisations work, and the corresponding role of human resource management, have become prisoners of the time in which they were developed. Psychologists, therefore, have to keep up with the context of the changing workplace, testing and developing existing models so that they still work for the organisations and workers of the future.

3.2 Benefits for the Organisation

Individual and organisational learning is key to a successful organisation, and as Jack Welch, former CEO of General Electric, states: "An organisation's ability to learn, and translate that learning into action rapidly, is the ultimate competitive advantage".

This benefit for the organisation may come about through increasing the organisation's ability to be flexible and maintain competence in the face of rapid change, and uncertainty in the environment. It may also be through increasing the organisation's ability to innovate, and hence to compete more effectively in the market.

Research has found that learning, whether that be the provision of resources for building human capital, or a general learning culture in the organisation – can benefit the firm's performance. For example, a meta-analysis by Crook et al. (2011), covering 66 studies, found that human capital resources were strongly related to firm performance.

Learning organisations have been shown to demonstrate benefits in other ways, including sustained competitive advantage and financial performance, as seen in a study of 6,000 organisations across 15 countries (Shipton, Zhou & Mooi, 2013); an increased net income per employee, percentage of sales from new products, knowledge performance, and self-reported financial performance (Davis & Daley, 2008); and reduced staff turnover (Joo, 2010).

Bersin and Associates (Mallon, 2010) explored the value of learning culture to measurable business outcomes, interviewing and surveying over 40,000 international organisations. The researchers found that organisations with a high-impact learning culture showed 37% greater employee productivity, a 34% better response to customer needs, 26% greater ability to deliver quality products, were 58% more likely to have skills to meet future demand, and were 17% more likely to be a market share leader.

The provision of learning activities also has a number of indirect benefits for the organisation, such as the attraction, retention and motivation of employees. Such

benefits are discussed in detail in Chapter 3, which considers the benefits of supporting informal learning.

3.3 Benefits for Employees

Continuous learning is vital in navigating the "permanent whitewater" (Vaill, 1996) of today's competitive talent market and a so-called 'boundaryless' career environment. As Molloy and Noe (2010) state: "the survival and adaptability of individuals in today's talents market depend on their 'learning' a living, that is, refining and adding to their skill sets throughout their careers to adapt to ever-changing requirements".

As discussed in the consideration of broader contextual factors, employability is a key benefit for employees, with the development of human capital that is important for maintaining and developing employability. Indeed, employability has been found to be highest in the presence of both formal and informal learning (Van der Heijden et al., 2009). Employability can offer a number of subsequent benefits, such as job promotion, increased job security, increased pay and reward, and allowing one to reaching one's potential. Learning can also help employees better cope with their current role, possessing the skills and know-how to better handle their work tasks, which may in turn reduce their stress or increase their efficiency at work.

4 Categorising Learning

Learning can take many different forms, and the psychological and human resource literature has considered learning in a number of ways. These are considered so as to set the context in which the thesis is positioned.

One way in which learning can differ, and that is key in this thesis, is in terms of its ***formality***. Learning can be classified as formal or informal, or more realistically, learning activities are placed on a continuum between these two scale-ends. Formal learning includes those activities that tend to be organisationally-controlled or classroom based, such as training courses or educational qualifications. Informal learning, on the other hand, is often more integrated into the workplace and individually-controlled.

Informal learning itself can also be broken down into different types of learning: it can be intentional, in which it is purposeful or deliberate, and learners plan and intend to gain something from participating in the learning experience; or it can be incidental, in which learners unintentionally acquire new skills or knowledge as a result of participating in a non-direct learning experience, such as their day-to-day work.

Other researchers and practitioners have used the term non-formal learning too (e.g. CEDEFOP, 2008). In such categorisations, this different terminology has been used in a similar way to that of incidental and intentional informal learning: with 'non-formal learning' equivalent to intentional informal learning, and 'informal learning' equivalent to incidental informal learning.

Learning can also be termed as ***explicit or implicit*.** Explicit learning is that in which the learner is consciously aware of the learning and what they have learned. Implicit learning is more unconscious, with the learner less aware of their learning participation. They may gather explicit knowledge, which can be articulated and written down; or tacit knowledge, knowledge which is difficult to express or communicate to other people.

Another way in which learning can be categorised is in terms of whether the activity's principal object is working or learning (Eraut and Hirsch, 2009). In their categorisation of learning activities, illustrated in Table 2.1, Eraut and Hirsch place learning processes into one of three groups: *work processes*, activities that primarily are driven by day-to-day work, and learning occurs as a by-product; *learning processes*, activities that are focused on learning for learning's sake; and *learning activities*, activities that are embedded either within work processes or learning processes.

Work processes with learning as a by-product	**Learning activities** located within work or learning processes	**Learning processes** at or near the workplace
• Participation in group processes • Working alongside others • Consultation • Tackling challenging tasks and roles • Problem solving • Trying things out • Consolidating, extending and refining skills • Working with clients	• Asking questions • Getting information • Locating resource people • Listening and observing • Reflecting • Learning from mistakes • Giving and receiving feedback • Use of mediating artefacts	• Being supervised • Being coached • Being mentored • Shadowing • Visiting other sites • Conferences • Short courses • Working for a qualification • Independent study

Table 2.1: Eraut and Hirsch's (2009) categorisation of learning activities.

Learning can also differ in terms of its **timing or timeframe**. Just-in-time learning is becoming a common type of delivery, with learning being delivered just before the learner needs to use it in their work; such just-in-time learning is thought to be effective as it reduces the time between learning and actual usage, thus increasing the likelihood of learning transfer. Similar to just-in-time learning is reactive learning, in which individuals set-out to learn a particular skill or acquire particular knowledge in order to accomplish a particular task or challenge that has arisen. Learning can also occur in advance, a long time prior to when it is needed, as is often the case with educational qualifications or training courses for general skills. *Inductions* are a particular type of learning, typically organisation-driven, which are carried out when employees join an organisation. *Lifelong* or *continuous learning* relates to ongoing learning and is typically more career-focused.

Learning can also be focused on ***certain methods or approaches***, and terms such as social learning, experiential learning, and e-learning are regularly seen in the learning and development literature. Social learning (Bandura, 1962) is a type of

learning that relies on the learner's relationship with other people, with learning occurring through observation, imitation and reinforcement of and by others. Experiential learning occurs through engaging in new and challenging experiences, and tends to offer a deeper and more engaging learning experiences, often with greater context than classroom learning (Moon, 2004; Nonaka, 1994). E-learning is also a popular delivery method of learning in the modern age, especially given the easy access to technology and the dispersed nature of the workforce. E-learning is training or learning that is primarily delivered through the Internet, such as an online course.

'Organisational-learning' and 'self-directed learning' relate to who ***directs and takes ownership*** of the learning process. Organisational-directed learning tends to be dictated or led by the employer; whereas self-directed learning is a type of learning where the learner initiates their own learning and decides the activities in which they participate. Learning can also differ in terms of its ***specificity***, being just job-specific learning, or professional learning that is more relevant to one's broader occupation or career.

Realistically, although there are many ways in which one can categorise learning, there are regular overlaps between the different learning types. For example, most types of informal learning will involve a mixture of explicit and implicit learning, will usually be self-directed rather than organisational-directed, will tend to be reactive or just-in-time learning, and will encompass a range of different methods. Thus, it is necessary to outline and clarify exactly how this thesis considers informal learning.

5 INFORMAL LEARNING

Informal learning is a broad concept, with definitions of informal learning highly inconsistent amongst different disciplines. This research adopts the definition prominent in the work psychology domain: that informal learning is learning that typically occurs outside of the classroom, is not highly structured, and is primarily controlled by the learner (Marsick & Watkins, 1990).

In their recent book chapter reviewing the state of informal learning in relation to Learning and Development, Tannenbaum and colleagues (Tannenbaum, Beard, McNall & Salas, 2010) propose four components of informal learning, which also form the theoretical foundation for this thesis:

1. *It is predominately learner-directed and self-guided.* The learning is individually, not organisationally, controlled. This does not mean that the learning has to be initiated by the individual; it can also be initiated by others, such as the organisation creating a secondment, or a mentor who instigates a mentoring relationship. Informal learning does, however, have to be *owned* and *adopted* by the individual, whether they intentionally set out to engage in learning, or incidentally take advantage of an opportunity that arises as part of their daily work activities.

2. *It reflects at least some intent for development, growth, learning or improvement.* There is debate over whether informal learning includes elements of intentional or deliberate learning, as well as incidental or spontaneous learning (Eraut, 2004; Hodkinson & Hodkinson, 2004). In this thesis, these elements can be intentionally-crafted learning opportunities, or they can occur as a by-product of on- or off-the-job activities in which learning is not the primary goal. Informal learning in this context only includes learning that is part of one's broader goals for development and growth. As such, intentional learning – that where the learner purposefully sets out to learn in order to develop – would be considered as informal learning. Incidental learning, however, may differ depending on the context. Incidental learning of which the learner is not conscious or that is not recognised by the individual as contributing to their work- or career-related development would not be considered as informal learning. However, incidental learning would be recognised in which the learner takes advantage of an opportunity and then is able to reflect and build on this in terms of seeing how it fits into their growth and development.

3. *It involves some action and doing, and is not purely education*. The learning activity must involve an element of doing or cognitive action. Activities such as reading or browsing the internet are not sufficient by themselves; the employee needs to reflect after reading or adapt their behaviour as a result.

4. *It does not occur in a formal learning setting.* Again, this excludes formal learning activities, such as classroom learning, training, or structured e-learning courses that lead to qualifications or formal organisational recognition. That said, individuals can use formal learning opportunities as a vehicle for informal learning; for example, they may attend a training course in order to network with others, rather than learn from the intended aims and goals of the training course itself.

5.1 THE GROWING POPULARITY OF INFORMAL LEARNING

There has been limited study of informal learning in academic circles, with most work in this area tending to either focus on formal learning activities, such as training, or more general development activities. However, in recent years, informal learning has grown in popularity in HR and learning and development departments, and we are left in a situation where practice is leading the way, ahead of academic research, but often without any rigour or scientific thought.

Informal learning is one of the most important and most common development methods in organisations. Estimates repeatedly predict that between 70% and 80% of learning in the workplace is done through informal learning (Bear et al., 2008; Center for Workforce Development, 1998). Breaking this down further, looking at how managers learn, it is estimated that 20% of learning is through formal learning, 30% through relationships, and 50% through challenging experiences (Marsick, 1988; Zemke, 1985). This breakdown of how we learn has

been popularised in practice, and is known as the 70:20:10 model (Jennings, 2013). The 70:20:10 model, although not evidence-based, posits that 70% of learning is through experiences, 20% through social means, and 10% through formal training and education. Similarly, informal learning has been found to be important in providing essential skills core to people's jobs. A survey of development practices of 1,100 employed individuals across 10 European countries found that 55% see such self-directed learning as providing knowledge and skills necessary to perform their current job (Brown, Bimrose, Barnes, Kirpal, Gronning, & Daehlen, 2010).

However, whilst there are many estimates of informal learning in the workplace, these figures remain estimates at best. In reality, informal learning is somewhat difficult to measure, especially given the wide array of activities that can fall under the 'informal learning' umbrella.

The growth of interest in informal learning is likely to have come about for several reasons. As discussed earlier, changes in the working environment, particularly in terms of technology and the decentralised workspace are likely to have increased the possibility of and need for learning informally. With better technology, it is now easier than ever before for employees to access work from home, connect with colleagues over the internet, engage in videoconferencing, take part in online discussions, network with like-minded people online, and easily find online information and videos. Technology also becomes more important as workforces become more dispersed, as a result of the likes of globalisation and an increased demand in home-working. With workforces less likely to be working together on the same site, formal learning may be harder to deliver across many employees, and may be replaced by informal learning.

It is also inevitable that economic issues have played their part in the growing popularity of informal learning, with informal learning typically less costly than formal learning programmes. Indeed, in 2010, the Chartered Institute of Personnel and Development (CIPD) found that over half of organisations surveyed were forced to cut their training budgets (CIPD, 2011). Not only do formal learning programmes have the cost of a trainer, but there is often the cost of a venue, of travel and accommodation expenses, of learning materials, and the opportunity cost of employee time. As companies have looked to find ways to cut costs, learning and development budgets are often one of the first to be cut back, and so learning and development strategies may have compensated by passing more of the learning responsibility on to the employee, away from the employer.

It is also to be recognised that informal learning may be more effective than formal learning for certain tasks. Informal learning reflects the way people learn naturally on the job, and given that it will often take place in a work setting - as opposed to a detached setting such as in a classroom - it may offer a more meaningful learning experience (Rossett & Nguyen, 2012; Tannenbaum et al., 2010). Informal learning is also easier to initiate in many cases than waiting for a training course, and so is better suited to learning on an as-needed basis, whenever employees encounter an immediate need to learn, or believe a situation provides an opportunity to learn. That is not to say, however, that formal learning is without its benefit. Formal learning can be particularly effective

in offering a foundation of knowledge and skills on which employees can build, and also offers a demonstrable way to show that the employer has showed a duty of care in critical areas such as health and safety. However, many studies have called into question the extent to which formal training is transferred into the workplace (e.g. Baldwin & Ford, 1988; Kozlowski & Salas, 1997; Tews & Tracey, 2008), which again may mean that learning and development departments explore other forms of learning that they believe may offer a better return on investment.

Despite the popularity and ubiquity of informal learning, participation in informal learning can be somewhat difficult to measure. Compared to organisational-led initiatives, such as training courses, employers will not have records of participation in informal learning. We therefore have to rely on employee self-reports (Birdi, Allan & Warr, 1997), which itself then exposes us to recall biases and different perceptions as to what counts as participation. It is therefore useful to consider the informal learning activities available to individuals, so as to help define and standardise participation measures.

5.2 Measuring Informal Learning

There is a wealth of informal learning activities in which individuals can participate, and given its informal nature, it can often be hard to identify particular activities or examples of informal learning. However, in order to begin to try and measure informal learning, it is necessary to establish a taxonomy of learning activities in which employees may participate. While this is unlikely to be exhaustive, a limited list of learning activities is of greater benefit than no list at all.

In an attempt to bring together the range of informal learning activities in which employees participate, Cunningham and Hillier (2013) conducted a survey of informal learning practices across 40 supervisors, subsequently identifying and classifying activities into one of three categories: learning activities, learning opportunities that enlarge and redesign the job, and learning opportunities that enrich the job.

Learning activities included practices such as informal mentoring, which have shown greater success compared with formal mentoring (Chao, Walz, & Gardner, 1992), and peer relationships, facilitating honest, open and fresh viewpoints on work. Trusted peers can often provide support, offer feedback, and provide ideas to improve performance and interpersonal skills (Eddy et al., 2005).

The second category, around *enlarging and redesigning jobs*, included temporary job changes, such as a temporary assignments, special projects and job rotations; cross-training, whereby employees take on part-time assignments to learn aspects of others' core work so they can cover them if they are away; and stretch assignments, which cover projects and responsibilities beyond the job description to develop new competencies and prepare employees for greater responsibilities. Such stretch assignments could include taking on the role of health and safety representative or shop steward. A related idea that may fall under this category is the idea of matrix learning, in which individuals based in one department contribute to cross-organisational projects, sharing their expertise, using skills

underutilised in their current role, and developing new competencies (Quinn, Faerman, Thompson, McGrath, & Clair, 2007).

The final category considers ways in which individuals can *enrich their jobs*, such as acting management opportunities, full-time temporary assignments, or regular on-the-job opportunities, such as webinars, discussion forums and seminars.

Whilst Cunningham and Hillier (2013) do an excellent job of identifying informal learning practices and the processes underpinning them, their classification is somewhat unclear, leaving many cross-overs and poor functional distinctions between the categories.

Other academics have also attempted to form taxonomies for development activities, and whilst not specific for informal learning, these taxonomies incorporate many informal activities. For example, Noe, Wilk, Mullen and Wanek (1997), proposed the separation of development activities into four categories: *employee assessment, on-the-job experiences, formal courses and programmes,* and *professional relationships*. Three out of four of these categories could be said to cover informal learning activities. It was only recently, however, that Noe and colleagues' suggestion was adopted and used to form a proper taxonomy (Hurtz & Williams, 2009). Here, a wide range of development activities were outlined and organised in a two-tier hierarchical manner, and participation measured through asking employees how often they had participated in each activity over a given time-period.

1. *Feedback-seeking activities* – asking colleagues, supervisors and recipients of work (e.g. clients) for feedback on job performance and areas for development, as well as time taken out for self-evaluation and self-reflection.
2. *Job experience activities* – behaviours that involve changing the nature of work tasks, so as to learn from new on-the-job experiences. Such experiences include secondments and promotions, taking on additional projects or responsibilities, or swapping assignments with colleagues
3. *Formal learning activities* – all development activities include some form of learning, so this category includes more traditional activities, such as participation in training and college courses, as well as reading books and periodicals.
4. *Professional relationship activities* – development through building relationships with other people, including participation in coaching and mentoring, networking with different people, and working alongside colleagues or seeking advice from more experienced employees.

This taxonomy is particularly beneficial in measuring learning participation: it offers a list of sixteen activities, four per category, which can help quantify learning participation. Particularly useful are its response options, which, rather than a general scale, ask how often one has participated in each individual activity over a recent time-period. This choice of response options means that responses are less likely to be biased by one's perception of how the frequency scale should work, and responses are instead anchored in real-world behaviours.

Given the benefits of this measure, Hurtz and Williams' taxonomy therefore, is part of the basis for the measurement of learning activity participation in this study. This measurement is also informed, however, by Noe et al.'s (2013) more recent measure of informal learning, in which they split informal learning into three types: *learning from oneself*, reflecting and experimenting; *learning from others*, interacting with others, seeking feedback, shadowing; and *learning from non-interpersonal sources*, implementing new skills through reading trade publications and searching the Internet.

Noe and colleagues group learning activities in different ways to Hurtz and Williams, and indeed Noe and Wilk's (1993) earlier theoretical categorisation of activities. Learning through 'job experiences' becomes incorporated into 'learning from oneself'; 'feedback-seeking activities' and 'professional relationship activities' seemingly are merged into 'learning from others'; and 'learning from non-interpersonal sources' is a new focus, seemingly bringing in some activities previously categorised with 'formal learning'. 'Learning from oneself' may also be an inappropriate category for categories involving experimentation, especially given that trial-and-error on-the-job will often involve other people, especially in the provision of feedback and sharing of ideas.

This re-categorisation has both merits and drawbacks: shedding new light on how activities may be viewed, but also grouping relatively distinct activities together, possibly reducing the possibility to explore differences between activity groups. Instead, it may be more beneficial to merge both Hurtz and Williams' and Noe and colleagues' measure to offer a more meaningful and practically useful taxonomy of learning: *learning by oneself*, focussing on activities that primarily involve only the learner, such as reading magazines or books, or watching online videos; *learning through trial-and-error*, grouping experimentation activities together separate from other activities; *learning through job experiences*, focussing on how individuals can learn by taking and crafting new experiences, work tasks or job roles; *learning through feedback*, focussing on the seeking and processing of feedback from other people; *learning through others*, incorporating on the more social methods of learning, such as sharing information with colleagues, or mentoring and coaching; and *formal learning activities,* primarily incorporating training courses and educational qualifications. This revised categorisation is used in this thesis.

6 SUMMARY

In this initial chapter, the definition and concepts of learning, and informal learning in particular, have been introduced and clarified. Informal learning, in contrast to formal learning, is learning that is predominantly unstructured, is led by the learner, and does not take place in a classroom setting. Tannenbaum and colleagues' (2010) theoretical basis for informal learning, based on Marsick & Watkins' (1990) conceptual development, is used as the basis for informal learning in this thesis. Informal learning brings together many other forms of learning that have also been studied, including experimental and social learning,

just-in-time and reactive learning, lifelong and continuous learning, and self-directed learning.

Informal learning has grown in popularity in organisations, yet the academic understanding remains at a basic level, far behind what happens in practice. Few studies have begun to explore informal learning specifically, with most tending to focus on formal learning or more general workplace learning. None to date have looked at differences between formal and informal learning (Kyndt & Baert, 2013). While this may be because informal learning, given its nature, may be somewhat difficult to measure, there are a number of developing taxonomies that may be helpful in prompting learners to recall and reflect on their informal learning participation. A categorisation of such activities has been presented towards the end of this chapter, revised so as to cover a broad range of activities in a meaningful way.

3. Supporting informal learning

1 SUMMARY

While informal learning is growing in its popularity in organisations, little is known about "how it can best be supported, encouraged and developed" (Marsick & Volpe, 1999, p. 3), a claim reaffirmed in a 2015 review of workplace learning by Manuti and colleagues (2015).

This chapter explores the reasons why it is important to understand how informal learning can be supported and encouraged, outlining benefits for both employees and employers. Although informal learning is often synonymous with 'self-directed learning', there are still plentiful opportunities for employers to benefit from supporting such learning.

The potential for support is considered from two angles in this thesis: from the perspective of barriers that may hinder one's engagement with informal learning; and in considering the wide array of other people who may influence learning, and the roles that they play in supporting or hindering this learning. While there is some existing work on barriers to learning, findings are mixed and tend to focus on general workplace learning, rather than specifically informal learning. Considerably less attention is paid in studies to the roles that others play, but other literature highlights the potential merit in further study in this area. Research questions relevant to these two areas of study are proposed, setting the scene for the qualitative research discussed in Chapter 6.

2 WHY SUPPORT INFORMAL LEARNING?

Supporting development and learning is a common concern of organisations. Although many employers take part in talent management activities, they tend not to see such schemes as wholly effective (CIPD, 2011).

Yet, the need for an effective learning and development strategy and programme remains important for businesses. Change is continual, with both employer and employees having to learn how to best handle globalisation (or deglobalisation), technological advances and the growing information industry, the blurring of boundaries between work and home, and increasing uncertainty in economic markets. Learning offers a way for organisations to develop their capability and for employees to develop their employability, helping both in their ability to adapt and meet future needs and challenges. Organisational leaders are regularly reported to be struggling to identify positive strategies and practices to tackle the new challenges facing the workplace (Feldman & Leana, 2000; Luthans & Youssef, 2007; Sullivan & Baruch, 2009).

By understanding the role of the organisation in assisting an employee's informal learning, it may be possible to improve the efficacy of current initiatives and

understand what support organisations and other external agents should be providing to individuals.

2.1 SOME PEOPLE MAY NOT BE ABLE TO LEARN EFFECTIVELY BY THEMSELVES

Informal learning, by its very nature, is self-directed and independent of formal schemes. That said, not all individuals have the know-how, drive, motivation, or opportunities to develop their career and skills themselves. Individuals can differ in their protean orientation (Hall, 2002), boundaryless mindset (Briscoe & Hall, 2006), career motivations (London, 1993) and career competencies (Arthur, Claman, & DeFilippi, 1995); all of which may affect self-directed participation in development activities. Research has also identified that individuals of certain dispositions – including personality factors such as the Big Five, Proactive Personality and self-efficacy, all of which are discussed in detail later – may be less prone to participating in development activities by their own accord (Hurtz & Wiliams, 2009; Maurer et al., 2003; Noe et al., 2013). Worryingly, research has also identified that those with fewer qualifications are less likely to participate in training and development activities (Boeren, Nicaise, & Baert, 2010), with this effect due to the fact that they associate learning with formal learning activities, which have negative connotations for them due to previous school learning experiences (Kyndt, Govaerts, Keunen & Dochy, 2013).

For these people who may lack the knowledge and motivation to take charge of their own development, support and guidance from others is likely to be of paramount importance. Without this support, they may fail to develop themselves fully and reach their potential.

2.2 EMPLOYEES MAY EXPECT SUPPORT

Organisations may wish to support employees if they are to attract and retain the most talented individuals, as it may be that their employees expect support for learning from their employer. A lack of support may lead to reduced commitment, increased intention to leave, and greater employee turnover. Research has found that employees who take more initiatives to manage their career expect more support from their employer (De Vos, Dewettinck, & Buyens, 2009), and a lack of organisational support and career management may reduce affective commitment. This failure to meet an employee's expectations may mean that a firm risks losing its talent to a competitor, particularly with Generation Y employees (BlessingWhite, 2007). Indeed, Swart and Kinnie (2003) found that, in a study of knowledge workers across six organisations, workers were more interested in what they can learn rather than what they get paid.

2.3 THERE ARE BENEFITS FOR THE ORGANISATION

In a conceptual paper, Bolino, Valcea and Harvey (2010) highlight the potentially negative implications of expecting employees to behave proactively and manage themselves. For the organisation, relying on proactive employees to drive themselves may limit the organisation's opportunities to foster a sense of culture and to promote socialisation amongst their employees, as learning allows sharing

of the organisation's values, and provides opportunities for employees to network and build relationships. In the longer term, a lack of support for development may weaken the learning capability of the organisation - thus reducing its ability to build critical skills and its flexibility to respond to change - and may also reduce its ability to develop future leaders and create a leadership pipeline for the future. Such expectations may also have negative effects at the individual level, contributing to stress, or leading to friction between more proactive and less proactive employees.

On a more positive note, numerous studies show that organisations that demonstrate support for employee development typically perform better and show increased commitment from their employees compared to organisations that do not show such support. Supporting employees' career adaptability has been found to link positively with commitment and negatively with intentions to leave (Govaerts, Kyndt, Dochy & Baert, 2011; Ito & Brotheridge, 2005); and, in a study of 179 European firms, the organisation's support and demonstrated commitment to management development was able to predict the organisation's productivity as derived from financial performance measures (Mabey & Ramirez, 2005). Similarly, organisations' investments in workplace learning have been found to predict a number of their organisational performance measures (Park & Jacobs, 2011). Investing in learning and development can lead to an increase of the learning capability of the organisation, leading to competitive advantage and an increased ability to plan for, and be adaptable to, future needs (Aguinis & Kraiger, 2009; Ellström, 2001).

2.4 THE NEED TO PROVIDE THE RIGHT KIND OF SUPPORT

One important thing to note, however, is that it may be necessary to tailor the support provided to the individual. For example, whilst organisational support for development may lead to increased commitment for most workers, this relationship can be moderated by the employee's goal orientation (Maurer & Lippstreu, 2008), or by their values of continuous learning activities (Bambacas, 2010). Similarly, in a study exploring the role of age in development, it was found that age moderates the relationship between an organisation's HRD policies and employees' job satisfaction and affective commitment. Whilst there is a positive association between support for development and satisfaction and commitment in younger workers, the opposite effect has been observed in a study of older workers (Innocenti, Profili, & Sammarra, 2013). An individual's personality and individual experience may be important for employers to recognise in supporting development.

As such, in some cases, support – or more specifically, the wrong type of support – may lead to decreased commitment. It is therefore important to understand psychological differences in employees when providing development support.

In considering this thesis, it is important to remember that it is not the case that "one size fits all" and that many of the findings discussed will not necessarily apply to each and every employee. It is likely that support needs to be tailored to each

individual, informed by an awareness of the factors that may influence learning, as derived from academic research.

2.5 SUMMARY

It is clear that individuals cannot necessarily be left to their own devices if both the organisation and employee are to maximally benefit from development and learning opportunities. Taking lessons from the job design literature, Hall and Las Heras (2010) propose the idea of 'smart jobs', jobs that can stimulate learning, growth and employability on the part of the incumbent. Such jobs could be designed to facilitate employee learning, and provide opportunities for individuals to develop in their desired ways. How, then, can the organisation go about supporting an employee's informal learning?

3 WHAT FACTORS MIGHT LIMIT INFORMAL LEARNING?

Given that informal learning is primarily self-directed, one way to address this question is by looking at the barriers that may limit individuals' ability to participate in as much informal learning as they would like. Barriers to workplace learning are 'those factors that prevent learning from starting, impede or interrupt learning or result in learning being terminated earlier than it might have been ordinarily' (Hicks et al. 2007, pg. 64).

In a recent literature review, Crouse, Doyle and Young (2011) summarised existing efforts to identify barriers to workplace learning. Their review identified 45 barriers to learning, which the authors reduced to nine categories based on the commonalities of these learning barriers. These categories – resource constraints, lack of access, technological constraints, personal constraints, interpersonal constraints, structural and cultural constraints, course/learning content and delivery, power relationships and change – are illustrated in Table 3.1.

Resource constraints	• Financial constraints • Lack of time • Lack of expert guidance • Lack of work space • Information sources/training not available	• Learning activities are not cost effective • Lack of resources • Lack of guidance for learning resources
Lack of access	• Lack of access to training opportunities • Lack of access to challenging work • Lack of proximity to learning resources	• Lack of access to computers • Lack of access to learning resources • Inconvenient
Technological constraints	• Limitations of instructional technologies	• Use of new technologies
Personal constraints	• Lack self-awareness of learning needs • Personal factors • Hesitant to accept challenges • Fear of failure • Low importance attached to learning	• Prior unsuccessful learning experiences • Loss of motivation • Cynical/reluctant regarding learning • Seen as extra work
Interpersonal constraints	• Reluctant experts • Poor managerial skills	• Difficult to find a coach or mentor
Structural and cultural constraints	• No management commitment to learning • A culture that does not support learning • Increased multi-tasking	• Lack of meaningful rewards for learning • Difficulty getting time off to attend training sessions • Lack of understanding of HRD role
Course/learning content and delivery	• Acquiring inappropriate knowledge • Opaque knowledge • Proprietary information • Instructors who lack credibility	• Too much to learn • Expectations of in-house training not met • Do not like how in-house and external training is delivered
Power relationships	• Power position of interaction partner • Limited decision-making power in organisational affairs	• Excluding people from learning opportunities • Resistance from unions
Change	• Fast pace of change	

Table 3.1: Crouse et al.'s (2011) review of barriers to workplace learning, broken down by category.

Crouse and colleagues' categorisation of barriers, however, has a number of shortcomings in explaining the barriers to informal learning. Firstly, the review is of general workplace learning and is not specific to informal learning. Few of the

considered studies explicitly focus on informal learning, so its generalisability to informal learning may be limited.

The categories themselves are also questionable. In their paper, many of the categories are poorly defined and there are multiple potential overlaps between them, with no explanation as to how these seemingly distinct categories may relate. A literature review, as a method of categorising barriers, also has its limitations compared to categorising barriers from original primary data. With primary data, there is a wealth of contextual data that can be used to understand how barriers may group into higher-order themes. From a literature review alone, it becomes more difficult to credibly arrange themes into a hierarchy.

Crouse and colleagues carried out their own study following their literature review, asking 13 human resource management (HRM) practitioners about "things that prevented learning". The authors identified six types of barriers: a lack of time, high workload, a lack of money, insufficient technology processes, accessibility, and personal factors. Interestingly, several of the barriers identified in the literature review were not evidenced in their research, with missing barriers of interpersonal constraints, structural and cultural constraints, course/learning content and delivery, power relationships and change.

This begs the question as to why these barriers were not replicated. Perhaps the limited sample of 13 HRM practitioners limits the opportunity for these categories to emerge, or perhaps the authors have differently interpreted themes compared to previous authors. Unfortunately, a lack of detailed description behind these categories limits the ability to evaluate their findings in detail.

Revisiting some of the studies referenced in their review may shed light on potential categories of barriers. Given the overlapping categorisations of Crouse et al., alongside differences in samples and focuses in each of the studies, it is more effective to consider studies in turn, rather by barrier by barrier. Crouse and colleagues considered 11 studies in their literature review. Some of these (e.g. Sambrook and Stewart, 2000; McCracken, 2004; White et al., 2000; Munro et al., 2000) offer general contributions to building a list of barriers, but do little to begin categorising these barriers into meaningful groups.

One of the earliest of these studies is that of Billett (1995), who identified five main barriers to learning: *acquisition of inappropriate knowledge*, learning things counter to the organisation's needs; *lack of access to authentic task activities*, with learners participating in inappropriate or ineffective learning; *lack of expert guidance*, a lack of skilled and knowledgeable people from whom one can learn; *reluctant experts*, potential mentors or coaches being unwilling to support others' learning; *opaque knowledge*, the difficulty of accessing or understanding knowledge; and *limitations of instructional technologies*, such as the requirement for learners to transfer knowledge across contexts. Billett's barriers, however, focus exclusively on factors external to the individual, and fail to consider the role of the learner. They also are more relevant to formal learning than informal learning.

Lohman (2000, 2005), however, does consider these personal factors in her qualitative study of teachers (2000), which is then developed in a survey exploring differences between human resource development (HRD) practitioners and teachers (2005). Lohman splits the barriers into two main categories: *environment* and *personal* factors, in a similar vein to Stuart's (1984) *intrinsic* and *extrinsic* categorisation of barriers to learning. The environmental factors include lack of time, lack of proximity to colleagues' work areas, unsupportive organisational culture (in HRD practitioners only), unwillingness of others to participate in informal learning (HRD only), inaccessibility of subject matter experts (HRD only), and lack of funds (teachers only). The personal factors are all seen in both groups, made up of initiative, self-efficacy, love of learning, interest in the profession, commitment to professional development, a nurturing personality, and an outgoing personality. Lohman (2005), however, acknowledges the limitations of her survey, stating that "further research is needed to overcome the limitations of the small and narrow sample reported in this study and to research additional questions".

Other work has, however, explored barriers in other samples, such as Doyle and Young (2003) in their study of small business owners, who found that time was the predominant barrier for nearly all the participants. Other barriers identified included issues related to the nature of the formal learning – course content, delivery, relevance and cost – and personal factors relating to the individual. Doyle et al. (2008) expanded their study of barriers in a study of managers, identifying a total of 104 barriers, which they grouped into six broad categories: insufficient time, personal factors, excessive cost, inconvenience, too much to learn, and 'other'. Again, these studies have tended to focus on formal learning, rather than informal learning.

Most existing work has taken a qualitative approach, so Hicks et al.'s (2007) quantitative study stands out from many of the others. In their survey of 143 Canadian accountants, the authors looked at group differences in perceived barriers to workplace learning. However, the authors are not explicit about how they developed their items, which included questions relating to time, workload, irrelevant training, unclear goals, inability to find a mentor or coach, non-reward of learning, cost, physical separation, no access to training, blocking by supervisor, and no need for learning. That said, the survey does offer some insight in terms of the relative importance of the barriers that they did measure. As seen with other studies, time and workload are key limiters to learning.

The final approach to consider is that of Ellinger and colleagues (Ellinger, 2005; Ellinger & Cseh, 2007), who investigated the organisational factors that can influence learning. Some of these factors were associated with encouraging learning, including emergent themes of a learning-committed leadership and management (such as managers who serve as developers, give positive feedback, and create learning opportunities), an internal culture committed to learning, work tools and resources, and people who form webs of relationships for learning.

There were more emergent themes of negative organisational factors found to influence informal learning, such as a leadership and management not committed

to learning, an internal culture of entitlement that is slowly changing, work tools and resources (such as budget constraints, diminished personal communications because of virtual technology), people who disrupt webs of relationships for learning (such as those facing old-guard cynicism or territorial colleagues who hedge knowledge), structural inhibitors (such as physical architectural barriers or silos), a lack of time because of job pressures and responsibilities, too much change too fast, and not learning from learning.

While extensive in its consideration of organisational factors, and perfectly placed to help organisations develop a culture to support both formal and informal learning, the study does not consider individual factors, which, given the self-directed and personal nature of informal learning, may be even more salient. The qualitative study was also narrow in its sample, as the authors acknowledge, considering 13 participants from an organisation that was in the middle of quite large-scale change.

3.1 KEY FINDINGS

Consistent across most of the previous research is the prevailing importance of 'lack of time' as a barrier to informal learning, which is shown as being a key barrier across samples of managers in knowledge-based industries (Doyle et al., 2008), accountants (Hicks et al., 2007), nurses (White et al., 2000), small business owners (Doyle & Young, 2003), teachers (Lohman, 2000) and human resource professionals (Lohman, 2005).

Other barriers identified can be categorised in one of two ways (Stuart, 1984): *intrinsic* factors, including Crouse's 'personal constraints' and others' 'personal factors'; and *extrinsic* factors. Extrinsic factors can be further broken down into one of two types (Stuart, 1984): *physical-structural* barriers, including resource technological, access, and structural constraints; and *psycho-social* barriers, such as interpersonal constraints, power relationships and cultural barriers.

3.2 HOW CAN WE BUILD ON THE CURRENT RESEARCH?

On the surface, there seem to be plentiful studies that offer insight into the potential barriers that might hinder employees' efforts to engage in informal learning. Crouse et al.'s (2011) review appears particularly appealing given its attempts to bring together existing work in the area. However, there are a number of shortcomings in existing work, providing opportunities for further research.

Firstly, many studies ***focus on general workplace learning***, rather than specifically on informal learning. While some of these studies cover aspects of informal learning, their discussion gives the impression that the authors or participants have tended to focus on more formal training programs. Of the studies that have had a general focus, there has also been no distinction drawn between formal and informal learning. This leaves the question as to whether there are differences in the barriers to formal and informal learning participation, and if there are certain barriers that are specific, or not relevant, to informal learning.

The second issue is in the ***content and structure*** of existing thematic frameworks. In many cases, there are a large number of barriers that are not arranged in a hierarchical structure. That said, many of the barriers could be grouped, which could help share and communicate understanding, particularly with practitioner audiences. While Crouse and colleagues go some way to creating a hierarchical structure, this is done through literature review, where there is less primary information available about these barriers. This deeper detail from primary sources is extremely helpful when grouping barriers into categories. Other problems with existing frameworks relate to the large cross-over between barriers. In many cases, categories are not mutually exclusive, and so it would be helpful to explore this more and begin to understand how categories may relate, and/or, group the barriers in different way. Some barriers, including 'time' in particular, are also only explored on the surface. As a frequent and important barrier, 'time' most likely has a number of different effects on participation; these nuances have not yet been explored.

In a similar vein, there is a ***lack of detail*** surrounding many of the current reported barriers. Many studies lack rich explanations, and so it is difficult to comment on many barriers in any great depth. Little is known about which of the barriers are more important, or more frequent, than others. This lack of detail also makes it difficult to regroup existing barriers into a hierarchical structure.

As well as depth, there may be potential issues with breadth, with potentially ***missing factors***. Current studies have focused almost exclusively on the workplace, ignoring factors outside work than may hinder an individual's informal learning participation. With an increasingly 'boundaryless' working environment (Arthur & Rousseau, 1996), there is likely to be a greater cross-over between home and work life than has previously been discussed.

Finally, there is always the need to explore in new ***contexts***. Many of the existing studies have been qualitative in nature, speaking to a small number of relatively homogenous employees in either the same small organisation or the same profession. As Doyle and colleagues (2008) state: "given differing contextual factors (Eraut, 2004), these barriers and facilitators might not be the same across different professional and occupational groups". Further exploration of learning barriers in other organisations, professions and countries would be a useful addition to current theoretical understanding.

RQ1: What barriers do employees perceive may hinder informal learning?

4 WHAT ROLES DO OTHER PEOPLE PLAY?

The role that others play in informal learning is relatively underexplored. Although often termed as "self-directed learning", this may be a somewhat misleading term; individuals do not work and live in a vacuum and many other people may have a role in supporting or hindering their informal learning endeavours.

Existing work has primarily focused on the line manager, and there is a bank of literature surrounding the ways that managers can affect informal learning. There

has been less work on the role of colleagues, and the little existing work there is has treated this group as homogenous, neglecting the fact that one's colleagues can be a broad church. Similarly, most of the literature has typically focussed inside the organisation, neglecting the role that friends and family outside work may play in an individual's informal learning.

4.1 WHO SUPPORTS LEARNING?

Employee development has been quantitatively found to be influenced by a number of specific support sources, such as line managers (Birdi et al., 1997; Schurmann & Beausaert, 2016), peers and colleagues (Chiaburu & Marinova, 2005; Tracey, Tannenbaum, & Kavanagh, 1995), and friends and family (Birdi et al., 1997; Harvey, Sinclair, & Dowson, 2005; Maurer et al., 2003). Specifically, in terms of informal learning, it has regularly been found that support from senior managers, in particular, leads to greater participation in informal learning by employees (Ashton, 2004; Ellinger, 2005; Sambrook & Stewart, 2000; Skule, 2004).

That said, traditionally, academic study has been somewhat narrow-minded in its consideration of support sources. Whilst the practitioner literature (e.g. CEDEFOP, 2008), regularly recognises the breadth of support in learning and career development, academic research so far has concentrated on intra-organisation sources.

We face multiple changes in the world of work: globalisation, outsourcing, inter-organisational collaboration, the breakdown of the boundaries between work and home, an increasing importance of professional networks, and technological advances. As Ramarajan and Reid (2013) state, the "myth of separate worlds" of work and home is being "shattered", and "boundaries between work and nonwork identities become blurred". As a result, there may be, now more than ever, a whole host of opportunities for support outside the immediate organisation.

Outside the organisation, individuals may be supported in their informal learning by their family and friends, community or religious groups, chambers of commerce, trade unions and professional bodies, and various government initiatives and schemes. This is illustrated in the 'developmental networks' mentoring literature, where quantitative results indicate that non-work developers provide more overall support than work developers (Murphy & Kram, 2010).

It could be argued that these external sources of support are not of concern to organisations. However, it remains important for organisations to recognise sources of support that exist outside their boundaries, so that they can complement and work with them. For example, it may be important for the organisation to give time off for and recognise volunteering activities, and design development opportunities in line with people's family and non-work commitments. It is also useful for organisations to recognise the boundaries and limits of their influence.

Even within the organisation, there are more sources of support that can be uncovered in academic research. Existing research has mainly focused on the line manager, peers and colleagues, and the general organisational climate. It may, however, be useful to draw distinctions within these groups, separating direct line managers from HR managers, or separating colleagues within the same team from the colleagues who may work in a different team. There are also groups within organisations, such as women's or lesbian, gay, bisexual and transgender (LGBT) networks, or even the company football team, each of which may also play a part in supporting learning and development. These opportunities for support have also been largely ignored in current debate.

Fortunately, there is a growing body of literature that is beginning to explore the importance of these positive interpersonal relationships in the workplace (e.g. Dutton & Heaphy, 2003; Ragins & Dutton, 2007), although study in the area of relationships that support learning is in its infancy. Some researchers have begun to explore the role of other learning partners in employee's learning endeavours (e.g. Doornbos et al., 2004; Koopmans et al., 2006; Neilsen and Kvale, 2006), but again, these studies so far primarily focus on line managers and colleagues, ignoring the potential breadth and diversity of one's learning support network.

4.2 How do others support learning?

In trying to understand how these different groups of people may support informal learning, there are a number of existing pieces of literature that can be drawn upon: those detailing how line managers and colleagues support learning and development; literature around those who support career decisions and career development; that surrounding mentoring constellations; and literature on social support theory.

4.2.1 Managers and colleagues supporting learning

Much of the learning literature has tended to focus on the role of line managers and how they support work-place learning. Generally, however, managers' roles in supporting informal learning, in particular, has been underexplored, perhaps because informal learning is often seen as something that is 'self-directed' by the individual, rather than being driven by the organisation or its managers. Existing research has also tended to consider managers' facilitative behaviours at a conceptual level (Margaryan et al., 2013), stating what these behaviours and activities 'should be', rather than what they are in practice (Eraut, 2010; Weaver and Farrell, 1997).

One study that looks at managerial behaviours in practice is that by Ellinger and Bostrom (1999), who categorise managerial coaching behaviours into two groups: empowering behaviours and facilitating behaviours. These behaviours are illustrated in Table 3.2.

Empowering behaviours	Facilitating behaviours
Holding back and not providing the answers	Creating and promoting a learning environment
Framing questions in a way that encourages individuals to think through issues	Getting individuals to see things differently through the use of different perspectives and analogies
Transferring ownership for problem solving to individuals	Setting and communicating expectations
Removing obstacles for them where possible	Giving and receiving feedback

Table 3.2: Ellinger and Bostrom's (1999) categorisation of managerial coaching behaviours

Other studies have categorised managerial support in different ways. For example, Hirsch and colleagues (2004) identify six managerial roles seen as 'supportive for learning', based on 51 interviews across four organisations, speaking with both 'givers' and 'receivers' of learning support. These roles include: setting a climate conducive to development; building developmental relationships with their workers; providing frequent, honest and constructive feedback; giving informal coaching; and offering career development opportunities.

Coetzer (2006) also asked a similar question of employees of small manufacturing firms, trying to understand how managers intentionally promote learning. Here, Coetzer unveiled behaviours including: providing access to a range of workplace activities; promoting communication in the workplace; facilitating access to direct guidance from workplace models; and designating learning facilitators.

Beattie (2006), however, captures many of these behaviours in his framework of how managers facilitate learning. Based on a study of employees in the voluntary sector, Beattie provides a categorisation of important behaviours that line managers can exhibit, as shown in Table 3.3. This taxonomy of behaviours is particularly useful in that it offers a number of specific behaviours that managers exhibit or could exhibit.

Category	Behaviours	Increasing complexity
Challenging	Challenging perceptions and assumptions	
Developing developers	Development of people skills in those with people management responsibility	
Empowering	Delegating; trusting	
Thinking	Reflective or prospective thinking; clarifying	
Assessing	Providing feedback and recognition; identifying development needs	
Advising	Instructing; coaching; guiding; counselling	
Being professional	Role modelling; standard setting; planning and preparing	
Informing	Sharing knowledge	
Caring	Supporting; encouraging; being approachable; reassuring; being committed/involved; emphasising	

Table 3.3: Beattie's (2006) categorisation of behaviours that managers may exhibit in facilitating learning, ordered from most complex at the top through to the least complex at the bottom

Similarly, in a book chapter entitled *'The Role of the Line Manager*', Kirwan (2013) tries to bring together many of these behaviours in a model of how line managers support their reports' learning and development. This model is made up of four stages that follow-on from one another. The first stage is concerned with *providing clarity*, with the manager identifying development needs, aiding with planning and preparing, and setting standards. The second stage, *getting the work done*, involves the manager challenging their report, delegating work and trusting their report to get on with it, and instructing and guiding. The next stage, *managing performance*, involves providing feedback and recognition, and clarifying and offering reflective thinking. These activities together then lead to *learning and motivation*.

The same types of support may not be equally important for all employees, however, and employees may differ in terms of the support that they need or receive from their manager. One such study that explores these differences is an exploratory qualitative study by Margaryan, Milligan and Littlejohn (2013), who interviewed 29 employees to understand the facilitative learning behaviours of managers. These behaviours are illustrated in Table 3.4, and are split into three groups reflecting the experience-level of the employees for which these behaviours were observed. Novices were those employees who had three years or less of experience; mid-career were those employees with three to eleven years of experience; and experienced employees were those with eleven or more years of experience.

NOVICES	MID-CAREER	EXPERIENCED
Structuring individual development plan	Structuring individual development plan	*Advice on individual development plan*
Regular assessment of performance and progress towards learning goals		
Advice on learning opportunities	Advice on learning opportunities	Advice on learning opportunities
	Career development guidance	Career development guidance
Hands-on support with operational tasks		*Advice on operational tasks*
Counselling		
Being a role model		

Table 3.4: Managerial learning support behaviours (Margaryan, Milligan and Littlejohn, 2013), broken down by employees' experience. Key differences between groups are highlighted using italics.

Looking beyond just managers, Ellinger and Cseh (2007) widened the scope of those who support informal learning, exploring how colleagues in general support informal learning. Of their 23 interviews, twelve were with managers supporting their reports' learning, nine with employees laterally supporting their peers, and two supporting the learning of those at a higher level them themselves.

The predominant fourteen support behaviours identified were: providing feedback; role playing; observing; listening; asking questions (the "what do you think and why" investigative questions); talking things through (explaining and seeking understanding); walking through things step by step ("you drive, I'll take the passenger seat"); seeking others for knowledge or additional insights as needed; sharing materials and resources; using examples; removing obstacles; broadening perspectives; being a role model; and focusing on the big picture.

One limitation of Ellinger and Cseh's approach is that they only spoke to those who supported learning, asking about the ways in which they individually support their colleague's learning. The study did not explore support from the perspective of the person learning, or go on to contrast these two perspectives so as to understand both sides of this two-way relationship. It may be that people support others' learning without being aware, and these behaviours may not be captured in Ellinger's findings.

While promising, all of these current considerations of how managers or colleagues may support learning are narrow in that they all take into account one particular group, whether that be managers or colleagues. There is opportunity for further exploratory work with other groups, such as those outside work or colleagues, considered from a number of different perspectives.

4.2.2 Career supporters

In the literature surrounding career development and guidance, a wider support network has regularly been discussed and acknowledged, and so there may be parallels that can be drawn upon in understanding how informal learning may be supported.

For example, in terms of family support, there are many examples of how spouses have an influence on an individual's career, such as one's intention to start a business (Van Auken & Werbel, 2006; Jennings & McDougald, 2007), expatriate (Mäkelä et al., 2010; Lauring & Selmer, 2010), or quit a job (Huffman et al., 2014).

One notable study that explores the roles that others play in shaping one's career is that by Bosley, Arnold and Cohen (2009), who use a life-story method to understand the ways in which others have shaped individuals' career aspirations, enactment, world-view and self-concept. Bosley and colleagues identified five shaper categories: advisers, those who offer suggestions, opinions and recommendations based on their career world-view; informants, those who share knowledge of job vacancies and opportunities and occupations; witnesses, those who communicate their perception of the individual's personal qualities and skills; gatekeepers, those who facilitate or obstruct access to jobs, promotions and development opportunities; and intermediaries, those who use, or are believed to use, influence to intervene with powerful gatekeepers on the participant's behalf. These types of career helpers offer some insight into the kind of roles that others may play in supporting informal learning, with these shapers affecting learning rather than career-related criteria.

4.2.3 Mentoring and developmental networks

A closely related area that may offer insight is that of *mentoring*. Mentoring is described as a 'a relationship between a more experienced mentor and a less experienced protégé for the purpose of helping and developing the protégé's career' (Kram, 1985; Levinson, 1978). Protégés may have a number of different mentors and hold multiple developmental relationships. This network of mentors has been termed a "relationship constellation" or a "developmental network" (Higgins & Kram, 2001).

Mentors have been described as providing two types of functions (Kram, 1985): career functions and psychosocial functions. Career functions are those behaviours that help the protégé advance in their career, and include behaviours such as sponsorship, providing exposure and visibility, coaching, offering protection and challenging assignments. Psychosocial functions, on the other hand, are those behaviours that help the protégé to develop their sense of competence, identity and effectiveness in their professional role, and include behaviours such as role-modelling, acceptance and confirmation, counselling, and friendship.

The way in which colleagues may support learning may be similar in parts to informal peer relationships, which have also been studied as a form of mentoring (Kram & Isabella, 1985), with peers providing performance-related and interpersonal feedback, and providing support (Eddy et al. 2005). The potential

importance of family and friends in supporting learning may also be somewhat illustrated in the 'developmental networks' mentoring literature, where quantitative results indicate that non-work developers provide more overall support than work developers (Murphy & Kram, 2010).

However, these "relationship constellations" have so far been confined to mentoring relationships, and have not crossed over into broader discussion of learning and development, and extended into many of the other diverse range of activities in which people can participate. Mentoring itself also implies an ongoing relationship, whereas support can come in many different forms, including irregular or one-off interactions.

4.2.4 Social support theory

Social support theory is a popular framework used in health psychology, public health, criminology, and in understanding how individuals deal with adversity. Definitions vary considerably, but are generally centred around how individuals in one's social network provide resources that can be beneficial to the individual. For example, in terms of wellbeing, Shumaker & Brownell (1984) define social support as "an exchange of resources between two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient." Social support networks are inherent in everyday life, both inside and outside of the workplace. Darwin (1871) stressed the great benefits of being a social animal, stating that "Those communities which included the greater number of the most sympathetic members would flourish best, and rear the greatest number of offspring" (p. 309).

Social support has been categorised in a number of different ways: in terms of tangible, information and emotional (Folkman & Lazarus, 1985); informational, instrumental and emotional (Jacobson, 1986); instrumental and emotional (Semmer et al., 2008); and problematic and emotional (Khan et al., 2009). The most comprehensive categorisation, however, is that by House (1981) who outlines the functional roles of social relationships and groups them into four types of supportive behaviours: *emotional support*, the provision of empathy, love, trust and caring; *instrumental support*, the provision of tangible aid and services; *informational support*, the provision of advice, suggestions and information that a person can use; and *appraisal support*, the provision of self-evaluation information, including feedback and affirmation.

Applying House's framework to informal learning, emotional support may come from sources inside and outside the organisation. A line manager may offer emotional support in the way they approach their employees, showing a genuine concern for their development and wellbeing, encouraging their development, being supportive when they make mistakes through trial-and-error, and trusting them with new tasks and learning opportunities. Outside of work, one's partner, for example, may offer love and empathy, supporting one emotionally after a difficult or emotional learning encounter, or encouraging and building confidence in their partner.

Instrumental support is perhaps more obvious in the context of learning and development, with managers, colleagues, HR contacts, and friends and family all able to offer learning opportunities, whether that be offering their expertise, providing resources such as technology, time or funding, or acting as a gatekeeper to opportunities such as secondments or new work projects. Informational support may be similar, in that a wide range of people can offer their advice and suggestions that may benefit an employee's learning.

In terms of appraisal support, feedback can be provided from a range of people, whether that be on an employee's job or task performance or on their interpersonal style. Appraisal support may also include more indirect forms of support, such as role-modelling behaviours. This type of support can then go on to guide an employee in their learning efforts.

In many cases, it may be that the social support offered isn't intentionally given to support learning, but has an indirect effect on an employee's informal learning participation. For example, a manager may not explicitly offer social support for learning, but may generally be trusting and provide autonomy to an employee over how they schedule their work and go about tasks. This trust can help create a 'safe' environment, in which the employee may feel supported in being able to engage in trial-and-error learning, and comfortably make mistakes without serious retribution. It may be that the employee is trusted in how they schedule their time, so that they can take advantage of networking opportunities that arise, as opposed to being monitored at their desk. Outside of work, support may be offered by the family environment, who, if generally supportive in helping an employee balance their work and home commitments and causing few work-family conflicts, may incidentally make it easier for the employee engage in learning activities that may cross over into the home environment.

4.2.5 Summary

Although there has been little academic study into the ways in which others support informal learning, other areas of literature, such as that of career development, mentoring, and social support, offer some insight that may offer direction to qualitative study.

House's (1981) categorisation of social support, in particular, stands out as being exhaustive, yet succinct, with the four types of support – emotional, instrumental, information and appraisal – closely relating to the types identified in other literatures, such as Kram's 'career functions' and 'psychosocial' categories, and Bosley et al.'s five types of career helpers: advisers (informational), informants (informational), witnesses (appraisal), gatekeepers (instrumental) and intermediaries (instrumental).

Many of the supportive behaviours that managers and colleagues might provide can also be easily categorised into these four groups, and Beattie's (2006) and Ellinger and Cseh's (2007) studies of managers' and colleagues' supportive behaviours are particularly insightful in offering specific, detailed examples of supportive behaviours.

4.3 How can we build on the current research?

The findings of Beattie (2006) and Ellinger and Cseh (2007), with clearly identified behaviours, are illuminating in the way in which they express the roles that managers and colleagues, respectively, play in supporting learning. Unfortunately, the same level of detail has not yet been identified for other groups in the workplace, and so there is the opportunity to explore supportive behaviours in other groups, such as with friends and family, and with specific groups of colleagues, including those within and outside an employee's immediate work team and one's direct reports.

Both existing studies are also narrow in their sample: Beattie studying only the voluntary sector, which may not be typical of the private or public sector; and Ellinger studying a relatively small number, mostly at management level with little focus on the peer-to-peer relationships. There is therefore a good case for exploring supporting behaviours in new contexts.

RQ2: What roles do other people play in supporting employees' informal learning?

5 Research Questions

In this chapter, two research questions have been proposed.

The first is concerned with the barriers that employees may encounter and perceive to hinder their informal learning endeavours. While the current literature has begun to identify barriers, many studies have focussed on general workplace learning rather than informal learning specifically, and there is the opportunity to improve on the current categorisation and grouping of barriers so that they are more readily understandable by researchers and organisations.

RQ1: What barriers do employees perceive may hinder informal learning?

The second question asks what role others play in supporting an individual's informal learning. While interpersonal support has been identified as important, much of the current focus has concentrated almost exclusively on the role of the line manager, and to a lesser extent, one's colleagues. There is the opportunity to explore what role other groups play – including different types of colleague, and support sources outside of the workplace – and how the ways these groups support or hinder informal learning differ between types of support sources.

RQ2: What roles do other people play in supporting employees' informal learning?

While these questions will begin to explore the ways in which employers can support their employees' learning, there remains the question as to how employers may best direct their efforts. Are there employees who may need support more than others? The question of how informal, and formal, learning may be predicted is discussed in the following chapter.

4. Predicting informal learning

1 SUMMARY

In order for organisations to support informal learning, managers need to be able to identify those who may not be so adept at engaging in such activities by themselves. Managers and HR teams can then work to create the right learning environments and tailor the support they offer so it is directed at those most in need.

Drawing on the common psychological praxis that behaviours are a function of both personality and situation, the chapter is broken into two key sections: a consideration of dispositional predictors; and a consideration of situational predictors. The Theory of Planned Behaviour is also introduced, so that the differences between the intention to develop and actual participation in informal and formal learning may be explored.

For both types of antecedent, a wide array of factors is discussed, with attention paid to previous research findings and a recent systematic literature review and meta-analysis. Much of the existing work thus far has concentrated on formal learning or general development activity, and no research to date has explored the differences between informal and formal learning in terms of the antecedents that may predict learning participation. As Kyndt and Baert (2013) highlight: "Taking both formal and informal learning into account and differentiating between them might not only enable us to identify mutual and distinct antecedents but also allow us to investigate empirically how both forms of learning relate to each other."

As previous studies are considered and critiqued, a number of research questions and hypotheses are put forward, which are tested through a quantitative study in Chapter 7.

2 WHY PREDICT INFORMAL LEARNING?

As explored in previous chapters, informal learning has benefits for both employer and employee. For the employer, supporting learning can develop the organisation's capability, which may in turn lead to a greater competitive advantage and a greater ability to adapt in the face of change. Similarly, for the employee, engaging in learning may help them perform better in their current role, which may help them cope more effectively, be happier in their role, or receive greater reward; but it may also boost their employability, helping them to achieve promotion or be more flexible and adaptable in the face of change.

Whilst there are plentiful theories and models relating to informal learning, as well as descriptive accounts of its role in organisations, there is little research that examines the antecedents and consequences of informal learning (as also argued by Noe, et al., 2013; Tannenbaum et al., 2010). By understanding the antecedents

of informal learning participation, it may be possible to influence and improve informal learning practices in workplaces and in individuals' working lives.

3 PERSONALITY AND SUPPORT

Since starting this doctorate, there have been two key reviews of evidence surrounding the antecedents related to informal learning: a systematic literature review of work-related learning by Kyndt and Baert (2013), and an unpublished meta-analysis focused on informal learning by Cerasoli and colleagues (2014) for the US Army Research Institute for the Behavioural and Social Sciences.

Both have categorised antecedents in different ways: Cerasoli and colleagues splitting antecedents into *personal antecedents*, made up of engagement motives, work-related capabilities, and demographics, and *situational antecedents*, split into Tannenbaum et al.'s (2010) categorisation of job and task characteristics, support, and opportunities for learning. Kyndt and Beart split their consideration of work-related antecedents into three: *micro-level antecedents*, covering both personal and job characteristics; *meso-level antecedents*, covering learning activity; and *macro-level antecedents*, covering the organisation and its broader context.

Drawing on the common psychological praxis that behaviours are a function of both personality and situation, the chapter will be broken into two key sections: a consideration of dispositional or individual antecedents; and a consideration of situational antecedents. This is similar to that used by Cersasoli and colleagues.

4 INTENTIONS TO DEVELOP

As well as influencing individuals' participation in learning activities, personality and situational factors may also influence employees' intention to develop, which in turn influences their participation in learning activities.

The Theory of Reasoned Action (Fishbein & Ajzen, 1975) and the Theory of Planned Behaviour (Ajzen, 1985) are heuristic frameworks that state that the *intention* to perform a certain behaviour precedes the actual behaviour. In this case, employees will have an intention to engage in learning that precedes their participation in informal and formal learning activity. These theories state that intentions can be predicted by a number of aspects: social norms, the individual's attitudes, and their perceived behavioural control. Hurtz and Williams (2009), in their consideration of intention to learn, represented these three aspects through: "I want", representing motivation, desire and attitudes; "I should", representing social norms, obligation and felt responsibility; and "I will" as perceived behavioural control and self-prediction. This thesis focuses on the motivation and desire element, as this is often the most common, accessible, and important of the three elements.

While there can be factors that affect an individual's intention to participate in learning activities, it may be the case, particularly with informal learning, that

some learning behaviours are unplanned or unintended. These theories of Reasoned Action and Planned Behaviour, however, assume that deciding to participate in learning is a rational process (Pryor, 1990), with individuals' participation driven by thought-out intentions. While many antecedents may affect participation by affecting individuals' intention to participate, it may also be the case that some antecedents directly affect participation without affecting intention. As such, in this study, both intention and participation are studied as dependent variables so as to explore how antecedents directly affect learning, and indirectly affect learning through intentions to learn.

The intention and learning participation link has previously been demonstrated, with a significant relationship demonstrated between intention and formal learning in five studies (Bates, 2001; Kyndt et al., 2011; Noe, 1996; Renkema, 2006; Zoogah, 2010), and between intention and general work-related learning in two studies (Hurtz & Williams, 2009; Maurer et al., 2003). Four of these studies used a longitudinal design, showing a causal relationship in that greater learning intention measured at point one led to greater work-related learning participation at a later time-point (Hurtz & Williams, 2009; Maurer et al., 2003; Noe, 1996; Zoogah, 2010).

5 INDIVIDUAL FACTORS

From a psychological perspective, it is pertinent to consider differences that exist between individuals. The understanding of employees' personalities can aid the employer in their provision of support. It may help them identify those who will not naturally engage in particular activities by themselves, and so may benefit from additional support and guidance. Personality psychometrics are regularly used in selection and development, and so it may be increasingly possible for organisations to use the findings of such tools to tailor their approach to learning and development.

Existing research suggests that individual differences are the strongest predictor of development engagement compared to environment, incentive and perceived outcome factors (Maurer & Tarulli, 1994), and there have been many calls for further research on such differences (Colquitt, Lepine & Noe, 2000; Ford & Oswald, 2003; Maurer et al., 2003). Numerous studies have found effects of personality on training (Major, Turner, & Fletcher, 2006; Bertolino, Truxillo, & Fraccaroli, 2011), development (McGlynn, 2011), and informal learning (Noe et al., 2013).

RQ4: Do individual differences (proactive personality, curiosity, Big Five, age, tenure) predict an employee's participation in (a) informal learning, (b) formal learning, and their (c) intention to engage in learning?

In this section, a range of potential personality antecedents are presented, so as to demonstrate the breadth of factors that may influence informal learning. However, to test such a number of antecedents would prove impractical, and so

hypotheses are only stated for a select number of antecedents. It is only those variables with explicit hypotheses stated that have been included in this study.

The antecedents selected for study include demographic variables and more distal personality traits. These factors are selected given the ease with which organisations may be able to use them in predicting learning and identifying those who may need additional support. Demographic and personality trait information may be more readily available to employers, and collection of such data may have multiple uses for organisations beyond the prediction of informal learning. In the original study design, it was anticipated that more demographic variables would be studied, but the participating organisation was not keen to collect such directly identifying and sensitive information, and it was felt that doing so may affect the survey response rate.

5.1 DEMOGRAPHICS

Sociodemographic factors are the most widely studied antecedents of work-related learning (Kyndt & Baert, 2011). This may be because they are particularly easy for researchers and organisations to measure.

5.1.1 Age

As people are living longer, we are beginning to see an aging workforce, and more employees of different generations are now working together. In the future, both age and generational differences are likely to be important considerations when studying development (Twenge, 2006). For example, Millennials, those born between 1980 and 2000, have been found to hold particularly high expectations of their employer in terms of training and career development (De Hauw & De Vos, 2010; Sturges, Guest, Conway & Davey, 2002), even during times of recession.

Relationships between age and development participation have regularly been found in the literature (Boeren, et al.¸2010; Colquitt, et al., 2000; Maurer et al., 2003; Renkema, Schaap, & van Dellen, 2009), with older employees typically participating in fewer learning activities than younger employees. There are several reasons why this may be the case. As employees get older, they are likely to receive less support, as they are perceived as having lower cognitive ability, holding less investment potential, and are thought to possess fewer individual characteristics that are conducive to development (Maurer, et al., 2003; Warr & Birdi, 1998). Older employees may also choose to participate in fewer development activities, either because they perceive fewer long-term perspectives on the labour market, making the investment to learn less attractive (Boeren, et al., 2010); or because the support received or learning activities available are not designed for older workers (Farr, Tesluk & Klein, 1998; Leisink & Knies, 2011; Sterns & Doverspike, 1989).

However, there have also been a number of studies that have shown no relationship between age and formal and informal learning (Ito & Brotheridge, 2005; Noe, 1996; Schulz and Roβnagel, 2010). This may be because, if employees' learning is self-directed, as in the case of informal learning, then there may be little difference between older and younger workers' overall rates of participation in such activities, as each can choose their own types and styles of learning. As

employees of different ages may have differences in their motivation and the type of activities they prefer (Kanfer & Ackerman, 2004; Warr & Birdi, 1998), they may also prefer different kinds of support, an idea which will be discussed later when considering dispositional links with support.

H1: Age has a significant negative relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

5.1.2 Tenure

The relationship between tenure and work-related learning is mixed, with many finding no statistically significant relationship (Oosterbeek, 1996; Simmering et al., 2003; Thangavelu et al., 2011; Tharenou, 1997, 2001). Others, have, however, observed a negative relationship (Doornbos et al., 2008; Green, 1993; Greenhalgh & Mavrotas, 1994; Ito & Brotheridge, 2005) and a positive relationship (Garavan et al., 2010; Harris, 1999; Noe & Wilk, 1993). The same is true when exploring the relationship between tenure and learning intention, again with studies finding negative relationships (Kyndt et al., 2011; Renkema et al., 2009) and no statistically significant relationship (Greenhalgh & Mavrotas, 1994; Zoogah, 2010). The mixed findings of tenure may occur for a number of reasons, including different measures of tenure – such as organisational and job role tenure – and possible confounds with other variables, such as age.

H2: Organisational and job tenure have a significant negative relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

5.1.3 Gender

Gender differences in learning participation have been mixed, with some studies finding that women participate in more learning than men (Rowold & Shilling, 2006; Sala-Velasco, 2009; Thangavelu et al., 2011), others finding that men participate in more learning than women (Albert et al., 2010; Lauber, Taylor, Decker, & Knuth, 2010; Leuven & Oosterbeek, 1999; Oosterbeek, 1996), and some finding there to be no significant difference (Garavan, Carberry, O'Malley, & O'Donnel, 2010; Lauber et al., 2010; Tharenou, 2001; Xiao & Tsang, 2004).

Similar mixed findings were also found for informal learning, with women participating more than men (Ito & Brotheridge, 2005), men more than women (Booth, 1991), and both genders in equal amounts (Taris and Feij, 2004).

5.1.4 Other demographic variables

On the whole, there is little evidence to support a link between ***marital status*** and learning, with many studies finding no such link (Booth, 1991; Oosterbeek, 1996; Taylor & Urwin, 2001). The relationship between ***having children*** and one's involvement is learning is more mixed, although most studies also show no significant link (Greenhalgh & Mavrotas, 1994; Kyndt et al., 2011; Taylor & Urwin, 2001; Tharenou, 1997).

It has repeatedly been found that employees with a higher ***level of education*** tend to participate in greater levels of training and development (e.g., Albert et al., 2010; Green, 1993; Ito & Brotheridge, 2005; Montizaan et al., 2009; Tabassi &

Bakar, 2009; Taylor & Urwin, 2001; Tharenou, 1997; Warr & Birdi, 1998). The same has also been demonstrated in studies including measures of informal learning (Booth, 1991; Ito & Brotheridge, 2005).

5.2 CAPABILITIES

Individuals may differ in their general or learning-related capabilities, which may affect the extent to which they can successfully engage in informal learning. Several studies have shown that those with better ***task-related capabilities*** or ***learning competencies*** participate in more informal learning compared to those low in such capabilities (Cseh, Watkins & Marsick, 2000; Moon & Na, 2009). Few have looked at the effect of ***general intelligence***, with Noe et al. (2013) finding that Spearman's 'g' and informal learning have a negative relationship.

Not only are capabilities important, but ***perceived capabilities*** can also be equally important. As observed in the Theory of Planned Behaviour, perceived behavioural control can be an antecedent to learning intention, and so an individual's perceptions can be useful in predicting their intention, and in turn, their learning participation.

Self-efficacy is one of the most widely studied and cited predictors of learning and development participation. Self-efficacy is generally defined as a person's confidence in their capability to perform a task (Bandura, 1986). Self-efficacy can be measured in two ways: at a functional level (e.g. self-efficacy for development), or at a general level (i.e. generalised self-efficacy). Generalised self-efficacy can be defined as whether a person is confident that they are capable of performing a task, irrespective of the task itself (Chen, Gully & Eden, 2004).

Both generalised self-efficacy and self-efficacy for development have previously been linked to employees' participation in voluntary development activities, with those higher in such traits participating in more activity than those lower in these measures (e.g. Colquitt et al., 2000; Maurer, et al., 2003; Noe & Wilk, 1993; Noe et al., 2013). To this end, a systematic review of the literature by Kyndt and Baert (2013) suggests self-efficacy to be the most important antecedent in predicting participation in development activity.

Past experiences of learning activities can help contribute to self-efficacy and to one's perceived and actual capability. Whilst it has been shown that prior participation in formal learning is a strong predictor of later participation in formal learning (Hurtz & Williams, 2009; Maurer et al., 2003), the same has not been shown for informal learning (Schulz & Roβnagel, 2010).

5.3 ATTITUDES AND TRAITS

5.3.1 Proximal antecedents: learning motivations

Proximal antecedents are those that are very closely related to learning, and include measures such as 'motivation to learn' and 'learning goal orientation'.

Motivation to learn is defined as the desire to engage in training and development activities and embrace learning experiences (Noe & Wilk, 1993). It

has regularly been linked with development activity and formal learning: relating to training participation across different measures, organisations and contexts (Noe & Wilk, 1993); predicting several types of development activity participation (Birdi *et al.*, 1997); and predicting training and development over a twelve-month period (Tharenou, 2001). It has also been demonstrated to mediate the relationship between proactive personality and training participation (Major et al., 2006), and to predict participation in general development activities (Hurtz & Williams, 2009). Fewer studies have explored the importance of motivation to learn in predicting informal learning, although similar positive relationships have been demonstrated by Choi and Jacobs (2011), Lohman (2005) and Moon and Na (2009).

Goal orientation is a concept frequently found in the learning and development literature, and individuals can be categorised as possessing an orientation of one of two types: learning goal orientation, or performance goal orientation. Reviews of the literature find goal orientation to be thought of as a stable, trait-like individual difference (DeShon & Gillepsie, 2005; Payne, Youngcourt, & Beaubien, 2007).

Those with a learning goal orientation strive to understand new things and increase their competence and skills through pursuing challenging and developmental activities (Dweck & Leggett, 1988); they believe their knowledge and skills are malleable and can be improved with effort (VandeWalle, 2001). Those with a performance goal orientation, on the other hand, are more concerned with demonstrating their existing competence through task performance, proving their effectiveness compared to others, and avoiding negative judgements of their performance where possible. Thus, those with a performance orientation may be less concerned with learning, whereas those with a learning orientation may be more forthcoming when it comes to development opportunities (as shown by Hurtz & Williams, 2009), because of the intrinsic rewards attached to personal development for them (Garofano & Salas, 2005).

Having a learning goal orientation has also been shown to be particularly beneficial for informal learning, with those with such an orientation inclined to engage in more informal learning than those with a performance goal orientation (Choi & Jacobs, 2011; Klein, Noe & Wang, 2006). Going one further, Schulz and Roβnagel (2010) find that such an orientation is also positively associated with the success of one's individual learning endeavours.

Another form of goal orientation that has been theorised and received attention is that of the *self-directed learning orientation*, the "relative stable tendency to take an active and self-starting approach to work-related learning activities and situations, and to persist in overcoming barriers and setbacks" (Gijbels et al., 2010, p. 243). This orientation has also been found to be positively related to learning participation (Gijbels et al., 2010; Gijbels, Raemdonck, Vervecken, & Van Herck, 2012; Raemdonck, Gijbels & van Groen, 2014).

5.3.2 Medial antecedents: general work motivations

Medial antecedents are more removed from learning and include those that are more generally related to an individual's work and career orientation. They are less specific to learning, but still remain focused to the working environment.

One of the most commonly studied work-related motivation concepts is that of ***job satisfaction.*** Job satisfaction relates to the satisfaction, or lack of satisfaction, that an employee derives from their current job. Related to this is the idea of *occupational satisfaction*, which is concerned with the satisfaction derived from one's wider profession. *Job involvement* is commonly studied, as this relates to the psychological and emotional extent to which somebody participates in their work, profession and organisation, and is typically easier to measure than job satisfaction.

Generally, it is to be expected that those with higher satisfaction will engage in more workplace learning, and this positive association has indeed found to be the case in previous work (Hurtz & Williams, 2009; Rowold & Shilling, 2006), a relationship mediated by learning intention (Maurer et al., 2003; Maurer & Tarulli, 1994).

However, the distinction between job and occupational satisfaction may be an important one, given that Blau and colleagues (2008) found that job satisfaction only related with organisation development activities, and occupational satisfaction only positively related to professional development activities. In a similar vein, Renkema et al. (2009) have demonstrated that, while job satisfaction may positively relate to job-related learning intention, the opposite may be true for career-related learning intention, presumably because if employees are happy in their current job and organisation, they may be less concerned with developing broader skills to enhance their employability.

An individual's ***commitment*** to their organisation and profession may influence their intention to participate and their actual participation in learning activities. Commitment can be broken down into two different concepts: *occupational commitment*, that to the profession or occupation of the employee, and *organisational commitment*, the commitment of the employee towards their employer (Blau et al., 2008; Kyndt & Baert, 2011).

It may be expected that those with greater occupational and organisational commitment may participate in more learning activities than those with lower commitment. Indeed, while some studies find such an effect (e.g. Blau et al., 2008; Cavanaugh & Noe, 1999), others find either no significant relationship (e.g. Chan and Auster, 2003), or a negative relationship with intention (Renkema et al., 2009). As with job satisfaction, it may be that occupational and organisational commitment have different effects on learning participation, with Lauber et al. (2010) finding, with US federal nature reserve employees, that occupational commitment was positively related with professional development, but that organisational commitment was negatively related with professional development.

The issue of broader professional development can also be approached from the perspective of ***career orientations***. Employees may differ in how they view or

approach their career (e.g. career orientation, career exploration, need for self-improvement), how self-directed they are in managing and developing their career (e.g. self-directedness, protean orientation), or how self-aware they are of their own career-related strengths and weaknesses (e.g. career insight).

It would be expected that those who are more interested in and able to develop their career, and are more aware of their own needs, may participate in more learning activities. This positive relationship is indeed demonstrated to be the case for formal learning intentions (Sanders et al., 2011; Kyndt et al. 2011; Noe & Wilk, 1993), and formal learning participation (Noe & Wilk, 1993). Some studies show this to be important for both intention and general development participation, and for both formal and informal activities (Maurer et al. 2003; Maurer & Tarulli, 1994).

5.3.3 Distal antecedents: personality traits

The third group of attitudes and traits is that of the more general personality traits. These traits are not specific to learning or work, and may affect one's general personality throughout all aspects of their life.

In this thesis, the research is focused on these distal antecedents. One main reason for doing so is that organisations can measure these traits, and then use these measurements for multiple purposes and therefore see a greater return for their effort. It is also widely established that many of the more proximal traits, such as motivation to learn or learning goal orientation, are highly correlated with learning participation, to the point that many measurements could be criticised for potentially measuring the same concept.

The focus on the distal antecedents in this research also offers greater opportunity to explore the differences between formal and informal learning. With proximal antecedents, effects are likely to be similar, with a high learning motivation or engagement likely to be reflected in both high formal and informal learning participation. More distal antecedents such as personality traits, however, may be more likely to exhibit differences between different types of learning.

Key personality traits discussed here include the Big Five, chosen given their prominence in the personality literature and because the five traits are said to underlie all aspects of personality, and two narrow traits: proactive personality and curiosity. These narrow traits are likely to cut across measures such as the Big Five, but may be more specific to the topic studied. As Crant (2000) advises, researchers should explore "narrow traits . . . [chosen] because of their theoretical relevance". These narrow traits may be seen as "meta-competencies" (Hall, 1986; Harrison, Sluss & Ashforth, 2011) or "meta-constructs", which are important to identify and develop in employees so to promote independent and continuous learning (Cheng & Dainty, 2003).

5.3.3.1 The Big Five

The Big Five (Barrick & Mount, 1991; Costa & McCrae, 1978) is an extensively validated set of universal personality traits, said to underlie all aspects of human personality. They are comprised of conscientiousness (C), neuroticism (N), extraversion (E), openness to experience (O), and agreeableness (A). These traits

have commonly been studied in the training, development and informal learning literature, and have frequently found to be an antecedent of participation in such development activities (Barrick & Mount, 1991; Blume, Ford, Baldwin & Huang, 2010; Colquitt et al., 2000; Major, et al., 2006; Noe et al., 2013; Salgado, 1997).

From a practice perspective, understanding the links between the Big Five and employee learning is of great benefit, as measurement of the Big Five is readily available to most practitioners and organisations. Many trait-based personality measures commonly used in organisations easily relate to, or are based on, the Big Five.

Neuroticism, sometimes known more positively as emotional stability, is concerned with traits such as being anxious, depressed, angry, embarrassed, emotional, worried, and insecure (Barrick & Mount, 1991). Those low in Neuroticism are likely to be able to deal with setbacks, handle criticism, have fewer anxieties about learning, and may appreciate their own areas for development. Indeed, anxiety, a component of Neuroticism, has been linked to an individual's motivation to learn (Colquitt et al., 2000), and those low in Neuroticism have been shown to have less fear, stress and anxiety about learning, and so hold higher expectations about subsequent benefits, than those higher in Neuroticism traits (Feldman & Ng, 2011).

Another possible effect of Neuroticism on development activity is related to the emotional stability and capacity of individuals. Those low in Neuroticism, compared to those high in the trait, are likely to have more emotional capacity, and may be able to cope better with demands, such as participating in additional tasks and learning activities beyond their core job-related tasks (Gully & Chen, 2010).

A negative association between Neuroticism and learning intention and participation would therefore be expected, as already demonstrated in previous development and training studies (Blume et al., 2010; Krasman, 2010; Major, Turner & Fletcher, 2006; Noe et al., 2013; Salgado, 1997).

H3: Neuroticism has a significant negative relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

Extroversion is associated with traits such as being sociable, gregarious, assertive, talkative, and active (Barrick & Mount, 1991), and is often concerned with where individuals get their energy, whether that be from the external environment (Extroversion) or from themselves (Introversion).

Extroverts, therefore, may be more likely than their introverted counterparts to engage in development activities, as they feel more comfortable and have more energy in interacting with other people, an important part of the development process, particularly when learning from others. That said, introverts may be more disposed to learning through other means, such as through non-interpersonal sources. However, because extroverts typically become energised through social interaction, they may actively seek out learning opportunities involving others, as a means to generating energy. Thus, the argument for a positive relationship

between Extroversion and both informal, and formal, learning participation is more compelling. Such a relationship is regularly discovered in training and development literature (Barrick & Mount, 1991; Krasman, 2010; Major, et al, 2006; Noe et al., 2013; Wolff & Kim, 2012). Lohmann (2005) also finds that a similar concept, an 'outgoing personality', has a positive effect on informal learning participation.

H4: Extraversion has a significant positive relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

Openness to Experience is concerned with traits such as imaginative, cultured, curiosity, original-thinking, broad-mindedness, and intelligence (Barrick & Mount, 1991). Those high in this trait typically appreciate variety and intellectual stimulation, and tend to be better at grasping new ideas (Costa & McCrae, 1978). Thus, those high in Openness to Experience may be more likely than those low in such a trait to engage in learning activities, actively seeking out new learning experiences due to their intellectual curiosity. Unsurprisingly, a positive relationship between Openness to Experience and development activity participation has been found frequently in previous studies (Barrick & Mount, 1991; Krasman, 2010; Major et al., 2006; Noe et al., 2013; Salgado, 1997).

H5: Openness to Experience has a significant positive relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

Agreeableness is associated with traits such as courteous, flexible, trusting, good-natured, cooperative, forgiving and tolerant (Barrick & Mount, 1991). With individuals high in this trait being more cooperative, friendly and trusting, they may find it easier to engage with others, approaching them for feedback and sharing issues and concerns with them – both important aspects of informal learning. Compared to other Big Five traits, links between Agreeableness and development participation have not been as frequently found. This may because the nature of Agreeableness may be more suited for informal activities within the organisation; behaviours such as asking for feedback or sharing issues are more likely to happen with familiar contacts and colleagues. This is concordant with previous studies that have found positive associations between Agreeableness and development activity participation, but only within informal or internal contexts (Noe et al., 2013; Wolff & Kim, 2012).

H6: Agreeableness has a significant positive relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

Conscientiousness is associated with traits such as dependability, being responsible, organised, planful, hardworking, achievement-oriented, and persevering (Barrick & Mount, 1991). Conscientious individuals have also been reported as exhibiting a constant striving for success, the tendency to set challenging goals, and a will to do what it takes to succeed (Barrick, Mount & Strauss, 1993).

As such, individuals high in Conscientiousness are likely to participate in more learning activities than those low in such a trait. They are more likely to be dutiful in following learning goals, and be hard-working in taking part in activities that lead to achievement-oriented benefits.

Indeed, such a positive relationship between Conscientiousness and activity participation has been exhibited in various training and development studies (Barrick & Mount, 1991; Blume, et al, 2010; Krasman, 2010; Major, et al, 2006; Noe et al., 2013; Salgado, 1997).

H7: Conscientiousness has a significant positive relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

5.3.3.2 Proactive Personality

Proactive Personality (Bateman & Crant, 1993, pg. 105), defined as the "relatively stable behavioural tendency to identify opportunities, show initiative, take action, and to persevere to bring about change", seems particularly fitting in a 'boundaryless' work environment that values individual and self-directed development. Thus, those with a proactive trait would be expected to participate in more informal learning activities than those low in such a trait, given that they will be predisposed to identifying opportunities and acting upon them.

This concept has proven to have incremental validity over the Big Five in predicting development activity (Crant, 1995; Major et al., 2006), and is also distinct from the Big Five, with these traditional traits only accounting for 26% of the variance of proactive personality (Major et al., 2006). Numerous studies link Proactive Personality with development participation, including self-development (McGlynn, 2011; Orvis & Leffler, 2011), and self-directed learning in low-qualified employees (Raemdonck, van der Leeden, Valcke, Segers & Thijssen, 2012).

Outside of the development literature, Proactive Personality is linked to objective and subjective indicators of career success (e.g. Seibert, Crant, & Kraimer, 1999; Seibert, Kraimer, & Crant, 2001; Erdogan & Bauer, 2005; Rauch & Frese, 2007), even after controlling for other factors (Seibert et al., 1999), in longitudinal studies (Seibert et al., 2001), and 10 years later after controlling for the Big Five and goal orientation (Maurer & Chapman, 2013). Socialisation research also shows Proactive Personality to predict newcomers' reports of task mastery (Kammeyer-Mueller & Wanberg, 2003), which is related to the idea of learning and development.

Noe et al. (2013), in their recent study of informal learning and its antecedents did not include Proactive Personality in their measurements, instead choosing 'Zest', a concept from Positive Psychology research, defined as "one's approach to life with eagerness, energy, and anticipation" (Peterson & Seligman, 2004). The authors found that Zest predicts an individual's participation in informal learning activities, beyond that of the Big Five. It could be argued, however, that Zest is not dissimilar from, and indeed may be capturing the same concept, as Proactive Personality. Indeed, earlier work (McGlynn, 2011) has found a psychometric

measure of Drive, which itself is defined in a very similar way to Zest, to correlate extremely highly with Proactive Personality.

H8: Proactive Personality has a significant positive relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

5.3.3.3 Trait Curiosity

Trait Curiosity is defined as "recognising, embracing, and seeking out knowledge and new experiences" (Kashdan et al., 2009). In a study exploring psychological strengths with 12,500 US adults and 450 Swiss adults, Curiosity was the most commonly endorsed strength out of 24 possible fundamental strengths. It is one of the earliest studied psychological traits, originally labelled as 'scientific curiosity' by William James (1890). Indeed, empirical study has shown curiosity to be an important trait across life domains, predicting subjective wellbeing (Kashdan & Steger, 2007), health (Gallagher & Lopez, 2007) and even mortality rates (Swan & Carmelli, 1996).

Curiosity is extensively studied in the educational literature, being linked to school related (Day, 1982) and academic-related learning (von Stumm, Hell, & Chamorro-Premuzic, 2011). The beginnings of the study of Curiosity in relation to work can also be seen, and Sonnenberg and Goldberg (1992) stress the importance of fostering curiosity in the workplace so as to encourage employees to investigate and learn new things. Mussel (2013) demonstrates, in a sample of 320 industrial apprentices, that curiosity is a significant predictor of job performance, with incremental validity over the Big Five.

Given that Curiosity has been found to relate to the building of interpersonal relationships (Kashdan & Roberts, 2004), and the intrinsic motivation to learn (Deci & Ryan, 2002), it seems plausible that curiosity could also predict informal learning. A small number of studies have investigated this, with Moon and Na (2009) demonstrating that workplace learning has a moderately positive relationship with curiosity in manufacturing employees in Korea; with Reio and Wiswell (2000) finding that curiosity predicts socialisation-related learning and job performance for newcomers in the service industry; and with Harrison, Sluss and Ashforth (2011) demonstrating curiosity holds a positive relationship with information seeking in newcomers to a telemarketing firm.

H9: Trait Curiosity has a significant positive relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

6 SITUATIONAL FACTORS

The support provided by an organisation has regularly been found to predict employees' participation in development activities (Maurer, Weiss, & Barbeite, 2003; McGlynn, 2011; Noe & Wilk, 1993). Furthermore, support for development provided by an organisation can go as far as predicting career success 10 years later, influencing pay level, job and career satisfaction, and the number of promotions experienced by an individual (Maurer & Chapman, 2013).

Support, in this context, can be considered to consist of two elements: job-related characteristics, such as time and workload, autonomy, or job role; and social support, such as psychological support from colleagues and a positive development climate in the organisation (Carbery & Ganavan, 2007; Kozlowski & Hults, 1987; Noe & Wilk, 1993).

RQ5: Do situational aspects (autonomy, interpersonal support, time and role demands) predict an employee's participation in (a) informal learning, (b) formal learning, and their (c) intention to engage in learning?

6.1 Job and Task Characteristics

6.1.1 Time and Work Demands

As seen in Chapter 3, time and work demands are one of the most commonly reported barriers to learning, frequently occurring in qualitative studies of informal learning (Billett, 1995; Crouse et al., 2011; Doyle & Young, 2003; Lohman, 2005).

Quantitative studies have found similar results, with Kyndt and Baert's (2011) systematic literature review identifying four quantitative studies that confirmed a lack of time as being a barrier for formal learning (Brown & McCracken, 2009; Chan & Auster, 2003; Noe & Wilk, 1993; Warr & Birdi, 1998) and one that specifically identifies time as a barrier for informal learning (Chan & Auster, 2003). Studies with Dutch care home workers and police workers have also found time to have a negative relationship with informal learning (Gijbels et al., 2012; van der Heijden et al., 2009).

Work demands have been similarly found to affect informal learning. While most studies find work demands to negatively influence learning (Birdi et al., 1997; Lauber et al., 2010; Murray & Lawry, 2011; Noe & Wilk, 1993), one study has found that greater workload can actually lead to greater informal learning (Doornbos et al., 2008). This could be because informal learning often occurs as a by-product of one's work, and it may be that challenging and stretching situations from which one can learn are more common when work demands are greater.

Overall, however, a negative relationship between work-time demands and learning would be expected. The greater work or time demands an individual has in their job, the less time they may be able to dedicate to informal learning, and the less energy they may have to concentrate on development.

H10: Time and work demands have a significant negative relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

6.1.2 Autonomy

Autonomy is described as the extent to which "a job allows freedom, independence and discretion to schedule work, make decisions, and choose the methods used to perform tasks", and has been described as "perhaps the most widely studied work characteristic" (Morgeson & Humphrey, 2006).

Existing learning research gives autonomy limited attention. Of the research that has investigated the link between workplace learning and autonomy, findings have been mixed, with some studies finding a positive relationship (Gijbels et al., 2012; Kyndt et al., 2011; Ouweneel et al., 2009) and others finding a negative relationship (Doornbos et al., 2008; Ito & Brotheridge, 2005). Many of these studies measure autonomy in terms of 'job control' in relation to the job demands-control model.

One reason for the mixed findings thus far may be that most studies have taken a broad approach to measuring autonomy, rather than breaking it down into its different types. Autonomy can be broken down into three components: scheduling autonomy, decision-making autonomy, and method autonomy (Breaugh, 1985; Morgenson & Humprey, 2006), although many studies have focused on timing control and method control (e.g. Jackson, Wall, Martin & Davids, 1993; Wall, Jackson & Mullarkey, 1995), as decision-making autonomy is typically less common. Similarly, autonomy may have different effects on different types of learning: intentional informal learning, incidental informal learning, and formal learning. Studying these different effects and different autonomy types may shed light on why existing research has demonstrated mixed results.

On the whole, however, it would be expected that greater autonomy would mean that employees were more able to participate in learning activities, giving them greater flexibility to try new things as part of their work (methods autonomy), choose to schedule learning as part of their workday (scheduling autonomy), or make decisions that subsequently offer new opportunities for learning (decision-making autonomy).

H11: Autonomy (decision-making, methods, and scheduling) has a significant positive relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

6.1.3 Industry, sector or job role

There may be differences in learning participation between individuals in different industries, sectors or job roles. Many studies tend to focus on similar employees in single organisations, and so have not looked at such differences.

Some research studies have found that employees in the public sector participate in more formal learning than those in the private sector (Booth, 1991; Harris, 1999; Sala-Velasco, 2009), and that employees in the third sector participate in more formal learning compared to those in the private sector (Birdi et al., 2007).

Looking at industry, Kyndt & Baert (2011) identify differences in learning participation, with several industries found to have low participation, such as agriculture (Oosterbeck, 1996), manufacturing Greenhalgh & Mavrotas, 1994; Taylor & Urwin, 2001), construction (Oosterbeek, 1996; Taylor & Urwin, 2001), and hospitality (Taylor & Urwin, 2001); and others identified as having high participation, such as the medical industry (Oosterbeek, 1996), legal companies (Sala-Velasco, 2009), and non-trade (Greenhalgh & Mavrotas, 1994) and tertiary industries (Xiao & Tsang, 2004).

Rowold and Shilling (2006) investigated differences between departments in the same organisation, finding that outward-facing departments (e.g. sales) participated in more learning than internal departments (e.g. administration).

6.1.4 Contract type

Full-time employees have been found to participate in more formal learning compared to part-time employees (Greenhalgh & Mavrotas, 1994; Leuven & Oosterbeek, 1999; Thangavelu et al., 2011; Tharenou, 2001), and those in permanent roles have tended to participate more than those in temporary roles (Leuven & Oosterbeek, 1999; Oosterbeek, 1996). No studies to date have explicitly investigated this relationship in terms of informal learning.

One growing area of interest is in how learning participation may be affected for those who work from home. In 2014, it was estimated that 4.2 million people spend at least half their work time using their home (Office for National Statistics, 2014), a steady increase of 1.3 million from 1998. This rise may be attributed to the 'boundaryless' work environment and a lessening distinction between work and home, the advancement of technology, the increased expectation of flexibility, employers looking to cut overheads of office space, the rising costs of commuting, and government policies designed to encourage people with disabilities back to work (Advisory, Conciliation and Arbitration Service, 2014).

The office environment itself provides several opportunities that may influence learning participation and intention, such as being surrounded by colleagues, from whom one can learn, whether that be intentionally or incidentally, or by whom one may be spurred into action as a result of competitive behaviours or the need to keep up. At home, there may be greater distractions, and less opportunity to incidentally hear of formal opportunities or engage in informal learning.

H12: There are differences between home-workers and office-workers in levels of a) informal learning participation, b) formal learning participation, and c) intention to develop. Office-workers exhibit higher learning participation and intention than home-workers.

6.1.5 Occupational level

It has been consistently found that those in higher level occupations participate more in formal learning activities than those in lower level occupations (Cavanaugh & Noe, 1999; Noe & Wilk, 1993; Oosterbeek, 1996; Tharenou, 2001; Warr & Birdi, 1998). Few studies explore this effect in informal learning specifically, although Noe (1996) demonstrates that managers participate in more formal and informal learning activities than technical and clerical staff.

There may be many different reasons why this may be the case. It may be that management positions generally offer greater autonomy or provide greater access to opportunities. It may be that those who are promoted to management roles tend to be of a higher education level, may be better able to self-direct their learning, or may have greater career ambitions that may fuel their learning endeavours.

H13: There are differences between managers and front-line staff in levels of a) informal learning participation, b) formal learning participation, and c) intention to develop. Managers exhibit higher learning participation and intention than non-managers

6.2 Support for Learning

The support an individual may receive for learning can be diverse, and can include elements from both one's professional and personal life. Support can be thought of in one of three ways: formal support, such an organisation's policies and procedures; informal support, such as the organisational culture; or interpersonal support, that provided by other people either inside or outside the organisation.

Under conditions of high support, it would be expected that individuals participate more regularly in informal and formal learning activities, as they are reminded and encouraged to participate (e.g. by their supervisors or organisational cues), or are faced with fewer barriers that limit their ability to participate (e.g. family commitments, time demands, non-appreciative colleagues).

6.2.1 Organisational support

Organisational support has been said to be one of the most important predictors of work-related learning (Tharenou, 2001), and a large number of studies have found organisational support to positively relate with participation in development activities (e.g. Hurtz & Williams, 2009; Maurer et al., 2003). Organisational support can be of a formal or informal nature (Cerasoli et al., 2014): formal support relating to the tangible provision of opportunities and reward; and informal support relating to those intangible aspects, such as values and culture.

A ***positive learning culture or climate*** has regularly been demonstrated to predict participation in learning activities (Tabassi and Bakar, 2009; Tharenou, 1997), and this relationship has also been demonstrated with informal learning specifically (Berg & Chyung, 2008; Brown and McCracken, 2009; Maurer & Tarulli, 1994; Rowden and Conine, 2005; Schulz and Roβnagel, 2010). A positive learning culture can not only provide motivation and acceptance of learning activities, but can also act as a 'social norm' to guide planned behaviours.

Recognition and rewards can be an important way for an organisation to demonstrate its values, and recognition and reward programs that have rewarded informal learning have been found to have a positive effect on informal learning participation (Moon and Na, 2009; Rowden, 2002; Rowden & Conine, 2005). With reward and recognition, there is both the direct effect on learning, in that employees may engage in learning behaviours to receive reward or recognition, but it may also be that such structures help establish the values and culture of the organisation, which subsequently affect employee behaviour.

Organisational support is also important in providing ***opportunities and resources*** to employees. This is more likely to be the case for formal learning, where access to training courses, funding, and the provision of training materials are important

for engaging in formal learning activities. Indeed, the perceived availability of opportunities has been found to be a strong predictor of participation in development activity (Hurtz & Williams, 2009; Maurer et al., 2002), a finding also replicated for informal learning (Schulz & Roβnagel, 2010). For informal learning, these opportunities and resources are likely to be very different to those for formal learning, and have been found to include support such as opportunities to interact with peers (Mistler-Jackson & Songer, 2000), and the opportunity to seek and receive feedback (de Groot et al., 2012).

6.2.2 Interpersonal support

Interpersonal support is that that is provided by other people, including line managers, peers and colleagues, direct reports, and friends and family. An interpersonal support network is likely to vary considerably from person to person, given the different combination of people that can offer support in different ways, and support received by individuals may differ considerably between employees even within the same organisation.

Line managers have repeatedly been found to be one of the most important influencers of employee engagement and wellbeing, and the same may be true for learning. Positive relationships between supervisor support and engagement in development activity have been routinely found in previous research (Birdi et al., 1997; Ito & Brotheridge, 2005; Maurer et al., 2003; Maurer & Tarulli, 1994; Ouweneel et al., 2009; Noe, 1996; Tharenou, 2001; Warr & Birdi, 1998). Specifically, in terms of informal learning, it has regularly been found that support from senior managers leads to greater participation in informal learning by employees (Ashton, 2004; Choi and Jacobs, 2011; Ellinger, 2005; Sambrook & Stewart, 2000; Skule, 2004; van der Heijden et al, 2009). Line managers may be able to support employees in a number of ways: both through providing motivation and encouragement, and by directly providing access to learning opportunities. Line managers are likely to be more important for formal learning than informal learning, given that they may control access to training courses and funding, but may equally act as a gatekeeper to many informal learning opportunities too.

Colleagues and co-workers are another group that can support workplace learning, a relationship found for formal learning and general development activity (Chiaburu & Marinova, 2005; Maurer et al., 2003; Tracey, Tannenbaum, & Kavanagh, 1995; Warr & Birdi, 1998). One study also demonstrates a positive relationship between colleague support and informal learning (Ouweneel, Taris, Van Zolingen & Schreurrs, 2009). Like managers, colleagues can encourage and motivate learning behaviours, but they can also offer learning opportunities. Support from one's colleagues is likely to be particularly important for informal learning, given that colleagues are often a source of learning and development interaction.

As has been argued throughout the thesis so far, it is important to develop understanding around the important role of ***employees' non-work life***. Employees may be supported in their learning by a number of individuals outside work, including their family, their friends, or colleagues at sports or social clubs. Despite

the need for this greater understanding, there is relatively little research to-date. However, the little research there has been has demonstrated that this non-work support from friends and family has a positive association with both formal and informal development activities (Maurer et al., 2003; Warr & Birdi, 1998). Those outside work can not only support or hinder learning through competing for time or providing encouragement, but they can often provide learning opportunities by providing external insights.

H14-17: Support from one's (H14) line manager, (H15) colleagues, (H16) organisation, (H17) friends and family has a significant positive relationship with a) informal learning participation, b) formal learning participation, and c) intention to develop.

7 Opportunities to Build on Current Research

As well as testing hypotheses relating to underexplored variables, such as curiosity and autonomy, there are several other ways in which our current understanding of informal learning can be enriched, including exploring learning in new samples and contexts, assessing the relative importance of antecedents, and beginning to explore the differences between incidental and intentional informal learning, and between informal learning and formal learning.

7.1 Generalisability

Manuti et al. (2015), in their literature review of workplace learning, argue that there is no "one-size-fits-all" approach to workplace learning, and suggest that future research should "focus on the features of different workplaces, analysing how specific contexts and industry areas as well as employees' characteristics may support learning both in its formal and informal dimensions".

Much of the existing work has been carried out with US-based samples, and there is little quantitative study of learning and development antecedents in the UK and Europe. Two of the key studies cited so far (Major et al., 2006; Noe et al., 2013) have been in single organisations, studying 180 restaurant managers and 183 employees of a financial services firm respectively. Other work, studying broad development activity, has used more general samples, with work by the likes of Hurtz and Williams (2009), Maurer et al. (2003) and Noe and Wilk (1994) surveying larger numbers of people (N = 427, 800, 1,035) across multiple firms or within the general US population.

Given existing samples used, there is therefore the opportunity to expand on our current understanding by studying learning in different workplaces, within different employee subgroups (profession, job level), and in a different country with a different educational and working environment.

The generalisable nature of findings is also tested in this thesis, with hypotheses surrounding the differences in learning participation and intention between managers and non-managers, and between home-workers and office-workers.

RQ7: Are there differences in informal learning participation, formal learning participation, and intention to engage in learning between (a) those of different occupational groups (contact centre; office staff; field workers); and (b) between home-workers and office-workers?

As well as there being differences in participation levels between the two groups, it may also be that antecedents have different effects on outcome variables for each of the groups studied.

For example, in office-workers, it may be that support from colleagues has a greater relationship with informal learning participation than it does in home-workers, given that office-workers will tend to work more often in an environment surrounded by colleagues.

RQ8: Do individual differences and situational factors predict informal learning participation, formal learning participation, and intention to engage in learning in different ways for (a) those of different occupational groups, and (b) home-workers and office-workers?

7.2 THE RELATIVE IMPORTANCE OF ANTECEDENTS

Much of the existing research has set out to identify significant relationships between antecedents and development activity. No research to date has begun to look at the relative importance of these antecedents, analysing which antecedents may be the most effective in predicting learning intention or participation.

An understanding of the relative importance of antecedents is particularly important in considering how organisations may be able to best support learning. Employers do not have the time or resources to measure an extensive range of variables, and so would prefer to concentrate their efforts on those that may offer the greatest return in predicting future learning participation. Similarly, by identifying important variables, academic research can begin to focus on the key variables, exploring more complicated mediation and moderation models to begin to understand exactly how these antecedents exert their effect. To consolidate the number of antecedents identified as predicting learning intention and participation, it is proposed that antecedents' relative importance is explored in this thesis.

RQ5: Which of the personality and situational antecedents studied are most important in explaining the variance in (a) informal learning participation, (b) formal learning participation, and (c) intention to develop?

7.3 INCIDENTAL VS INTENTIONAL INFORMAL LEARNING

As outlined in Chapter 2, informal learning can be one of two types: incidental, where the employee participates in learning that they do not plan, such as a passing conversation by the water-cooler, or a new job challenge that arose as part of the work-day; and intentional, where the employee intended and planned to participate in learning beforehand, such as including new job experiences in

their personal development plan and then going on to enact these plans. Incidental informal learning, by its very nature, is difficult to measure, but it is hoped that the design of the subsequent study arising from this literature review will measure aspects of both incidental and intentional learning.

One way to distinguish between intended and incidental learning is through the measure of employees' intention to develop. As explained earlier, according to models such as the Theory of Planned Behaviour, many behaviours are preceded by a prior intention to participate. In this instance, it may be that antecedents indirectly affect *intentional* informal learning mediated through intention, whereas antecedents have a direct effect on *incidental* learning.

It is expected that the antecedents studied may influence one or both of incidental and intentional learning. Age and tenure are likely to be completely mediated by intention to develop, with older and more tenured employees likely to have less intention to participate in learning activity than younger and less tenured employees. For the personality variables, it would be expected that there would be both direct (incidental) and indirect (intentional) effects: one's personality may affect one's intention to participate in development, which then goes on to influence participation; but one's personality may also mean that the individual finds themself in certain situations, or more able to take advantage of arising situations, that offer opportunities for learning. On the other hand, autonomy and time demands are likely to have a direct effect only. While employees may intend to participate in development, regardless of their time or work situation, such variables may directly affect their ability to experience learning. Support, on the other hand, may have mixed effects again – affecting both intention, and having a more direct effect on learning participation. Other people in interpersonal networks can not only offer motivational support, such as encouragement or offering a benchmark, both of which may increase employees' intention to develop, but other people can also directly provide opportunities and craft situations in which the employee can learn.

RQ6: Which of the personality and situational antecedents studied are mediated by intention to develop in predicting (a) informal learning participation, and (b) formal learning participation?

7.4 INFORMAL VS FORMAL LEARNING

Many existing studies have tended to focus on either formal learning or general development activity as a whole. Fewer studies have explicitly measured informal learning, and none-to-date have studied the differences between informal and formal learning (Kyndt & Baert, 2013). While this thesis is focussed on informal learning, and is titled as such, the study of formal learning offers the opportunity to better understand informal learning, and to compare and discuss findings with, and in relation to, previous empirical work. As such, the effects of antecedents are considered separately for both informal and formal learning participation in each of the research questions posited.

While hypotheses remain the same for both informal and formal learning participation for each of the antecedents, given that the effects of each

antecedent are expected to result from similar mechanisms, it may be that the effect size is different between informal and formal learning. In informal learning, for example, it may be that personality factors are more strongly related with participation than they are with formal learning participation, as formal learning activities tend to be more organisationally-controlled and so personality antecedents may not be able to have as great an influence on formal learning compared to informal learning. Interpersonal support sources, in particular, may differ between informal and formal learning. For informal learning, colleagues and managers may be the more important sources of support, given how interaction with such groups is inherent in many informal learning activities. For formal learning activities, however, managers and the organisation may be more important, given that these sources are more likely to act as gatekeepers to formal learning activities.

8 SUMMARY OF RESEARCH QUESTIONS

Throughout the chapter, six research questions have been proposed, which are to be studied in detail in Chapter 7.

The first two research questions are concerned with testing hypotheses relating to various antecedents that may predict development intention and informal and formal learning participation. These antecedents are considered in distinct groups: personality-based antecedents, and situational antecedents.

RQ3: Do individual differences (proactive personality, curiosity, Big Five, age, tenure) predict an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

RQ4: Do situational aspects (autonomy, interpersonal support, time and role demands) predict an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

However, while these questions, along with existing research consider a wide variety of antecedents that may predict learning, no studies to date have assessed the *relative* importance of these antecedents. As such, a research question is proposed surrounding the relative importance of the antecedents that were tested as part of research questions four and five.

RQ5: Which of the personality and situational antecedents studied are most important in explaining the variance in (a) informal learning participation, (b) formal learning participation, and (c) intention to develop?

In considering both personality and situational antecedents, there has been consideration of the ways in which they could affect informal and formal learning participation: they could affect intention, which in turn affects participation, or, instead, affect participation directly. It is therefore suggested that a mediation analysis be undertaken to assess the role of development intention in mediating the relationship between antecedents and subsequent participation in informal and formal learning activities.

RQ6: Which of the personality and situational antecedents studied are mediated by intention to develop in predicting (a) informal learning participation, and (b) formal learning participation?

Finally, is important to note that employees are not one homogenous group, and so learning participation, and the relationships between antecedents and participation, may differ between different groups of employees. Two particular groups have been identified as having merit to study: office-workers versus home-workers, given the rise in home-working seen in the UK; and managers versus non-managers, given the fact that occupational level is likely to have an effect on participation in learning.

RQ7: Are there differences in informal learning participation, formal learning participation, and intention to engage in learning (a) between home-workers and office-workers; and (b) between managers and non-managers?

RQ8: Do individual differences and situational factors predict informal learning participation, formal learning participation, and intention to engage in learning in different ways for (a) home-workers and office-workers, and (b) managers and non-managers?

5. General methodology

1 Introduction

In this chapter, the overarching choices behind research methods are explored and justified. As a mixture of methods are used in the research, particular attention is drawn to the underlying philosophical assumptions behind mixing qualitative and quantitative methods, and there is a detailed consideration of how the different methods integrate and fit together as part of an overall research strategy. Elements common to all methods, such as organisational access and ethical considerations, are also discussed in this chapter.

2 Research Aims and Questions

The primary aim of the research is to further understanding as to how employers can best support their employees in their informal learning. Based on a review of the literature, discussion with learning and development professionals during the research design phase, and refinement of questions during data collection, eight core research questions were developed:

RQ1: What barriers do employees perceive may hinder informal learning?

RQ2: What roles do other people play in supporting employees' informal learning?

RQ3: Do individual differences (proactive personality, curiosity, Big Five, age, tenure) predict an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

RQ4: Do situational aspects (autonomy, interpersonal support, time and role demands) predict an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

RQ5: Which of the personality and situational antecedents studied are most important in explaining the variance in (a) informal learning participation, (b) formal learning participation, and (c) intention to develop?

RQ6: Which of the personality and situational antecedents studied are mediated by intention to develop in predicting (a) informal learning participation, and (b) formal learning participation?

RQ7: Are there differences in informal learning participation, formal learning participation, and intention to engage in learning between (a) between home-workers and office-workers; and (b) between managers and non-managers?

RQ8: Do individual differences and situational factors predict informal learning participation, formal learning participation, and intention to engage in learning in different ways for (a) home-workers and office-workers; and (b) for managers and non-managers?

The research questions have been developed and refined with the intended research methods in mind, and so are phrased in a way that is appropriate to the chosen method.

3 RESEARCH PHILOSOPHY

Research, and in particular the methods chosen in carrying out that research, is guided by the researcher's worldview. This section outlines my worldview as a researcher and briefly considers the impact this has in terms of my choice of methods and approach to generating and using research conclusions.

When considering worldviews, it can be helpful to consider different *paradigms*, patterned sets of assumptions about reality (*ontology*), our knowledge of that reality (*epistemology*), and how we go about knowing that reality (*methodology*) (Guba, 1990).

This thesis draws upon a mixture of methods, both qualitative and quantitative, which to methodological purists raises issues in terms of research philosophy. Traditionally, quantitative research is rooted in *positivism*, the idea that there exists a definite reality that can be tested independent of the researcher and their values. Qualitative research, on the other hand, is typically rooted in *constructivism*, the idea that reality is not independent from human consciousness and so knowledge is subjective to every individual and cannot be composed of ultimate or consistent truths. The use of a mixture of quantitative and qualitative methods may be controversial for some, with qualitative and quantitative methods said to be born of different philosophical schools, and therefore incompatible together ("the incompatibility hypothesis", Howe, 1988).

However, there is also the school of thought that asserts that research methods are not necessarily linked to their philosophical assumptions, and can be independent of their epistemological and ontological preconceptions (Bryman & Bell, 2007). Such is the idea of *pragmatism* (Bryman, 1984; Johnson & Onwuegbuzie, 2004), which rejects the choice between philosophies and instead places emphasis on "what works", using thought as a tool for prediction, action and problem solving. Pragmatists aim to find a middle-ground, rejecting the incompatibility hypothesis, so as to find workable solutions, and hence can assert that "research approaches should be mixed in ways that offer the best opportunities for answering important research questions" (Johnson & Onwuegbuzie, 2004, p.15).

In the context of occupational psychology, this approach seems realistic and fair, especially as occupational psychologists endeavour to understand the world in order to make a practical difference to organisations' and individuals' development and learning practices. Indeed, Gorard (2010) regularly compares research design to real life scenarios, such as buying a house, in which we would naturally rely on a mixture of methods and approaches in gathering information to make a decision. Instead of finding an absolute or perfect truth, Johnson and Onwuegbuzie's (2004) view of pragmatism, adopted in this thesis, appreciates that there can be multiple, even conflicting, theories and perspectives, and these

tentative 'truths' are provisional, may change over time, and we should be "ready tomorrow to call it falsehood" (James, 1907). Nonetheless, these 'truths' provide an important basis for action and for living in the meantime.

Miles and Huberman (1994) aptly sum up the approach to research adopted in this study, stating that researchers should be "open to an ecumenical blend of epistemologies and procedures and leave the grand debate to those who care most about it" (p. 20), and that "research is actually more a craft than a slavish adherence to methodological rules. No study conforms exactly to a standard methodology; each one calls for the researcher to bend the methodology to the peculiarities of the setting" (p. 5).

Given that researchers do not have observer-independent access to the world and have to judge the quality of theory and its value, it is important for both the academic and practice communities to continually challenge and question both the conclusions made and the intended purpose of the research. To participate in those processes, researchers should be open and reflexive about their role in the research process, and, to this end, a reflexive statement of my own background and role is included in Appendix 1.

4 RESEARCH DESIGN

A mixed methods research design, in which qualitative and quantitative approaches are combined, is used in this thesis so as to best answer the research questions. This section outlines the research design in further detail, justifying reasons behind the choice of approaches used.

When considering a mixed methods research design, there are a number of typologies that can be used to guide the design process. Typologies can help researchers logically work through a research design in a language common to other researchers in similar fields (Teddlie & Tashakkori, 2006). One popular and extensively-cited typology is Teddlie and Tashakkori's (2009) Methods-Strand Matrix typology, which highlights four key methodological points to consider: the number and type of methodological approaches; the number of strands; the implementation of design; and the integration of strands.

Taking each of these in turn:

1. **Number and type of methodological approaches:** Two methodological approaches are employed: a qualitative approach using interviews and the repertory grid; and a quantitative approach using an online survey using quantitative measures.

   The qualitative approach was chosen to answer research questions one and two, both of which required a deeper understanding of *how* other people support or hinder informal learning, and for identifying potential barriers to informal learning. Qualitative data were collected and analysed using a hybrid approach, incorporating both inductive and deductive elements. This approach was taken given that there is some existing

literature that may be applicable to both research questions (barriers to learning, and the roles that others play in supporting learning), meriting a deductive approach. However, much of this existing literature is not specific to informal learning, particularly when considering the roles others play, and so some inductive elements were incorporated so as not to limit the collection and interpretation of data.

For research questions three to eight, a quantitative approach best fitted the task at hand. There is already a good understanding of the individual differences and general support aspects that may affect development and formal learning participation, and so it does not require much of a leap to deductively test relationships with these variables and informal learning. Well-validated measurement scales for many of the personality and situational predictors already exist, as do taxonomies that could be adapted to informal learning, readily allowing quantitative measurement and testing for these research questions. The quantitative approach also created further potential for impact, with many organisations interested in being able to predict learning participation by use of questionnaire.

2. **Number of strands:** The research is split into two strands as the two methodological approaches are quite distinct and are used to answer different research questions. As a result of splitting the research into two strands, there was the opportunity to use different participant samples, thereby reducing the burden on participating employees or organisations.

3. **Implementation of the design:** The qualitative data collection took place between November 2014 and February 2015, which was followed by the quantitative data collection from April 2015 to July 2015. Using Morse's (1991) notational system, the research followed a QUAL->QUANT design, where both qualitative and quantitative stages were of equal importance, and the quantitative stage followed the qualitative stage.

   The fact that the quantitative stage followed the qualitative stage was, in this case, mainly by chance. Originally, it was planned for the two stages to be concurrent so as to reduce the overall time taken for data collection. However, due to delays in finalising organisational access, the two became out-of-sync. This did, however, allow the opportunity for initial findings from the qualitative study to inform the design of the quantitative study.

4. **Integration of strands:** Although the two strands are fairly independent given that they mainly tackle different research questions, there are a number of times at which they were integrated during the research process. Firstly, the initial findings from the qualitative research informed the refinement of the design of the quantitative survey. Secondly, both the qualitative interviews and the open-ended questions from the quantitative survey strand are integrated in answering Research Question 1 about barriers to informal learning. Thirdly, findings from all strands of

the research are integrated in the general summary and integration at the end of the thesis.

Greene, Caracelli and Graham (1989) highlight a number of purposes for choosing to mix methods, including triangulation, complementarity, development, initiation, and expansion. This project primarily takes an *expansive* approach, with different methods used to measure different phenomena, although there are elements of one method *informing* development of the other, and both methods being used to *complement* each other in answering research question one.

A summary of the research design is shown in Figure 5.1.

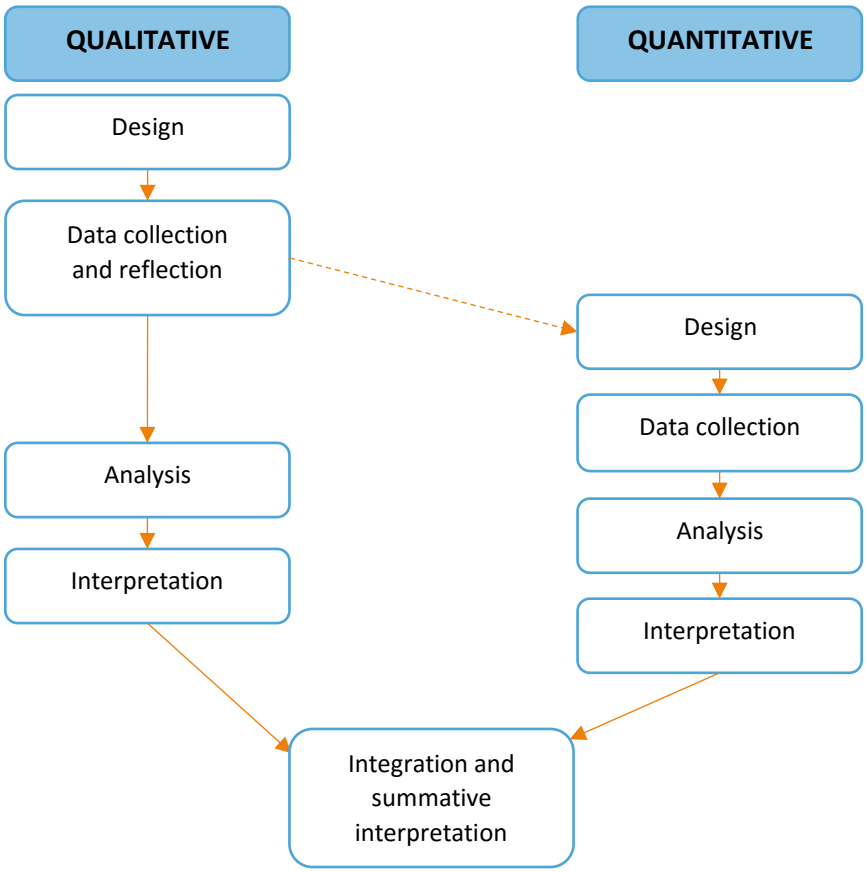

Figure 5.1: A flow chart showing the methodological approaches; stages; implementation; and integration of the mixed methods research design.

5 Organisational Access

Three organisations participated in the research: 31 individuals participated in the qualitative study, made up of 21 from a large UK energy firm (EnergyCo) and 10 from a small UK educational charity (EdChar); and 1,811 individuals participated in the quantitative study, with participants from a large multinational telecommunication firm (TelCo).

Although the final sample is large and broadly representative, there were a number of challenges and difficulties in arranging and negotiating organisational access, which have not only influenced the design and implementation of both studies, but also highlight the necessity for critical discussion over the generalisability of conclusions raised from organisational research.

5.1 Obtaining Research Access

The original research was designed to follow on from previous research at MSc level that had been conducted with a Big Four professional services company. Although this company were keen to participate in further research, the point of contact at that organisation left the firm shortly after the research was designed (at Confirmation Review stage), and their replacement did not have the time to continue to support the project. As such, it was necessary to find a new participating organisation who would be interested in an existing research design. Organisations were recruited through two main routes: exploring personal networks and contacts, and through "cold" approaching suitable gatekeepers in organisations.

Few organisations were identified through personal or institutional networks. Two organisations were approached through contacts at an Occupational Psychology consultancy, only one of whom was able to participate in the study (EdChar).

The remaining organisations were approached over email. Suitable named contacts in 'Chief Learning Officer' and 'Head of Learning and Development' roles were approached with an initial email that included a PDF document outlining the research and the benefits of participating for both the organisation and their employees. These contacts were found through LinkedIn and Google searches and through looking at speaker programmes at industry conferences and training events. Emails were sent to around 50 organisations in total, of which 16 replied to the invitation. 4 organisations replied saying they were unable to participate, whereas exploratory conversations and negotiations took place with the remaining 12. Individual negotiations with organisations lasted between 3 weeks and 7 months. Both EnergyCo and TelCo were recruited through emails sent to previously unknown contacts.

After more detailed negotiations, many organisations were not able to accommodate the research, and some contacts failed to return calls or emails despite engaging in discussions over many months. The most common reasons for not being able to participate included: ongoing change in the organisation, such as "going through a lot of change", "restructuring the business", "making redundancies"; not having the money to support informal learning and so not wanting to raise awareness of the topic with their employees; not having the resources to adequately support the research; and failing to understand why a researcher may be offering the project free-of-charge.

5.2 Bias in Organisational Samples

The process by which organisational access came about highlights a number of issues surrounding the generalisability of conclusions gathered from organisational research.

Given that only a small number of those organisations approached chose to take part in the project, there may be a selection bias in those organisations that choose to participate in research projects, and participating organisations may not be typical of the average business. One of the most common reasons for non-participation was that the organisation was undergoing change. Perhaps, then, it may be the case that research typically happens with the seemingly few organisations that aren't undergoing larger change programmes. That said, in this project, all three participating organisations were undergoing numerous and frequent changes.

Another key concern is that, by and large, many researchers will be at the mercy of a contact person within an organisation, someone who holds and brokers the access to employees within that organisation. That contact can make a big difference between obtaining a poor or excellent quality sample, given that they will control access to participants, as well as managing negotiations surrounding study design, especially the questions asked and the language used. A good relationship is critical in ensuring there is good communication between researcher and participant, and for ensuring a shared understanding of sampling procedures.

Fortunately, in all three organisations, there were helpful and informed points of contact who understood the necessities for valid and reliable scientific research. At the large telecommunications organisation, the point of contact had a doctorate in social science; at the large energy firm, the point of contact had a Masters in Occupational Psychology and was studying for the Stage 2 qualification; and at the small charity, access was brokered and supported by an Occupational Psychology consultancy.

In both the quantitative and qualitative studies, it may be that organisational culture influences the studies' findings, and so subsequently limits the generalisability of any conclusions.

The quantitative study was conducted in a single organisation, albeit a large and multi-faceted organisation. It could be argued that the multi-faceted nature of this organisation – made up of many sub-cultures between professions, geographical sites and businesses within the overarching group – means that the sample could parallel one consisting of many more organisations. However, even at the group level, there is a concerted effort by group management to promote learning and development within the business, with a cross-business initiative being launched, financed and marketed to promote learning. As such, it is likely that employees in this organisation are more likely to aware of their informal learning than those in other organisations, and they may be better supported and rewarded than if they worked elsewhere. Baseline levels of learning and support may therefore be higher in this study than we would see in general, or that some

personal or situational factors may have less of an effect than we would see in the general population.

Like with the quantitative study, the culture of the organisations selected for the qualitative study may mean that their findings are not so typical of the general population. Purposive sampling was used to purposely include a wide and diverse range of participants, but these participants were still selected from only two organisations and not from a general population. While two very different organisations participated in the study – one large private sector company, and the other a small charity – they both shared a similarity in that they were positive and encouraging of learning and development. Like with the organisation in the quantitative study, this may again mean that effects observed in the qualitative study may not necessarily be representative, and, especially in this study, that barriers to learning, or the ways in which other people hinder or limit learning, may be understated.

In both cases, however, there is some inevitability of these limitations given the way in which research is conducted: with challenges in brokering access to employees within an organisation; and challenges in encouraging voluntary participation in interviews and surveys, particularly from those who are disengaged or disinterested in learning.

5.3 Sample Exclusion

Originally, there was one further organisation who participated in the quantitative survey, providing 84 responses. After the collection of data, this sample was not considered as it become apparent that the organisation had only distributed the survey to employees that had been identified as top-talent and who were actively engaged and participating in an employer-led development programme. As such, the sample was not representative of the typical employee and was excluded from any analyses in this thesis.

6 Ethical Considerations

The research was designed and conducted in accordance with the University of Sheffield's (2015) and the Economic and Social Research Council's (2015) ethics policies, as well as the British Psychological Society's Code of Ethics (2014) and Guidelines for Internet Mediated Research (2013).

Before the start of participant recruitment and data collection, the proposed research was anonymously reviewed by the University Research Ethics Committee, including two reviewers from Sheffield University Management School and one academic from elsewhere in the University.

Informed consent was obtained from all participants before they participated in either an interview or a survey. Participants were offered an information sheet informing them of the details of the study and the use of their data, and were then explicitly asked to offer their consent to participate. This information sheet was emailed to participants before the interview and was also provided in person

at the beginning of the interview. For the online survey, the information sheet was provided on the opening welcome page. All participants were under no obligation to take part, either from the researcher or their employer, and were free to withdraw at any point, without repercussion. Invitations to participate sent by employers were checked by the researcher to ensure that they stated that participation was voluntary.

Data obtained from participants was collected and stored anonymously, so that it cannot be linked with them as an individual. All data, recordings and material are stored on secure systems, treated as confidential by the researcher, and will be deleted once they are no longer needed. There was limited possibility for physical or psychological harm in the research, although participants were advised to speak with their line manager or HR department if they wanted to discuss their learning and development in more detail.

7 SUMMARY

A summary of how the research design fits the research questions is shown in Table 5.1. Further information on the exact methods used in each study is included in their respective chapters.

<table>
<tr><th>Research question</th><th>Strand / approach</th><th>Sample</th><th>Reference</th></tr>
<tr><td>1 Barriers</td><td rowspan="2">(1) Qualitative</td><td>EnergyCo x 21
EdChar x 10
TelCo x 800</td><td rowspan="2">Chapter 6</td></tr>
<tr><td>2 Roles others play</td><td>EnergyCo x 21
EdChar x 10</td></tr>
<tr><td>3 Personality antecedents</td><td rowspan="6">(2) Quantitative</td><td rowspan="6">TelCo x 1,811</td><td rowspan="6">Chapter 7</td></tr>
<tr><td>4 Situational antecedents</td></tr>
<tr><td>5 Relative importance of antecedents</td></tr>
<tr><td>6 Intention as a mediator</td></tr>
<tr><td>7 Group differences in participation</td></tr>
<tr><td>8 Group differences in predictors</td></tr>
</table>

Table 5.1: An overview of the strand, methodological approach and sample used to answer each research question, alongside a reference to further information.

6. Qualitative research

1 SUMMARY

In this chapter, the first of the two studies is considered: the qualitative exploration of barriers to, and the interpersonal supporters of, informal learning participation. Specifically, this first study is designed to answer two research questions:

RQ1: What barriers do employees perceive may hinder their informal learning?

One way to explore how organisations may support their employees' informal learning is by trying to identify the barriers that employees perceive to hinder their informal learning efforts. While there is some existing research that begins to identify such barriers, most studies have not explored them in the specific context of informal learning or tried to group these barriers in a meaningful way.

RQ2: What roles do other people play in supporting employees' informal learning?

Much of the existing literature focuses primarily on the line manager and the role that they play in supporting employees' informal learning and development. Yet, particularly with informal learning, there are a wide variety of other agents who can support learning, including colleagues, family and friends. Little is known about the roles that these sources of support play in aiding informal learning endeavours.

The chapter is broken down into two key sections: a consideration and justification of the methods used to collect and analyse the qualitative data; and then the presentation and discussion of the analysed data, separated out by research question.

2 METHODS

This section outlines the methods used in the second study, including information on the sample, and the data collection and analysis procedures.

2.1 DATA COLLECTION – FACE-TO-FACE

2.1.1 Sample

A total of 31 people participated in the qualitative study. Employees from two organisations participated in this study: 21 from a large UK energy firm, and 10 from a small UK educational charity.

Purposive sampling, the most common form of sampling in qualitative research, is one in which participants are purposely, rather than randomly, selected. This form of sampling "allows us to choose a case because it illustrates some feature or

process in which we are interested" (Silverman, 2010). Using Palys' (2008) categorisations, the sampling took a '*maximum variation sampling*' approach, in which individuals were chosen so as to cover a broad spectrum of positions and perspectives. Participants were chosen so as to represent a diversity of age, tenure, gender, disability, work area, ethnicity, family status, and educational level.

The participants were selected by the organisational contact person based on a series of criteria given to them by the researcher. These criteria were given so as to provide diversity, and further criteria were given as the interview process continued, based on emerging findings, so as to further diversify the sample.

As designed, the sample was diverse, with a mixture of genders (17 male; 14 female), ages ranging from 17 to 65, a mixture of ethnicities, and education level varying between participants coming straight from school post GCSE or O Level through to a participant having multiple masters degrees. Although specific questions were not asked about disability, religion or sexuality, three participants voluntarily mentioned some form of disability or health issue, and two mentioned their religious beliefs and community membership.

Job roles varied considerably, with energy firm participants in roles across professional services (e.g. HR, finance), sales (e.g. phone agents, sales floor managers), account managers, product development and marketing, engineering, IT, and technical solutions. Most participants at the educational charity worked in programme and project management roles, with areas such as business development, finance and operations, and office support also represented.

Organisational tenure ranged from 8 months to 26 years, with one participant one month away from retirement. Job tenure ranged between 5 months and 7 years. Management responsibility ranged from participants who had no management responsibility, through to participants who had management responsibility for a business directorate. Middle management at a number of levels was represented. There was also great diversity in participants' contract types: although mostly full-time workers, there were some who worked part-time; most were based in the office, although some worked out in the field, travelled around as part of their daily job, or worked from home. Some participants were in temporary positions, either on secondment or as part of an internship.

Outside of work, participants varied in terms of their family status: with a range of single, married and divorced participants, some with children or with elder care responsibilities.

2.1.2 Procedure

Data were collected face-to-face for all but two participants. Two participants worked on location, and so were interviewed over telephone. Interviews took place on company premises, with the researcher travelling to company offices.

Interviews lasted between 55 minutes and 3 hours, with the average interview lasting 85 minutes. Before the interview, participants were emailed an information sheet giving them information about the study, including the topic of

the discussion. This information sheet encouraged them to reflect on their informal learning before the interview.

2.1.3 Interview schedule

Semi-structured interviews were used, in which interviewees were all asked similar questions according to a guiding interview schedule. The semi-structured nature allows for easier comparability between individual cases, but also allows the interviewer to expand on questions in greater depth during the interview, and also provides a more natural and comfortable conversation with the interviewee.

The interview schedule is included in the appendix. The schedule was developed based on the research questions, with input given by peers and organisational contacts. Peers, professional contacts and organisational contacts were particularly important in developing the initial informal learning activity and support source prompt cards, which are discussed below. The schedule was piloted with an organisational contact, but also developed and adapted after the first day of interviews. The interview schedule included a number of follow-up and prompt questions that could be used to prompt answers or elicit further detail on any example. Interviews were recorded, with permission from the participant, and transcribed for analysis.

The interview opened with general questions asking about the participants' job role and job history. The interviewer and interviewee then shared their understanding of the term 'informal learning', with the interviewer providing a definition that would be used during the interview. This definition was also provided written-down on a laminated card and kept on the table throughout, so that it could be referred back to. Other cards were presented giving examples of informal learning activities, broken down into groups of 'learning by oneself', 'learning through others', 'learning through trial and error', 'learning through experiences' and 'learning through feedback'. Participants were asked to talk about their experiences of these activities, card-by-card, commenting on whether they participated in such activities, and discussing their experiences.

Questions were then asked about the factors that limit or hinder participation in these activities, and about the role that others play in supporting this informal learning. Again, prompt cards were used, giving prompts for each of the potential sources of support, e.g. 'line manager – current manager and previous managers', 'colleagues within my team', 'colleagues elsewhere in the business'. Participants were also encouraged to write their own cards if a support source was not mentioned. This activity then led into the repertory grid exercise.

2.1.4 Repertory grids

The last part of the interview included a repertory grid exercise. The repertory grid (Kelly, 1955) is an interviewing technique designed to elicit participants' own personal meanings of, and constructs relating to, a particular topic.

In this instance, participants were asked to choose 6-8 individuals who currently, or have in the past, supported or hindered their informal learning. These

individuals formed the 'elements' of the grid, and were those individuals who were compared in the exercise.

Participants were then offered the question of 'how do these individuals support or hinder your informal learning?'. The 'triads' method was employed, in which three 'elements' were selected by the researcher, and the participant was asked which of the 'elements' (learning network individual) was the 'odd one out' in how they supported or hindered informal learning. The participant was required to assess which two of the three 'elements' were similar, and which one was different from the other two. The participant was then guided to express these differences as a continuum, and describe the ends of either end of this continuum using a few of their own words. These continua are known as 'constructs'.

Not all of the participants completed the repertory grid, with only 17 of 21 from the energy firm, and 6 of 10 from the educational charity, taking part. Of these participants, 4 did not take part because we ran out of time, 2 did not take part as their interviews were conducted over the telephone, and 2 did not take part as they struggled with the repertory grid exercise.

When the research was initially designed, it was intended that the constructs that emerged from participants' grids would be analysed, using thematic grouping, to further explore differences in the roles that others played. However, the exercise did not work as intended and so this analysis was not carried out. The main reasons why the repertory grid exercise did not work as intended may include: the fact that participants chose their own elements, and so the elements were not common to all participants, making each participant's grid more difficult to compare; that a large number of constructs emerged from participants and trying to compare these constructs, each defined in the participants' own words, was too difficult a task, especially as there was limited overlap;; and in many cases, there was an added time pressure to the task, as the grid took place at the end of the interview and may sometimes have felt somewhat rushed.

While the repertory grid method was not used as intended, it remained a useful tool in data collection. The exercise allowed the topic of support and limits to informal learning to be explored in a different way to the rest of the interview, providing another method of collecting data and allowing triangulation during analysis. Most useful was the fact that discussions were grounded and anchored in real people, those who had been chosen as the elements of the repertory grid. The conversations that took place during the repertory grid exercise were treated in the same way as the main semi-structured interview, in that they were transcribed, coded and analysed.

2.2 DATA COLLECTION – SURVEY

In answering Research Question 1, an open-ended question was included in a separate survey of 900 participants. The question asked "What, if anything, hinders your ability to participate in informal learning activities?", and respondents were given a large textbox in which they could type an answer. The question was placed at the end of the survey so that participants had previously

had the chance to reflect on their informal learning participation, which was measured quantitatively earlier in the survey.

Participants were from a large, multinational telecoms firm, and worked in a variety of job roles, from contact centre agents and sales, to HR consultants and project management, and from field engineers to network technicians.

Detailed information on the survey is included in Chapter 7.

2.3 DATA ANALYSIS

Data were analysed using thematic analysis, a form of content analysis, in which participants' responses are broken down into a series of units, and are then coded and organised into overarching themes. It is these themes that form the basis for answering the research questions, providing a framework to compare with existing research findings and for organisations to use the study's findings in practice.

The research follows a similar process to that suggested by Marshall and Rossman (1999), who divide thematic analysis into six phases: organising the data, generating categories or themes, coding the data, testing emergent understandings of the data, searching for alternative explanations of the data, and writing-up the data analysis.

Braun and Clarke (2006) outline three decisions that need to be made before beginning thematic analysis. The first is whether the aim is for a rich description of the data set, or a detailed account of one particular aspect. In this analysis, the aim was to identify as many barriers (themes) as possible, with a particular focus on providing a rich description that explores the nuances of exactly how these barriers may influence informal learning participation.

The second decision is whether the thematic analysis will be inductive or theoretical. Given the dissatisfaction with current categorisations, the analysis involved inductive elements, although analyses were undoubtedly influenced and guided by the findings of previous studies as explored in the literature review. It would be naïve to think that themes purely emerge out of the data and are not influenced by the researcher's prior understanding and exposure to existing work. As such, the thematic analysis could be said to involve a 'hybrid' approach, incorporating both inductive and deductive elements. Both data collection and analysis used inductive approaches as the primary mode of engagement, using open-ended questions to begin with, and coding data initially using the participants' own words. However, a more deductive approach was used later in the interview schedule, to prompt responses and stimulate discussion, as well as in data analysis, with previous knowledge used in grouping and clustering codes in themes, checking and making sense of codes, and at the stage of theme review.

The third decision is concerned with whether the themes are semantic or latent. When deciding on the names or titles for themes, researchers can choose whether to name these themes based on the participants' own words (semantic), or choose to title the themes based on their interpretation (latent). Latent themes are particularly helpful as they can be used to group together examples that

describe similar concepts using different terminology. While the initial codes in this study were semantic, guided by the participants' own words, the eventual themes and patterns identified in the data are based on latent overarching concepts so as to provide meaningful interpretations of the data that may be used to inform both theory and practice.

2.3.1 Initial coding and reduction of interview data

Interviews, totalling approximately 33 hours, were transcribed, with any sensitive or identifying information removed so as to retain the anonymity of participants. Once transcribed, the accuracy of each transcription was checked against the original audio recording. Transcripts totalled 291,723 words, and each transcript was read over in full to provide the opportunity to familiarise with the data.

For the initial coding, five interviews were selected: three from the energy business, and two from the educational charity. For each of these transcripts, participants' responses that were relevant to the research questions were coded. Units of sentences, or sentence clauses in the case of particularly lengthy sentences, were classified as to which research question they answered, and were then coded 'in vivo' using the words used, or similar to those used, by the participant. As patterns were recognised throughout the coding exercise, these initial codes were organised into latent categories, with categorisations informed by existing theory and literature.

NVivo 10 was used to assist in the coding and categorisation of the data. NVivo is a computer package designed to assist in the organisation of qualitative analysis, allowing data sources such as interview transcripts and survey responses to be coded. The computer software allows these codes to compared, contrasted and edited, and grouped into hierarchical 'tree' structures. This organisation and grouping allows for alternative thematic groupings of the data to be readily explored, and for examples to be easily found during the writing-up stage.

2.3.2 Generating themes and organising interview data

Initial themes were generated based on the initial codes from the first five interviews, and these themes were discussed with peers, with coding criteria and distinctions challenged and debated. Similar themes were grouped together in a hierarchical nature. For research question one, similar barriers were initially divided into 'intrinsic' and 'extrinsic' categories, whereas, for research question two, codes surrounding the ways in which others support learning were categorised by support source. The remaining interviews were then coded into this tentative framework.

Categories were chosen so as to be internally consistent and externally divergent (Marshall & Rossman, 1999), meaning that the examples within a single category were of the same concept, and that examples in different categories were distinct from one another. In some instances, some examples illustrated more than one category, and so were coded into multiple categories.

As the remaining interviews were coded, the coding framework and analysis was updated and revised as new categories and concepts emerged. As stated by Braun

and Clarke (2006), “analysis involves a constant moving back and forward between the entire data set, the coded extracts of data that you are analysing, and the analysis of the data that you are producing”. This constant comparison involved recoding and rethinking analyses of previous interviews, refining the categories and themes throughout the coding process. The developing understanding of the data was placed in the context of existing work and literature, as well as being anchored in the current data.

As suggested by Marshall and Rossman (1999), the emergent understanding was regularly challenged and negative instances were sought from the data to undermine this understanding. Alternative explanations and groupings were explored so as to find the best way to describe the data in the context of the research questions.

2.3.2.1 Template development

For the thematic organisation of barriers, the initial codes were grouped into ‘intrinsic’ and ‘extrinsic’ barriers to informal learning. This grouping was informed in two ways: firstly, by the common psychological understanding that behaviours are influenced by an interaction of personality and situation, as also evidenced in Chapter 4; and secondly, the existing work of Lohman (2000, 2005) and Stuart (1984), who also split learning barriers into extrinsic, or environment, and intrinsic, or personal, factors. Semantically, the terms ‘learning environment’ and ‘personal factors’ were chosen to describe the two categories in this research, in order that the framework be more readily accessible to the layperson.

This initial framework held well, and so there were few template adjustments at the highest level; although following the sheer frequency with which time and work demands were reported as barriers, the decision was taken to separate this out as its own barrier category: firstly, so that its prominence was represented; secondly, so that it did not overshadow other barriers in a subcategory; and thirdly, as it combined a mixture of extrinsic and intrinsic elements.

Although Crouse (2011) offered a framework that could be utilised, as discussed in Chapter 3, there is insufficient rich description of these themes, and there are a number of overlapping themes, making the framework difficult to adapt and utilise when grouping codes.

The template development for research question two was more complex, and at least three competing templates were developed to try and best represent the data. The first of these, presented later, groups support roles by support type, highlighting particularly specialist features of support groups that are not roles per se. The second template attempted to group the roles others played into House’s (1981) categorisation of emotional, instrumental, informational, and appraisal support. However, a number of support roles did not neatly fit into any of these categories, and in some cases, it was hard to definitively place particularly roles into just one of these groups. The third template was based on Kirwan’s (2013) categorisation of line managers’ behaviours: providing clarity, getting the work done, managing performance, and learning and motivation. This categorisation was particularly appealing, and was well suited to organising many of the roles observed in the data. However, this categorisation, for many support

sources, typically overcomplicated the template, particularly for less work-central support sources such as friends or family. On the whole, each support source appeared to offer a relatively unique set of support roles and behaviours, and it was felt this was best represented by discussing and presenting each role separately in the final framework.

2.3.3 Coding and analysis of survey data

Coding of the survey responses was conducted in a similar way to that of the interview data, with the initial coding of all 679 responses, the generation of themes, and then the recoding of responses as these themes were developed, challenged and explored. The survey data analysis was initially conducted separately to the analysis of the interviews, despite both being used to answer the same research question. After a thematic framework was developed independently for the interviews and survey, these frameworks were compared and combined. At the point at which the survey data was analysed, it was possible to categorise survey data into broad 'extrinsic' and 'intrinsic' factors in a similar way to the interview data. The survey data highlighted several new barriers that were not identified in interviews, such as learning difficulties and health issues. The identification of new barriers allowed for existing thematic templates to be challenged and developed, although the fundamental distinction of 'intrinsic' and 'extrinsic' factors remained.

The survey data, in particular, led to the separation of 'time and work demands' as a theme separate to the broader 'intrinsic' and 'extrinsic' factors. This was because of the sheer size of the sample allowing time and work demands to be identified as particularly common barrier, deserving of separate consideration to all others. This decision is discussed further in the discussion of themes.

2.4 Assessing the 'trustworthiness' of qualitative research

A number of frameworks have been created to assist in evaluating the quality of qualitative work, such as those by Creswell (1998), Lincoln and Guba (1985) and Malterud (2001). Many of these frameworks are similar in what they cover, but Miles and Huberman's (1994) framework is used here as it is one of the more exhaustive and comprehensive frameworks compared to others. Miles and Huberman (1994) state five evaluative criteria for determining the trustworthiness of qualitative conclusions, which are considered in turn.

The first criterion is that of *objectivity and confirmability*, concerned with the neutrality of the research and how the researcher's biases affect conclusions. To assist in this regard, a detailed description of methods and procedures is offered, allowing others to follow the sequence of how data were collected and analysed as part of an audit trail. As an attempt to be explicit about inevitable bias, a reflective statement is provided in the appendix. Discussing the project with critical colleagues has also offered the opportunity to develop awareness of, and challenge any possible ways in which, researcher bias, motivation or interest could affect the conclusions drawn.

The second criterion of *reliability, dependability and auditability* reflects the extent to which the study is consistent and stable across time, researchers and methods. To enhance this reliability, the study design includes a number of participants from multiple organisations and triangulates across a mixture of methods, using semi-structured interviews, the repertory grid, and an open-ended question on a survey. At the analysis stage, although the coding was primarily done by the researcher, initial code structures were checked and discussed with others, and peer debriefing was used to challenge codes and themes. For audit purposes, the study has clear research questions to guide data collection and analysis, and decisions that were made during the analysis process are included as part of the discussion of findings.

The next criterion, *internal validity, credibility and authenticity* covers the extent to which the findings are 'truthful', or using terminology more appropriate to qualitative work, 'credible' to the people studied and to members of the research community. Descriptions are provided that are context-rich so as to allow others to understand the context in which the findings exist. Triangulation across methods and data sources provides converging and similar findings. For external audit, the research and its conclusions have been presented at an international conference, discussed with other scholars and peers, and presented back to practitioners in the organisations studied. All of these sources have raised no concerns surrounding the credibility of the conclusions drawn.

External validity, transferability and fittingness assesses the extent to which the study's conclusions have the potential for a larger impact and may be transferable to other contexts. In the description of the study, the characteristics of the samples are provided in detail, and a critical discussion is provided in later chapters surrounding the potential for generalisability of the findings and how the findings could be tested further. The findings generally support existing theory and prior studies, complementing and expanding on existing research rather than contradicting any existing knowledge.

The final criterion is that of *utilisation, application and action orientation.* This criterion is focused on the pragmatic value of the research and the impact it may have for potential users. The findings are both intellectually and physically accessible, do not use jargon, are illustrated with quotes and examples, and will be published in an open access repository (White Rose eTheses online). The findings have also been presented to participating organisations, along with some practical guidance for future action.

On the whole, while the qualitative research is designed in such a way that it can be seen as 'trustworthy', care is also taken so that no elaborate claims are made that overgeneralise its findings. The barriers observed are acknowledged as being specific to the sample and context, and are inevitably connected with both the researcher's viewpoint and the findings of previous studies as have been explored earlier. Indeed, there may be alternative explanations of the data. The qualitative work and its analysis, however, allows us to expand, broaden and deepen our current understanding, exploring ideas in new contexts and with a novel viewpoint, suggesting new ideas and avenues for theory. In practice, it is unlikely that there is a 'one size fits all' in terms of one's learning, but this new exploration

allows for current ideas to be challenged, and for individuals to question their own barriers and develop greater self-awareness of their informal learning.

2.5 Defining Informal Learning

As outlined earlier, the interview schedule included the opportunity for participant and interviewer to discuss the participant's prior understanding of "informal learning" and how this may have differed to that adopted in this study.

Every single participant, across both organisations, offered a definition of informal learning consistent with the researcher's definition, even before the concept was explored in greater detail. That said, a number of participants initially responded saying they 'didn't know', before then giving a correct description of what they thought the term may mean.

Almost all participants primarily defined informal learning by saying what it wasn't: in many cases, it not being in a classroom or as part of a training course. Other common responses included the self-motivated and self-directed aspects of informal learning, the unstructured nature of learning, and the fact that it often takes place on-the-job or alongside daily work.

Before discussing particular types of learning, many participants gave examples of how they regularly interact with colleagues and Google, and how they felt these were examples of their informal learning.

3 Findings: Introduction

In this section, the two research questions are considered in turn. The thematic groups identified are presented, and are supported by evidence from the data and are discussed in relation to the existing literature. The consideration of each research question is concluded by a summary that brings together the themes in a framework, discussing how that framework was formed, and the contribution that this framework and new data offer in terms of existing theory and practical understanding.

4 Findings: Barriers to Informal Learning

Given the self-directed nature of informal learning, the onus is primarily on individuals to initiate and drive their learning. One way to support individuals, therefore, is by helping to remove any barriers that they may perceive to hinder their informal learning. As discussed in Chapter 3, there have been a number of efforts to identify some of the barriers to workplace learning, but few studies have looked specifically at informal learning. Existing attempts are in their infancy, calling for greater exploration in new samples and contexts to develop both a broader and deeper understanding of the topic.

The use of a mixture of methods to answer this research question holds real benefit in exploring the topic in both breadth and depth. The interviews provide richer data that go into more depth and unpick some of the nuances of the

themes. Much of these rich data would not be obtained through the open-ended survey question. The interviews also allow the chance to probe for more information and to encourage interviewees to recount personal experiences. The open-ended survey questions, on the other hand, provide the opportunity to explore the frequency of barriers and make some initial assessments as to how common different barriers may be in relation to each other. The larger sample size of the survey also means that some of the more rarely experienced barriers, such as learning difficulties, are discovered. These barriers may not have come out in the smaller number of interviews. To distinguish between quotations from interview and survey respondents, quotations are labelled accordingly: interview participants with "(I)" and survey participants with "(S)".

Barriers have been grouped into three categories: time and workload; personal factors; and the learning environment. Each of these groups is described in turn, alongside the individual barriers that make up these groups. These descriptions are illustrated and analysed by a series of quotes from both interviewees and survey responses. A summary of the three groups is provided at the end, outlining how the three categories interrelate and how they were developed and formed during the analysis process.

4.1 THERE ARE NO LIMITS

Before discussing the barriers that may limit informal learning, it is worth drawing attention to the fact that a significant number of participants expressed the opinion that they are not hindered by any barriers. Of the 671 survey responses, 99 gave a response indicating that they perceived no barriers, giving answers such as "None!" or "Nothing limits my learning".

For example, one of the more positive survey responses stated:

> "Nothing limits informal learning for me. Every day is a school day!" (S)

Another response gave greater detail, reflecting on how informal learning isn't hindered if an individual is resilient and makes the most of opportunities:

> "Nothing. There is always an opportunity to review how you have interacted with other people, and your / their responses and actions. The critical aspect is to keep trying." (S)

Similarly, this personal agency came through in other responses, such as in suggesting that individuals with motivation and self-drive can overcome obstacles to learning:

> "I think nothing can limit a person to learn if he/she really has an urge." (S)

The open-ended question in the survey was shown to around 900 respondents, and only 671 offered a response. There may be many reasons why participants

chose not to respond – such as the fact that it was at the end of the survey, and so they were tired, bored, or they didn't have time to write a response they would be happy with. It may also be the fact that they did not feel there were any barriers to their informal learning.

The fact that a fair number of people said there no limits is very important to remember. In the consideration of barriers here-on, it is not to say that every individual experiences all of these barriers, or even the same barriers in the same way.

4.2 TIME AND WORKLOAD

Barriers relating to time and workload were by far the most frequently reported. 45 (7%) respondents to the open-ended survey gave *just* "time" as their answer, and 381 responses (57%) included a reason relating to time. Similarly, 49 (7%) of those who responded to the open-ended question explicitly mentioned "workload" or "volume of work", with 13 (2%) just responding "workload". Given the sheer frequency with which 'time' or 'workload' is cited as a barrier, these issues are discussed as a category in isolation from any other extrinsic factors that may hinder informal learning. The high frequency with which this barrier was discussed matches earlier studies (e.g. Doyle & Young, 2003). Although 'time' and 'workload' could be seen as separate barriers, the way in which interviewees speak of these issues suggests that the two are linked, with high workloads creating less time for participation in informal learning activities.

Time is a limited resource, and in an interview, one participant spoke about how time creates a "balancing act" between competing demands:

> "I don't know if it's a cop-out and I think a lot of people probably will say it, but there is a time element. And I think it's a balancing act especially where we've had some really quite structured stuff. I know that there's been x days in my calendar in the last month that I haven't been able to do the job that I'm doing a lot of the time. So I think it feels a lot like if I was to do it, I would need to find time to do it outside of work" (I)

This account draws upon a couple of key points that were seen throughout the interviews and survey responses: firstly, the fact that a lack of time is sometimes seen as a "copout" or excuse; and secondly, the fact that limited time at work often means that employees have to find time outside work to engage in informal learning. Both of these issues will be discussed in further detail.

One of those competing demands is that of the 'day job' and its workload, with high workloads leaving little time for other activities, as one of the survey respondents expressed:

> "The workload often doesn't allow us to get away from the laptop for a lunch break or will be eating lunch whilst on the road. If I get time for learning I tend to take that to catch up activities with the

> children or catch up on household chores. Even my own hobbies have fallen by the wayside" (S)

This time pressure and heavy workload can be influenced by the culture of the organisation:

> "Yeah. I mean it's run, and run hard. That's the environment. It is a bit JFDI, just fucking do it. … It's just the sheer volume of work that we do as an organisation, and the breadth of work that we do. So I think that…I would say time is the biggest governing factor." (I)

Another interviewee in the same organisation also spoke about how the organisation's culture affected the time pressure:

> "I think I'd struggle if I worked with them down south because it's a bit of a workaholic attitude ... I think you have to really kind of say to yourself, 'it's okay to take time out'" (I)

While time and workload are commonly perceived barriers to learning, there are some nuances in how these factors affect informal learning participation.

4.2.1 Other things take priority over informal learning

As mentioned, limited time means that competing demands have to be prioritised. It was clear in many responses that participation in informal learning activities tended to be prioritised below many other activities, such as day-to-day work or family commitments. As one of the survey respondents describes:

> "Work is more important than learning - that's the mindset. When you have a lot to do then learning takes a backseat." (S)

Even when informal learning activities are scheduled, these can sometimes be pushed aside, as one respondent recounts:

> "Also, if something crops up that demands my attention informal learning will be put on the back burner - only last week I "rescheduled" 4 hours of learning" (S)

This priority was particularly seen to be the case for those in customer facing roles, whether that be external or internal customers, with "customers and service issues always [taking] priority over learning".

> "if trying to conduct informal learning during work hours there is always a call or a request that seems to take precedence." (S)

Similarly, work targets made it difficult to prioritise learning, a problem mentioned particularly by contact centre workers.

> "Pressure from the day job means that this always gets priority. Hard to schedule time away when the customer and targets or deadlines always come first. I seem to always put everyone else first." (S)

This was also discussed in the interviews:

> "What I'd like to be able to do is build informal learning into my working day and I think I struggle to do that. … If you get an email saying, 'I need you to pull this out and I need it 'cause I've got a customer in this afternoon', clearly, you can't say, 'Well, I'm working on my PDP'." (I)

This participant also hints at a couple of other themes that are discussed later: the need for scheduling time for informal learning, and the need for self-discipline in creating time for personal development.

Time was highlighted by a few participants as being a particular problem in areas of the business that were undergoing change, or that were growing or were more unstable. As one interviewee also recounts:

> "[informal learning is] the first thing to get bumped when project commitments come. ... We're not in a stable bit of the business. It's sort of a long established process of change. ... We've been one of the fastest growing bits of [the organisation] over the last wee while and, as a result, there is a lot of change and everyone's kinda having to react a certain amount." (I)

All in all, 'time demands' appears to be an over-simplification of the issue at hand. Rather than considering such setbacks to be an issue of time, it is more important to be aware of how other activities are prioritised above learning.

4.2.2 The need for scheduled time for learning

Several participants recalled how it was helpful to schedule time that is dedicated to informal learning, whether that be scheduled by them or by their manager or employer.

In explaining how scheduled time aids participation, many drew parallels with formal learning. For example, one respondent explains how it is easier to stick to scheduled learning:

> "other items are normally pushed up the priority list. Face to face learning is scheduled and you are therefore far more likely to stick to it." (S)

Going into greater detail, one interviewee explained how formal training is easier to "ring-fence" given that you've made time for it:

> "if you're going on a training course, it's happening there and then and you've got to go, you've made time for it, you've booked on it, you've probably paid some money and so therefore that time is ring fenced to do some training. That is more challenging when it's self-directed because if you're busy and swamped with other things and work then that won't happen, that will usually be the thing to fall off the bottom" (I)

This need for scheduling time may be unique for informal learning. While other studies have looked at workplace learning in general, the need for protected or "ring-fenced" time is not something that may hold one back with formal learning, as that time is already 'protected' and allocated.

Scheduled time dedicated to informal learning was necessary for a number of reasons, including the freedom from day-to-day work, from people management, and from in-bound calls. Several participants had no autonomy over their schedules, and so it was necessary for their organisation or manager to block out time dedicated to learning. As one respondent states:

> "day to day work and people management fills my whole day, so unless scheduled training time is provided I just don't have any spare time." (S)

As another respondent states, they are "not given time off from 'work'" and "just told to fit in when you can". As before, the fact that no dedicated time for learning is offered means that work will tend to take priority, and there will be no opportunity to 'fit in in when you can'.

One survey respondent mentioned the importance of ***'continuous' time***. Some types of learning may require in-depth concentration in order to process and reflect on particularly difficult concepts. "Snatching" time here and there may not be effective for learning, and so there may be the need for prolonged lengths of time.

> "Time to make it continuous. It is usually time that is snatched and you may have to revisit if there is long time in between the self-directed learning" (S)

When scheduling time for informal learning, a number of specific difficulties were mentioned: workloads being hard to predict, nobody covering work when time is rescheduled for informal learning, and the fact that work targets still have to be met.

Several participants mentioned that their variable workloads made it hard to schedule learning, and all of these respondents mentioned that they work in 'real time operations' or 'operational' roles, which have variable workloads. One respondent describes:

> "Being in an operational role, informal learning tends to be hard to fit in as workloads vary day by day and minute by minute." (S)

No respondent goes into any depth about how this unpredictable workload affects learning. However, it may be that a variable and unpredictable workload makes it difficult to plan ahead, arrange a diary and schedule dedicated time for informal learning.

For some, the problem with scheduling time for learning was because of "the day job running in the background with no cover". When the day-job was running in the background, it may be difficult to focus, as one respondent describes:

> "Ability to put job on hold and separate learning as a different activity which I can fully focus on." (S)

This issue may be exacerbated where there is nobody there to cover work, meaning that if time is taken out for learning, there will still be work to catch-up on. One respondent explains:

> "Setting aside time for learning activities is almost impossible. Work schedules often disrupt learning and development activities and time set aside is very often postponed or cancelled. No one covers my work during learning/development activities meaning it can be hard to concentrate on the activities and I dread returning to a pile of call-backs and escalations." (S)

Another issue in scheduling time was with meeting targets, an issue almost exclusively reported by contact centre workers. When away from the phones or not taking calls, there are still targets to meet, as one respondent mentions:

> "Getting time away from my job to complete [learning] with being on Inbound team, plus it can be stressful being off line with having targets to achieve." (S)

Failing to meet these targets may have consequences, which one respondent refers to in their survey response:

> "If I spend time informally, I either have to do it on my own time or damage utilisation, imperilling performance scores" (S)

This respondent alludes to the fact that there is a trade-off between meeting targets and engaging in informal learning. Given that performance-related pay, job security, or promotions may be based on successful achievement of targets, it is not surprising that targets are an important barrier to informal learning.

This need for scheduling time for learning, necessary because of the conflict between work and learning, has rarely been discussed in the literature. This is most likely due to the fact that existing work has tended to focus on formal learning, in which time for learning is also scheduled and protected.

4.2.3 Contract types

Another issue relating to time and workload is that of differing contract types. Three survey responses mentioned the fact that part-time contracts limited the time available for informal learning. One respondent goes into more detail:

> "Being part-time (50% FTE) means that I only have half of the wiggle room that full timers have. This makes it difficult to find time for learning which, unlike my workstack, are the same length of time no matter whether you are part-time or full-time. A simple example - a 2-day course is 40% of a full-timers week, but 80% of mine - and it can be hard to free up such a high percentage of my time." (S)

While they offer an example that is perhaps more relevant to formal learning than informal learning ("a 2-day course"), it does illustrate the point rather well. Whereas part-time employees will have their workload adjusted according to their contract, the effort required to learn a new skill or piece of knowledge will tend to be invariable, and require the same level of investment regardless of contract type. With part-time workers, difficulties in finding time for informal learning are likely to amplified above those difficulties for those in full-time roles.

4.2.4 Factors outside work

For informal learning, a number of factors outside work, such as family and childcare commitments, household management, and hobbies and leisure activities hindered participation in informal learning.

A number of respondents and interviewees described how a lack of time, or distraction-free time, meant that they had to participate in informal learning outside of work. For some, the merger of interests and work role means that there is an inevitable cross-over between work and outside work. One interviewee describes:

> "I think I do a lot of the extra stuff because I want to do it and because I find it interesting. So a lot of this is not done in work time necessarily, but I don't really mind that because I don't, whilst I obviously consider that you have to have a work life balance, I think that a lot of the work is stuff that I enjoy doing as sort of I suppose voluntarily or is part of my interests, so kind of some of that merges." (I)

While this participant is happy for the boundaries between work and home to be relatively permeable, others spoke of the desire to maintain a boundary and work-life balance. For example, one respondent describes how they feel less inclined to participate in informal learning outside work as it "chomps" into their personal time.

> "So I think it feels a lot like if I was to do it, I would need to find time to do it outside of work. And especially when sometimes the

> boundaries of work blur a little bit and you're either leaving early in the morning to get somewhere, working a bit late, getting back a bit late. I'm probably less inclined to do it because I kind of already feel like work's sort of chomping into my personal time a bit." (I)

Family and childcare responsibilities require extra time and energy outside work, leaving less time for informal learning. As one respondent explains in detail:

> "Informal learning is not easy for me due to time constraints. It's not so much that work takes up more time than it should, its more that as a single mother to 3 children, my time outside of work is very limited also - as I have to fit the household chore into evenings / weekends & I'm therefore too tired to do anything else!" (I)

Similarly, there is also the trade-off between time spent learning and time spent with others outside work, as another respondent explains:

> "Trying to conduct the learning outside of work hours eats into time that you want to spend with family or partner" (S)

Similarly, there are other activities outside work that compete for time, such as community groups and sport clubs, as one respondent details:

> "I am sometimes overcommitted to different things, Community Groups, sports clubs, which in itself adds stress." (S)

As discussed during the literature reviews, very little previous research has considered the potential importance of commitments and responsibilities outside work, in terms of how they may influence informal learning participation.

Not one of the frameworks discussed in the earlier literature review have considered the roles that those outside work play, and how they may compete for time and attention of the learner.

4.2.5 Time management

So far, many of the ways in which time and workload affect informal learning have been extrinsic factors. However, it may also be that individuals differ in their ability to manage their time effectively. Individual differences in 'time management' were mentioned by 10 participants in the survey responses. As one survey participant describes:

> "it's about time management, prioritising the learning against work activities, then sticking to the plan!" (S)

Another survey participant also highlights the importance of time management, and how this involves planning learning engagement alongside other commitments.

> "Management of work and personal commitments [are barriers to informal learning] but are easily resolved with forward planning." (S)

As such, although a lack of time and a high workload have been identified in both this dataset and the existing literature as two of the most significant barriers to learning, individuals may differ in the ability to which they are able to manage their time and prioritise learning against work or home demands, or schedule in dedicated time for learning activities. Indeed, the fact that there was a healthy proportion of people who felt that nothing limited their ability to participate in learning means that time is not a factor that limits everybody. Given that most employees are likely to face busy work schedules, it is likely that many of these individuals are simply better able to manage their time than others.

4.3 PERSONAL FACTORS

The second category focuses on personal factors, those factors that are intrinsic to individuals. These factors include individual barriers such as a lack of concentration, self-discipline, motivation, energy, confidence and self-drive, and learning difficulties or health issues. While many of these concepts may be inter-related and partly overlapping, they do have distinct definitions and, as participants chose to use such terms to describe their personal barriers to informal learning, these distinctions were respected when separating factors into thematic groups.

4.3.1 Lack of motivation to learn

Motivation was a frequently reported personal barrier to informal learning, with 27 survey respondents specifically referring to the issue of motivation. For some, there was no motivation or desire to learn or develop.

There were examples of where this lack of motivation to learn stemmed from the employee's job:

> "If you're not loving your job and if it is just a job, then somehow, therefore, your motivation to almost learn to improve as part of that job isn't always there … Following through my development plan, where I'm like, 'Am I gonna be here in that period of time. I'm gonna be doing this wrong and, therefore, working towards that learning goal.'" (I)

Motivation was also lacking where individuals believed they had reached their peak, learning everything they needed for their current role:

> "you go through a curve where you start and you ramp up all that learning, and I think towards the end it felt limited because I took it to a point where I learned most things that I could possibly learn" (I)

This was also seen more broadly, where one interviewee, at the end of her career, had no motivation to learn now that she had developed the skills necessary for her current role:

> "I am towards the end of my career now, so I've picked up a lot. So most of the skills that I'm now using in terms of written communication skills, things like that, talking to head teachers and other teachers over the phone, using the Dictaphone or whatever, I've done a lot of that over my time." (I)

For others, they referred more to the issue of failure to self-motivate, and the need for external prompts to learn, such as a time pressure:

> "Lack of motivation to train for things which I don't need urgently." (S)

Motivation from being around others in a face-to-face interaction was cited as important, and could act a prompt for informal learning:

> "Motivation without face to face interaction is low, self-directed learning tends not to be practical so I find it harder to absorb" (S)

If relying on such a prompt, it may be that finding this motivation may be more difficult for those in environments away from other people:

> "sometimes I struggle with my ability to be motivated when left to work from home for example." (S)

'Motivation to learn' is a recognised concept in the existing development literature (e.g. Noe and Wilk, 1993), previously featuring in models such as that by Major and colleagues (2006), in which motivation to learn acts as a mediator between proactive personality and development activity participation. As evidenced in the quotations presented, there are different reasons why motivation may be lacking, including poor job satisfaction, long job tenure, a lack of external pressure, and a lack of learning-supportive social norms.

4.3.2 Lack of energy

Lack of energy was frequently mentioned as a barrier to learning, with a lack of energy meaning that individuals did not participate in learning, or chose to take an easier option, as one respondent expresses:

> "Having sufficient mental energy to engage in learning rather than taking an easier option." (S)

This lack of energy was frequently linked to one's heavy workload, with individuals being too tired at the end of the work day:

> "I am generally too tired by the time I have finished work and need to just do nothing for a couple of hours. I am doing an online course at the moment but have not made as much progress as I would have expected to." (S)

4.3.3 Lack of drive, direction and proactivity

Some individuals lacked a 'drive' to engage in learning activities, or did not have a drive in any consistent direction. Particularly seen in interviewees, whilst they had the motivation to learn and wanted to learn, they struggled to start or continue their engagement in learning activities. One participant described this as "laziness":

> "Laziness, if I'm totally honest cause. I was gonna say time but that's not true and the reason why I think it's laziness, for want of a better word, is that I have one friend … She works full-time, she travels every single day, she's written a book, she's done a Law Degree and she works out five times a week." (I)

Another participant recognises the necessity of driving one's own learning, especially to progress in their career and make the most of the opportunities and resources available:

> "I think previously I've expected people to help develop me, I've realised, actually, that it's me that needs to drive my own development. Anything that I've asked to be able to do I've been allowed to do. It's like I had an epiphany. Towards the end of last year, I thought, 'I've been here for six and a half years, there are other people who have been here a lot less who have been promoted, and have gone out and, sort of, sought out the opportunities that they wanted'. I think I suddenly just realised that it was about time I did the same." (I)

In one case, this lack of drive meant that one respondent placed her trust in her manager to drive her learning. Unfortunately, this did not lead to learning opportunities for her:

> "I think [my manager] did hold me back a little bit as well because I trusted her so much I didn't question what she said to me … what that meant was that I kind of waited for a whole year for an opportunity … I really trusted her and it never did and it took me a whole year to say, 'I think actually you've got to take ownership and control things and you create your own opportunities so you need to crack on and find another one, because it might happen here but it's gonna take a really long time'." (I)

Part of this lack of drive may result, for some, from having a lack of direction and a lack of clear goals:

> "with me, it's not necessarily being clear on which direction I wanna go in. I sometimes start something and think, "Actually, I wanna go and do this instead." So it's just starting and stopping." (I)

This lack of clarity over the direction in which one wants to head means that learning may be somewhat interrupted, moving in many different directions. One interviewee shares a similar experience:

> "a large part must be down to not being clear around my goals and, therefore, because I'm not like, "That's the wrong heading. That's the wrong heading", then if I'm distracted by another project, I've not got that as my compass signal to take me back. "I've gotta do some more of this" because, actually, I'm just doing another project. I'm just doing another piece." (I)

Sometimes, this lack of drive may simply be because it is easy to lose sight of the benefit that informal learning can bring, as an interviewee recounts:

> "it's kind of clearing my head space to realise that it will give you a certain amount of benefit, and maybe even just going back and looking at my PDP again and saying, actually these are the bits that I've done. But these are the bits that if I'm honest, I haven't looked at it in the last three months." (I)

Many of the quotations presented elicit ideas of 'proactive personality' (Bateman & Crant, 1993), defined as the tendency to identify opportunities, show initiative, take action and to persevere to bring about change. In many of the examples presented, participants believe they have the motivation, but seem to naturally lack the ability to take personal responsibility and action for their own learning participation, and then persevere in this participation. Proactive Personality has previously been found to be a significant predictor of participation in development activities (Major et al., 2006).

4.3.4 Poor concentration and attention span

A number of respondents indicated that they were easily distracted or have a "short attention span", and that this lack of concentration affects their learning. They may have "lots of enthusiasm at the start but fail in getting motivated to the end.". As one respondent wonderfully states:

> "I am easily distracted. For example, by random questionnaires in my inbox..." (S)

This lack of concentration links to other barriers to informal learning, such as working in a distracting learning environment, or learning difficulties. It may be, for example, that those who have a lack of concentration and are also working in a distracting learning environment are particularly limited in their ability to

participate in informal learning. Such barriers may not manifest for those with a high level of concentration, regardless of their environment.

4.3.5 Poor self-discipline or low conscientiousness

Related to individuals' ability to concentrate is their self-discipline, the extent to which individuals exercise control over themselves. This was particularly seen in relation to creating time for informal learning, removing oneself from the day-to-day work or putting in the additional effort. Participants reported that this required them to exercise self-discipline.

Many of the responses in which self-discipline were referenced also relate to other barriers, and how it is necessary to exercise self-discipline over these barriers. For example, one participant describes himself as a barrier to his learning, saying he needs to be disciplined in not getting distracted and in engaging in informal learning:

> "I'd say myself. I just get distracted. So I don't think that I'm as disciplined with myself in understanding that I need to be selfish sometimes to do that informal learning to develop myself." (I)

Related to the earlier idea of energy and effort, one respondent outlines how they need to be disciplined in order to exert the effort to read around:

> "having the discipline to read around the various subjects that I am interested in. My work is directly related to new technology so trying to keep up to date with emerging technology requires a lot of effort." (S)

Another participant refers to the importance of detaching oneself from a distracting work environment, a barrier that will be discussed later:

> "You have to be disciplined if you are going to learn at your desk. Switch off the email and the phone and just focus on the learning, otherwise the tendency is to get on with the day to day job." (S)

The idea of 'self-discipline' could be seen as somewhat similar to the Big Five trait of Conscientiousness (Barrick & Mount, 1991), which represents traits such as being responsible, organised, hardworking, achievement-oriented and persevering. Conscientiousness has regularly been found in the previous literature to be one of the more relevant Big Five traits in participating training and development participation (e.g. Blume et al., 2010; Major et al., 2006).

4.3.6 Lack of confidence or self-efficacy

Confidence was mentioned in several responses, although few went into great depth about how exactly this hindered their informal learning. This confidence could relate to one's belief in many aspects: their ability to successfully engage in learning, to be safe in putting themselves out of their comfort zone, or safe in putting themselves in a vulnerable position. Confidence has also been observed

previously in the literature as self-efficacy (Bandura, 1986), which has found to be one of the more important predictors of learning participation (Maurer at al., 2003; Noe et al., 2013). Studies have also shown that those with prior positive learning experiences engage in more development activity (Hurtz & Williams, 2009; Maurer et al., 2003), a relationship perhaps mediated by the individual's confidence to participate in learning.

One survey respondent commented on how they needed to overcome this confidence initial barrier to participate in learning:

> "overcoming self-defeating thoughts that I won't be able to understand the subject." (S)

A number of participants also spoke of how learning often involves stepping into new territory and out of one's comfort zone. This can often involve asking for help, showing a lack of knowledge, and potentially looking "stupid". As a participant shares, despite a supportive team, there can always be this fear depending on the situation:

> "I think we've got a really great team … but it's really interesting to be able to put yourself out there and say, 'I need help with this', 'cause you don't want to look stupid or to be judged or anything like that and I don't necessarily think people would be. I wouldn't if somebody asked me but it is the fear of the unknown so I think that potentially could be limiting depending on the situation." (I)

One interviewee explored the idea that soliciting feedback or putting oneself in a learning scenario may be perceived by others as a lack of confidence, and how they have a desire to maintain a positive social image:

> "What's stopping me at the minute is if I was to be contacted by someone a lot of the time to say, 'what's your feedback on how I'm getting on?', I'd feel like they weren't that self-assured in what they're doing … with two new people new to my team, I'm not going to ask them, 'do you think I'm a good manager or not? What can I do better?', because I don't want them to not trust or look up to me in the way that they can see me as the sort of person about them to seek advice from." (I)

4.3.7 Learning difficulties and health issues

Learning difficulties and health issues were mentioned several times in the open-ended responses to the survey. Two respondents highlighted autism as a limiter to their informal learning; one mentioned Asperger's; and five mentioned dyslexia. One respondent highlighted how their mobility issues limit their informal learning, as they are now classed as disabled and allowed to work from home, thereby affecting their access to colleagues and resources. Another respondent mentioned how, because they have a chronic disease, "just doing my normal hours and staying on top of the workload is very hard to achieve".

This type of barrier is not seen or discussed in the existing frameworks, including Crouse et al.'s (2011) comprehensive coverage of barriers to workplace learning. Interestingly, this barrier was only observed in the large survey, and not in the face-to-face interviews. This may be because learning difficulties are more rare than other observed barriers, and so rely on the larger sample in order to emerge from the data.

4.4 LEARNING ENVIRONMENT

The third group of barriers focuses on extrinsic factors that relate to the workplace learning environment.

4.4.1 Limited access to learning opportunities

The first group within 'learning environment' barriers covers reported issues where the right learning opportunities are not on offer. So, while an individual may have the time to engage, and be personally motivated and able to engage, they lack the opportunity to participate in informal learning.

4.4.1.1 The opportunities are not there

Indeed, in many cases, participants reported that the learning ***opportunities are not there.*** Whereas many of the survey respondents simply reported there to be a 'lack of opportunities', some respondents and interviewees offered greater detail.

One respondent highlighted how they were limited in terms of who they could engage with:

> "Opportunities to engage with people outside of my immediate area, e.g secondments, buddying, etc." (S)

This inability to engage with others outside of their work area would limit their ability to participate in activities that involved learning with and from others, for example, as the respondent suggests, activities such as secondments and buddying. Other types of activities that could be limited include asking questions, obtaining feedback, and the sharing of news, information and knowledge.

One of the interviewees offered an example of how the 'mechanical' nature of their job, with limited scope to think or explore, limited their opportunity to learn:

> "I think if your job is a lot about mechanicals, it doesn't stimulate you, it doesn't require you to think much … I think if your job is fairly limited … it can have an adverse effect … if the outcome is very pre-set for your pre-package, then it kinda limits your [learning]." (I)

In a similar fashion, another interviewee gave an example of how a lack of work projects limited their opportunity to learn at this point in time:

> "what's limiting me is the fact that we're not bidding on anything. So I'm a Bid Manager without any bids to manage … that's a big

> limiting factor on my personal development … There's no trial and error … Previously, you were sort of jogging along, enhancing your skills, learning more and more as you go along. All of a sudden, it's sort of stopped." (I)

On reflecting on the kind of activities available, many reported being limited by ***a lack of people able or willing to help***. Learning through others is a key form of informal learning, and employees can learn through shadowing, buddying, asking questions, being mentored or coached, or participating in action learning sets. A culture that promotes interaction, discussions and sharing of ideas is important for social learning to happen.

Sometimes, the issue was with persuading others to be engaged and help:

> "persuading others with expert knowledge to record what they know in a form that is digestible to pass on knowledge at a time I can look at it." (S)

However, in many cases, this lack of supportive people was a result of colleagues being too busy to help, with participants saying that it can be "difficult to gain commitment from others due to time pressures". As one respondent expresses:

> "My team (the people I'd like to learn from) being too busy to help much." (S)

An interviewee shares a similar concern, also reflecting on how supporting others' learning may not offer immediate benefits and may fall by the wayside when busy:

> "they're busy about looking after themselves … other people are not always your sort of main concern and stuff … It's always good sharing stuff. I think there is some of that going on but I think also because everyone's sort of busy they don't really stop to think" (I)

In some cases, the issue was with colleagues not wanting to help:

> "The hardest thing is that colleagues within the same team are afraid to impart their knowledge. Our HR assessments are done using levelling so everyone in the team feels they are in competition with others and this makes them uneasy about improving a workmate's performance." (S)

This issue is particularly the case with colleagues with whom an employee is in competition, either for a promotion or in terms of a relative performance assessment. As one interviewee mentions, sometimes colleagues may deliberately withhold information:

> "Sometimes information is withheld from you to stop you from progressing … because they'd like to go for a position that is higher than mine" (S)

Another related barrier is that where colleagues are ***lone warriors***, working alone and away from other colleagues. This may be because they work in a different location, in a highly specialised role, or because of an isolating organisational structure.

For example, one respondent explains how the dispersed nature of their team affects their ability to learn:

> "Working at home makes it much harder to learn from others. Although they would be unlikely to be in the same office anyway, so it doesn't make much difference in practice. It's the far-flung distribution of the team, not the homeworking that is the issue." (S)

With a team working in remote locations, it may take more effort to communicate and to discuss and share ideas and knowledge. When working in an office together, there are more incidental interactions, which may provide opportunities to learn. Other respondents spoke about how their profession limited the help available to them:

> "My profession is not the 'average' within the ITC sector. Being a trainer, I'm not really having any professional help in my own subject matters." (S)

Similarly, an employee working in a specialised area shared a similar limitation:

> "Lack of suitable peers due to being in quite a specialised technical area within [the organisation]" (S)

This lack of peers may particularly be the case for those who progress "up" the organisational hierarchy, as there are typically fewer people working at the same level as one advances through job promotions. One HR Consultant reflects on the change she has encountered since being promoted from an HR Manager:

> "When I was in my HR Manager role I was in a broader team so there was other people within my group that I saw on a monthly basis so that made it easier to share help, ask questions, actually share best practice." (I)

Even for those working as part of a group, with colleagues around, ***organisational silos and structures*** were reported to hinder the ability to learn from others:

> "we're quite siloed in [the organisation], and you don't necessarily know what goes on in different peoples' areas" (I)

Given that many participants spoke of the importance of learning how different areas of the business function (as will be discussed in the consideration of Research Question 2), organisational silos and divisions between business areas have potential to hinder learning in which employees wish to participate. Another interviewee also spoke of how the lack of cross-over between directorates limits the opportunity to learn from diverse experiences:

> "So different directorates just focus on their work. I don't think there's much cross-over in terms of development, providing that platform for development across sections of the team or across the wider business anyway … everybody's got different experiences and the whole office is different. … I do see it as something that does hold people back a little bit." (I)

Job changes can also prove a barrier to informal learning opportunities. One respondent suggested that changes in their job role hindered their learning:

> "changes in roles (constant re-organisation with new management different view of my role and training needed)" (S)

Although the respondent doesn't go into detail, changes in role can create a number of problems, such as the need to settle in, familiarise oneself with the job basics and make new contacts. With each change of role, there may be a different manager with different expectations, as the respondent mentions. An interviewee also explains how a change in role, in this case a temporary secondment, can influence learning:

> "I think in terms of limits - I'm under secondment at the moment, so I'm not treading on eggshells, but I don't know what the boundaries are in that sense. I need to just do what I'm told, and just get on with my day to day job, and look at the team, and look to progress the team. I think more of, because I'm on probation … I've not had a development review because I've not been in the job for that long." (I)

This account also suggests other ways in which job changes can hinder learning. It can often take time to adjust to a new role, finding boundaries, understanding expectations, and understanding how things work. Similarly, this participant's probation may create additional barriers – in that they are not yet in a permanent position, and their job performance may be more closely managed and assessed than is usual. Informal learning that is not directly relevant to the job, in such instances, may then fall by the way-side.

The final barrier that was seen to hinder access to learning opportunities was that of ***funding***, which was mentioned in 10 open-ended survey responses. Few went into any detail as to how exactly funding affected informal learning participation, but those who did give detail explained how it made it difficult to buy books, buy technological gadgets, or fund traveling or attendance at events.

With informal learning, it may be that organisations and managers can build learning opportunities into job roles. For example, jobs may be designed in ways that provide opportunities for employees to stretch themselves, or could facilitate interaction with a wide variety of people from which the employee can learn. For those job roles that are more isolated, or where there are impermeable organisational silos, managers may be able to support in other ways, perhaps offering subscriptions to professional societies so that their reports can still engage in learning from others.

4.4.1.2 Knowing what to do or how to do it

For some, the opportunities for informal learning may have been there, but access to these activities proved difficult, with participants ***unsure what to do, unsure how to do it, or unable to know that they're doing the right thing***.

This could be in terms of knowing where to start:

> "Lack of initial knowledge as a starting point, lack of the ability to shape my learning experience into a reliable process" (S)

Several participants mentioned the importance of having good 'reference points', which are important for knowing where to start, how to direct one's learning, and even help pick yourself up if you find yourself stuck. Such 'reference points' could be knowing the right search terms to Google, or the right people to ask.

Several survey respondents stated how it was necessary to have reference points to help "identify useful and high quality informal learning avenues", and how they feel hindered by their lack of "capability to identify the quality of the contents of informal learning and concerns how effective they should be."

One participant highlights the need for help in filtering out which activities are most helpful:

> "Filtering the really good items out of the large amount of content that is available. Wood from trees type stuff." (S)

This may be particularly important for informal learning, where there are a number of different routes and opportunities by which one can learn. Just on the Internet alone, there can often be much content of varying quality, which can be both overwhelming and time consuming to find and then filter out the most useful content.

Knowing people, as well as reference points can also be helpful, and one respondent explains that it is important to "know who to contact" and for "that person to have the time to spend with you". This barrier of not knowing who to contact may be particularly salient for informal learning, as other people play an important role in social learning activities.

This area - knowing what, who, where and how - is where good managers and good Learning and Development partners come in. Indeed, a couple of interviewees suggests ways in which the organisation could signpost

opportunities more effectively. One interviewee suggests more information on a corporate intranet:

> "I think there could be a lot more stuff on our intranet that talks about how to do it and who's the best person and if we could have some little bit of 'what do you wanna get out of this?', some kind of ABC tick test that says 'Do you need a mentor?' and 'Do you need somebody to help coach you?' and then that would direct you to get the guidance you need so I think we could definitely do with more of that." (I)

Similarly, another interviewee suggests email communications promoting opportunities – or going one further, a new role for somebody who collates and knows of different learning opportunities, who can then share these with employees:

> "it's almost as though there needs to be another role in place for people like that … I'd like somebody ideally to have an idea of everything that's going on all the time within the business that is additional to your normal job role. Say if a comms [email] was sent round: 'why didn't you get involved with this?' … I need somebody like that to showcase what's done." (I)

Such communication and support may also need to outline the 'why', explaining the benefit of different activities. As one respondent notes, sometimes it can be difficult to have a clear vision of the benefits of any particular learning opportunity:

> "Perhaps lack of a clear vision of the benefit I might receive from the learning to make it worthwhile to bother" (S)

This theme is especially novel in the context of informal learning. It may be that this is similar to the learning of inappropriate knowledge discussed in previous literature (e.g. Billett, 1995), but the accounts by participants in this study present the idea that the barrier is earlier on in the learning process, being pre-learning rather than post-learning. The challenge of not knowing what or how to learn may be more of an issue for informal, compared to formal, learning. Formal learning is predominately structured, with the content and delivery methods already prescribed. Informal learning, however, is more self-directed, and so the fact that employees may not know what to do, or how to do it, is more likely to be an issue.

4.4.1.3 Informal learning is not recognised or accredited

One interesting barrier to informal learning mentioned was the fact that informal learning tends not to be recognised as a valid method of learning, or is not accredited. As one respondent explains:

> "[informal learning] is totally inadequate for quality and auditable training to ensure a quality product. No aims or objectives are set

> so at the end of this "training" it is impossible to measure your competencies" (S)

Here, the issue is that, with informal learning, it can be more difficult to measure progress and development as there are rarely formal competencies or clear aims and objectives. This can be particularly problematic in instances where individuals are required to meet particular standards, or if their learning needs to be measured as part of performance management.

One participant goes into greater detail in an interview, explaining how it can be difficult to show others the benefits of informal learning:

> "So it's about how do you recognise informal learning. And for some people, that's very important. My view on learning, as a whole, formal or informal, sometimes it's to get a badge, so you can demonstrate to somebody … Sometimes it's to learn something 'cause you want to learn the skill, or the knowledge, or the ability to do something. And sometimes the two overlap, and you could learn something, and get the recognition for it … if you've invested some of your time - your business time, rather than your own time - there's not necessarily a return on that investment that's visible, or tangible." (I)

With formal learning, there is often something to show: attendance can be proved at the course, or formal study may end with a qualification. However, given the self-directed and more individual nature of informal learning, this engagement in learning can be difficult to demonstrate to others. The participant makes a particularly interesting point in terms of a visible 'return on investment', and indeed, with informal learning, it is more difficult to quantify learning in an objective way. The same participant goes on further to explain how this lack of recognition and accreditation may be particularly problematic in an engineering type role:

> "Particularly, I guess, in engineering type areas of the business, because it's compliance - so training leads to compliance, training leads to certification, training is something you do, you know, off the job, and that type of attitude. And sometimes, to use a term - that pink and fluffy nonsense, it's got no place here, we've got work to do" (I)

Here, two interesting points are made. Firstly, formal learning is more readily recognised than informal learning in business areas involved around compliance. For example, in areas relating to 'health and safety', it is easier to show that employees have been on a training course than it is to prove that they have read a document, or have learned through experience. Formal learning, in comparison to informal learning, offers an easier way to demonstrate compliance and competence.

The second point is that of the general 'attitude' towards informal learning, which one respondent describes using the term 'pink and fluffy nonsense'. Indeed, in an

organisational culture or work environment that fails to recognise informal learning for its value, and sees it as secondary to formal learning, then there will be less incentive for employees to engage in informal learning, with individuals more likely to engage in formal programs with the limited time and resources that they may have.

4.4.1.4 The right kind of activities are not offered

Although opportunities may be available, there may also be the issue that the ***activities on offer are not the right ones*** for the employee. It may be that they're not relevant to the role in which an employee is in, or perhaps the employee prefers other ways of learning.

For example, one respondent offers an example of how they prefer to learn through speaking with experts rather learning through online learning platforms:

> "I have little appetite to get involved in on-line sharing / learning activities. I prefer to speak to experts rather than trawl sharepoints or join online forums" (S)

An interviewee also indicates a preference for learning in a certain way, driven by her discomfort in large groups:

> "I will be drawn to some activities more than others because, like anybody, because of aspects of my personality or learning preferences, learning styles … my uncomfortableness of being in a large group situation - that will tend to influence how I like to learn and how I learn best" (I)

While this barrier has been discussed before in the literature (e.g. Doyle & Young, 2003), it is more relevant to formal learning than informal learning. In many cases, given the self-directed nature of informal learning, this is unlikely to be a major problem, as individuals can choose to participate in activities that match their interests and needs. However, some ways of learning may be influenced by the organisation, and one respondent explains:

> "we've all just been made to do modules online to learn how to now use a new system. That's not the way I learn best but it's kind of shut off as if to say, 'That's how we're gonna do it in our department.'" (S)

For this individual, there could be other ways to learn how to use the new system: shadowing somebody else, experimenting through trial and error, or reading a user guide. However, if the organisation insists on learning through a particular route, this can limit the opportunity to engage in other methods of learning, reducing the time available or simply drawing a line under certain routes to learning.

4.4.2 Unsuitable location and equipment

The work environment can be particularly important in learning, and a number of participants stated that they found their work environment to have ***too many disturbances***, saying it was "easier to learn in a quiet environment rather than a busy office or home". One respondent highlighted this problem with open offices in particular:

> "An open plan office can be distracting. It can be difficult to locate alternative and free accommodation that enables self-study." (S)

The respondent also mentions the difficulty with finding alternative places to engage in informal learning and free oneself from distractions. Another respondent compared the informal learning environment to the formal learning environment, commenting that a classroom environment is less susceptible to interruptions and distractions:

> "interruptions limit [your] ability to participate in informal learning. At least with a defined session in a training or classroom environment you are less subject to interruption or distraction." (S)

These distractions can come from a number of sources. As seen in the 'open office' remark – simply the noise of others in the same environment might be distracting. Others with whom one works can also disturb and distract:

> "ensuring the surrounding people you engage with / work with understands what you are doing so they don't pursue you on another work related matter" (S)

This was particularly the case for those with people management responsibilities, who made reference to the fact that their reports would often disturb them.

Having to fit in informal learning at one's normal desk also creating distractions, such as from phone calls and emails:

> "Distractions from normal work activities, it's hard to ignore a ringing phone or the ping of a new e-mail." (S)

Similarly, being at one's desk also means that others can find you to offer more work:

> "I find that if I try to complete any type of learning activities at my desk during work hours (inc lunch time), I get interruptions from important phone calls or work that has to be dealt with straight away. This means I never get back to complete the learning activity eg this survey, I started this at approx 13.30 and am just finishing it at 15:50, due to urgent work interrupting me." (S)

Previous studies have not discussed such a barrier to learning, but, like with several other barriers discussed, this may be because previous work has tended to focus on formal learning, in which one's day to day working environment is less important compared to the training room or delivery method.

Several respondents cited a ***lack of access to suitable technology*** as a barrier to informal learning. Many mentioned issues such as having poor broadband at home, not having a work-provided laptop, or the organisation's learning platform not working at home. One respondent goes into greater detail about how the lack of a suitable, modern device, such as a mobile phone or tablet affects their learning:

> "Devices. I would do more learning if I could do it on the train for example but my blackberry doesn't work on this platform. If I had a work iPhone/iPad type of technology, I would watch with my headphones when I did have downtime like travelling or between meetings." (S)

Access to mobile devices may be particularly important for informal learning. As part of the introductory question in the interview schedule, many participants gave examples of how they learn on the move: reading articles, using learning apps, perusing social media or learning intranets, and listening to audio books. There were many examples of where this mobile learning takes place too: on the morning commute, in down-time between meetings, in hotel rooms when travelling on business, having audiobooks playing on the car speakers when travelling, while waiting for appointments, or while sitting with the family at home. Unsuitable technology has been identified as a barrier in previous work (e.g. Crouse et al., 2011).

4.4.3 Lack of organisational and interpersonal support

Despite the wide array of sources that support informal learning, few were found to hinder, or act a barrier, to learning. The main barriers to learning came from the organisation (or "the system") and employees' managers.

4.4.3.1 From the organisation

One issue for some was with their ***job design***, with a lack of autonomy and too many targets limiting employees' ability to learn. As one respondent describes:

> "[The] target driven approach to work prevents me thinking creatively and trying to improve myself across a spectrum of areas or techniques" (S)

The ***reward and recognition structure*** of the organisation can also act as a barrier to learning. One respondent describes how this lack of reward and incentive from their employer may affect their informal learning participation:

> "The lack of support, recognition and incentive from [our company] including lack of interest in employee PDPs, continued

> development and reciprocity for my time. It is also very difficult to get support for any associated costs, for example books and exam fees despite [our company] being a partner or having preferential rates with most manufacturers. suppliers and certification bodies" (S)

If engagement in learning activity is not rewarded or recognised, it can be difficult to have access to the resources and people to support your learning, and engagement in learning activities may be seen as harming performance. Not only do the tangible reward structures need to support learning, but also the organisational culture and attitude need to recognise the value of learning:

> "In order to really hone your skills, you need to put them into practice. There is often resistance to trying new ways of doing things. Even where there is an open minded culture, the fact that there needs to be an upfront investment of additional time and resource when changing ways of working is usually not recognised and it becomes necessary to bring about change on top of your 'day job'." (S)

If others fail to recognise the value of learning, it may be difficult to take out work time to learn, or others may frown upon efforts to engage in experimentation strategies and 'trial and error'. This barrier to learning could relate to that discussed earlier, in which informal learning is often not recognised or accredited.

4.4.3.2 From managers

Of the individual people who acted a barrier to informal learning, ***managers*** were cited on a frequent basis, as would be expected given their prominent coverage in existing literature. One respondent was particularly damning about their manager's approach to learning and development:

> "My manager's inability to recognise the value of learning, development or training in any form." (S)

Managers are responsible for not only overseeing the development of their team, but also for looking after their day-to-day performance. This performance management role is often more critical to the business, and so is more likely to be prioritised than taking time for conversations about development. As an interviewee describes, many of her meetings with her manager were primarily focused on work specifics and quick updates, rather than in-depth chats about learning:

> "sometimes the difficulty can be that a lot of our conversations are about the specifics of what we're trying to get done and get out of the door … I'm one of five or six direct reports. And so then he's also got to apportion his time between them as well, which I'm kind of conscious of, so we'll have kind of a quick check in meeting. But it's more of an update rather than an opportunity to say talk specifically about self-directed learning." (I)

As a manager, balancing these conflicting needs of managing a report's job performance with the report's learning and development can be difficult. As one respondent describes, sometimes this balance is not found by managers, who offer conflicting goals to their reports:

> "Manager being unreliable (says one thing one week, contradicts the next), unsupportive and says development is a must but then gives you more work than is possible to complete. So no room for training." (S)

Managers may also hinder learning by not giving opportunities to learn:

> "I have recently been through an 'Aspiring Leaders' course … I had never covered for a manager before, unlike the other 3 candidates on the programme, so I asked the senior manager for 1 or 2 days to shadow the manager I'd be covering for in June, but he refused saying that'd be something I'd have to do in my own time." (S)

Similarly, managers may not offer up opportunities, as an interviewee describes:

> "I talked about how I was getting bored and I needed more, and it was like, "there are no opportunities right now, just bear with it". There are always opportunities in a business this size, I just didn't feel that I was getting the guidance for it. … I thought, 'You know what, I'm not asking anymore, I'll just get on with it.'" (I)

On a day-to-day basis, there are many opportunities to learn, by trying new ways of working and pushing oneself out of the comfort zone. However, such opportunities may be limited if managers fail to provide autonomy. One interviewee describes the micro-managing nature of a former line manager, and how this stunted her learning:

> "She was just a lot more controlling over what I was doing, so I didn't necessarily think I had the autonomy to go off and do stuff. I always needed to check in with her … but you kinda need to 'let go' so to speak as you move forward. … I think it stunted me in one sense, because I wasn't given the opportunities like I am now in terms of, 'Just go out and do this presentation' because she'd naturally do them for me." (I)

Another interviewee also offers an example of how their line manager hindered learning. In this instance, while the manager tried to support learning through enforcing certain approaches, this did not necessarily sit well with their employees:

> "I think it's the freedom, the autonomy to do what I want to do the way I want to do it, as opposed to having to do it a specific way. … the way she did it she wanted everyone to adopt. It just didn't sit right and I didn't like it. It wasn't the way that I felt like I could

> learn. So I think imposing stuff like that is a big hindrance. It limited my ability to want to learn because I didn't want to do it that way." (I)

There were also more extreme examples of how managers acted as barriers to learning, with some instances of where managers had a more active role in blocking learning and development. In one interviewee's case, their manager's inflexible approach and attitude may have affected their chance for a job promotion:

> "[I] applied for a management position, and I asked [my manager] to go through my application, and she just basically got a red pen and put circles where my mistakes were, what was wrong, what to do, and how it needs to be more like hers. But we're different people. I put my application in and they asked my manager for feedback because I was on the borderline. Basically, it was along the lines of, "I didn't take her feedback", so that's why I didn't get an interview." (I)

In another interviewee's case, her manager acted as a blocker to her development, in this case a secondment opportunity:

> "[My manager is] a blocker to my development in terms of how she is because she doesn't try and she's not good at development … when I had the secondment opportunity, she was very unhappy about it and it was quite personal - so it was like, not "you're leaving me in the lurch as in so many words" but "oh what are we gonna do without you? Oh, it's gonna be so hard" - that type of thing." (I)

4.4.3.3 Being pigeon-holed by others

This category is somewhat distinct from all others, as it is the only one that transcends different interpersonal sources of support, and the only barrier that includes any interpersonal source other than the employee's manager.

One interviewee recounted how they became pigeon-holed into a particular job role, and how this affected their opportunity to be placed in new job roles and be given new opportunities:

> "when you're a bit younger … you can get pigeon-holed quite easily, like 'that's the guy that does that job and he's not good enough to do anything else because all he's done is that job'" (I)

Another interviewee of a similar age spoke similarly, but also spoke of how they used an opportunity to develop them outside of the area into which they had been pigeon-holed:

> "so I'm a Bid Manager, but I've sort of been pigeon holed into Bid Manager. ... So I've been trying to doing a lot of [activities in other areas]." (I)

Outside of work, there were examples of how friends and family may act a barrier to learning, with their different perception of the non-work individual maybe affecting what they say to that individual:

> "a lot of people actually think because I'm very informal and really laid back outside of work. So they do often say, 'well why have you applied for that because you're never going to get it are you?'… they could hinder in that they don't see me in my day to day role" (I)

While those outside work may not have a true picture of what an individual is like in the workplace, the comments that friends and family make may still have an effect on the individual, making them question their decisions, or affecting their confidence. Another interviewee spoke of how her father's perception of her sometimes hinders her learning:

> "I think sometimes my Dad does [hinder me] because he'll be like 'Oh no, you're brilliant as you are, you don't need to do anything else', which is amazing, you want that support sometimes, whereas, other times you actually need somebody who will be a realist and say, 'you should be doing this', or 'you maybe shouldn't have done that, it wasn't the best idea'". (I)

This attitude was not unique to family members, and there were other instances where participants mentioned that their colleagues or managers already believed they were the 'finished article' and therefore less forthcoming with learning and development opportunities.

4.5 SUMMARY OF THEMES

So far, each of the barriers that emerged in both interviews and survey data have been presented, and barriers have been considered in a number of different groups. These groupings are presented in Table 6.1

Time and workload *(extrinsic, intrinsic)*	Other things take priority	• Low priority of informal learning • Work targets • Change, instability, and growth
	Need for scheduled time	• Difficult to get time approved • Lack of slack time • Workloads are hard to predict • Nobody covers you when you're off • Work targets remain
	Contract types	• Full-time versus part-time
	Factors outside work	• Family and children • Household management

		• Hobbies and leisure activities
	Time management individual differences	
Personal factors *(intrinsic)*	Poor concentration	
	Poor self-discipline	
	Lack of motivation	
	Lack of energy	
	Lack of confidence	• Willingness to be vulnerable
	Learning difficulties and health issues	
	Lack of drive	• Trusting others to drive learning • Remembering the benefit • Lack of direction and goals
Learning environment *(extrinsic)*	Limited access to learning opportunities	• Opportunities are not there • People not able or wanting to help • Lone warrior • Organisational silos • Contract issues • Funding problems • Don't what to do or how to do it • IL not recognised or accredited • Prefer other activities
	Unsuitable location and equipment	• Work environment: noise, disturbances • Lack of suitable technology
	Lack of support for learning	• From the organisation: job design and reward structures • From other people: mainly managers • Being pigeon-holed

Table 6.1: overview of barriers to informal learning identified in the study, categorised into overarching thematic groups.

Three overarching groups are proposed: time and work demands, personal factors, and the learning environment. Time and work demands are considered separately to the other extrinsic factors (the learning environment) given the sheer frequency with which they were reported in the data. These groupings support existing thinking in the literature, including Stuart's (1984) separation of intrinsic and extrinsic barriers. The 'limited access to learning opportunities', 'unsuitable location and equipment' and 'time and workload' also match with Stuart's 'physical-structural barriers', and 'lack of support for learning' matches Stuart's 'psycho-social barriers'.

The grouping of barriers presented in this study offers several new insights compared to previous categorisations of barriers in previous studies. Firstly, by going into greater depth and considering the ways in which participants discussed issues, many barriers that were previously considered as unrelated were instead found to be connected via similar mechanisms or barriers. For example, in Crouse

and colleagues' review of barriers, a fast pace of change was a distinct category of its own. However, in this instance, by exploring participants' accounts in detail, this fast pace of change was found to be related to a lack of time, with a fast pace of change meaning that there is less time in which employees can engage in informal learning. Not all barriers were found to be relevant to informal learning – and some previously highlighted in previous work – such as 'do not like how in-house and external training is delivered' or 'instructors who lack credibility' are unsurprisingly not found when looking at informal, rather than formal, learning.

The specific focus on informal learning, however, did allow new barriers to emerge. For example, the fact that individuals frequently have to engage in informal learning at their desk, and so are more easily distracted by their day-to-day work or their colleagues, compared to if they worked off-site or went to a training room for a formal training course. Another novel finding was the fact that informal learning is often not recognised or accredited, and so learners do not have anything to show or demonstrate their learning.

This study of barriers also allowed the exploration of some of the more nuanced mechanisms of barriers, particularly time and personal factors, which have previously been considered purely at a high level (Crouse et al., 2011; Doyle & Young, 2003). In terms of time, there were some interesting effects. While 'time and workload' was an especially common reported barrier, this lack of time actually arose because of other mechanisms: a low priority of informal learning compared to other work tasks, ongoing change and instability, the difficulty of getting time approved or not being given sufficient slack time, and the competing pressure of meeting targets. For personal barriers, a number of different effects were seen: from poor concentration, motivation and energy, to a lack of drive, direction and self-discipline. One exciting find that emerged, mainly as a result of the larger survey, was the way in which learning difficulties and ill health may act as a barrier to informal learning, something that has rarely been discussed in the learning and development literature.

It is worth commenting that there are many ways in which these barriers may have been categorised, and indeed, during the analysis and interpretation of the interviews and survey responses, the overarching themes and groupings changed on many occasion, challenged by additional reading and by peers who offered feedback and support with the analysis. The decision to group into three broad overarching groups relates to the idea that many of these barriers are highly inter-related, and so an overly hierarchical taxonomy may over-simplify or give the wrong impression about how barriers work together to affect informal learning. This is in stark contrast to Crouse and colleagues' extensive taxonomy, but is more in line with thinking by Stuart (1984) and Lohman (2000, 2005).

It is also worth noting that the methods used may mean that certain barriers would not be identified, particularly those sensitive aspects about which participants may not want to talk or disclose. However, it is hoped that the anonymous open-ended survey response may have compensated in some part.

5 FINDINGS: THE ROLES THAT PEOPLE PLAY

The second research question surrounds the role that other people play in supporting or hindering employees' informal learning. The current literature has primarily focused on the role of the line manager, with some growing exploration of the role that colleagues play as facilitators of the informal learning process. However, there are many other people who may affect an individual's informal learning endeavours, as is demonstrated in the discussion of interview findings in this section.

This section considers different sources in turn, highlighting the roles that were found to be common for each source. Particular attention is drawn to any specific or unique nature of those roles. After discussing each source, similarities and differences are highlighted, and the general findings are presented together and related back to the existing literature.

In this section, quotations from interviewees are presented in a mixture of ways: in tables when offering multiple examples of a similar concept, and in-text when highlighting a subtlety or more unique observation. This research question was answered through the interview participants alone.

5.1 MANAGERS

When asking participants about the people who supported or hindered their informal learning, managers were always the first to be mentioned. Participants offered many examples of how present and past managers have differed in the ways in which they facilitated, or failed to facilitate, learning.

The most frequently reported role of the manager was concerned with them ***creating the right learning environment and culture***, fostering a positive approach and attitude to learning and development within their team. Examples of how managers could create a positive culture included promoting autonomy and self-direction of the learner (1.1), coaching and guiding employees to an answer rather than telling them or doing a task for them (1.2), taking a personal interest in their employee's development and asking questions about future plans (1.3, 1.4), offering feedback (1.4), and fostering an environment where employees are free to experiment, ask questions, and where learning is encouraged (1.5, 1.6).

1.1	"It's the freedom, the autonomy to do what I want to do the way I want to do it … We had one manager who liked mind maps … It just didn't sit right and I didn't like it. It wasn't the way that I felt like I could learn"
1.2	"Sometimes in the past it's been a little bit too much kinds of hands on help, whereas now … he knows where the answer is but he'll guide you towards it rather than just come over and start pressing keys and giving you the answer"
1.3	"My manager now has been the most supportive that I've had ever in any role and is constantly challenging me, and questioning what I want to do next"
1.4	"She got me to think about me and my career more, you know, not just about the job and the company but more about where was I going, where did I see myself and what were my skills and strengths."
1.5	"She created an environment where no question was a stupid question … if it's a disciplinary type situation, how should we investigate it, we've room for a redundancy situation where we've had to make people redundant, how do we do it?"

1.6	"The chair … she definitely gives you confidence to want to develop yourself, take risks and be comfortable with making mistakes if that's what you need to do at the time ... she wants to develop people and it's not all about getting it right every time ... it's just a bit contagious ... being expected to have that drive and learn more than you might need to know or just to do more than the bare minimum."

In many cases, managers' support for informal learning was indirect, occurring as a consequence of the ***general work environment*** that a manager was developing. For informal learning, the working environment is of paramount importance as many learning opportunities and activities arise as part of one's day-to-day work.

This positive work environment could include measures such as the setting of high standards and ambitions (1.6, 1.7), which encourage people to develop; and then later recognising efforts and performance gains (1.8), rewarding people and encouraging them to continue to engage, but also offering feedback on their efforts. Autonomy was also demonstrated to be important in a number of ways, with a manager's trust (1.9, 1.10, 1.11) not only helping employees feel empowered and motivated to learn, but also allowing them to try new things and learn by themselves. Being able to make decisions was also highlighted as being important (1.11, 1.12), with this "thinking for yourself" approach supporting learning as employees engage in learning in order to understand and justify their decision. There were also a number of examples, again, of bad managers who hindered learning by failing to offer autonomy to their staff (1.13, 1.14). A lack of autonomy not only restricted opportunities to learn, in these examples, but also held a negative effect on the employee's motivation to learn and engage.

1.7	"He sets the bar very high and, and I've got quite high standards, so I think we've identified a similar value there in terms of really stretching ourselves and trying to learn and trying to grow and trying to develop"
1.8	"If someone's not recognising what you're doing, you're thinking 'what's the point?'. … if no one's telling me I'm doing a good job then what's the point? When you've got someone saying, 'do you know what, you're doing this, keep going, keep doing this, let's try and do it', you're almost getting pushed, you think 'yes I want to do' that just to prove that I can do it"
1.9	"They understand you and they empower you and they trust you to get on with things. That is a big thing for me. I need to have a manager who empowers me and believes in me."
1.10	"It made [me] feel empowered. … When someone trusts you with responsibility you feel a sense of pride and then you actually want to do something good. You actually want to know what's going on. You actually want to learn how did he do his job so I can do it better"
1.11	"I need a manager who believes in my and trusts me and trust my decisions … This manager understood me, understood what I needed to get the best out of me, empowered me, trusted me to get on with thing and I came on leaps and bounds in the last year."
1.12	"Now you have to do a lot more thinking for yourself and you have to make a lot more decisions for yourself and be able to explain those decisions and rationalise; you're not just being told to do so something"
1.13	"I think it stunted me … I wasn't given the opportunities like I am now in terms of, "Just go out and do this presentation" 'cause she'd naturally do them for me. … my new line manager, who's a lot more hands off and gives you that autonomy, it's taught me to bridge that gap in a sense."
1.14	"She was just a lot more controlling over what I was doing, so I didn't necessarily think I

	had the autonomy to go off and do stuff. I always needed to check in with her, which I think is great when you're starting off in a role but you kinda need to 'let go' so to speak as you move forward"

There were other examples where bad managers had a particularly negative effect over one's work-life, which in turn affected learning intentions and participation (1.15, 1.16). By failing to support and engage their employees, managing in a misguided way, or engaging in micromanagement, managers were able to dent their reports' confidence, motivation and enjoyment across both learning and broader work domains.

1.15	"They tried to manage me in a way that just wasn't right for me. They tried to tell me what to do, they tried to dictate how the work needed to be delivered, they didn't ask me for my opinions or want to learn from the five years that I'd had [on secondment]"
1.16	"They looked at my calendar every day … [they] didn't let me crack on with my job … I don't feel like I had much praise or criticism … I just didn't enjoy working for the organisation, I stopped enjoying working for the organisation because I wasn't working for the organisation, I felt like I was working for him … my thoughts and feelings of the organisation became quite sour … I just wanted to get through the day and just do the job, and I probably didn't do it to the best of my capability."

Related to the idea of creating a learning culture, one unique concern with the manager-employer relationship was that several employees tended to ***contact their manager only with completed work or well thought-through ideas***. In many cases, employees were willing to share their thoughts and work-in-progress with other individuals, such as their peers, but there seemed to be something unique around the role of manager that hindered this ability to openly share work-in-progress.

Participants' recollections of this lack of willingness to share sheds some light on the possible reasons why. In some cases, participants were concerned that their manager would perceive work-in-progress as weakness and so preferred to show an end, or near-end, result (1.17, 1.18). Managers play a conflicting role in an employee's management, being responsible for not only their development and learning, but also for their performance management and day-to-day work; managers will often be at the heart of appraisal, development reviews, and promotion decisions. This conflict may highlight why employees may be concerned with showing weakness to their manager, as employees may feel that their manager may make a performance decision based on the sharing of incomplete work or partially consider ideas.

This conflict is highlighted rather well by one participant (1.19), who contrasts the making of mistakes in front of one's manager with the making of mistakes in front of one's family or colleagues. Here, it is suggested that their manager is more concerned with end results. Other participants highlighted that they felt that their manager was too busy or important (1.20, 1.21) to be troubled with their ideas or questions.

1.17	"I don't want to present something to Amanda that has spelling errors. I want it to be correct, because I don't want her to see my weaknesses as much … I'm happy for Tim

	and Tracy to read through it … So, it's that I want to do better for her, making it right."
1.18	"You didn't want to go back to [your managers] because really you've got to have the appearance of trying to work it out yourself first … it'd be the end result that would be the important thing."
1.19	"Hierarchy is something that needs to be considered … if I'm with my family and we're trying to learn something or having a discussion, making a mistake has less consequence … the kids laugh at me - big deal … Whereas, if I try something … in a business setting, and it lets our client down, or our manager doesn't approve of it, there's some consequences … with my colleagues, we can discuss an idea, and test an idea. … we can work something through, and trial and error, or whatever it might be, and we'll get somewhere, an end result we're comfortable with, or we decide to put it in the bin, but we've tried it. … in a hierarchy … you don't want to get it wrong in front of the boss … your boss would expect results, not to deliver experiments."
1.20	"I wouldn't want to sound silly … I probably wouldn't be like this thing is randomly floating around in my head, let me talk to [him] about it because I wouldn't want to, I wouldn't want to waste his time"
1.21	"[if there was] somebody in a slightly more hierarchical position I would go to somebody underneath them to ask … it might be me being pathetic, but they could be stressed and busy so they're probably not going to waste their time on me"

Other roles of the manager were more concerned with supporting the individual employee's actions: encouraging, or pushing, them to step out of their comfort zone, and building their confidence so that they felt able to participate in informal learning activities.

Many participants spoke of how their manager had ***'pushed them'***, implying that they themselves may not have engaged in a learning opportunity if their manager hadn't encouraged, or forced them, to engage (1.22, 1.24). This 'pushing' was seen in the form of a manager giving specific projects (1.23, 1.24) or asking challenging questions (1.25), and participants gave examples of how this short-term pain may offer a longer-term gain (1.26, 1.27), and allowed them to develop in ways they themselves may not have considered (1.28).

1.22	"I probably learn best if someone pushes me. So like kind of force me, if I'm left to my own devices I tend not to, I just kind of status quo, I just plod along."
1.23	"She pushes me outside of my comfort zone. She's given me South Africa project. She knows I'm not particularly capable at the moment, I would say, or it's just out of my comfort zone. She knows that and she knows the scenario that I wanna develop in."
1.24	"She's supporting me and she's kinda pushing me in the direction of different people she know that can support me with the project. Just making me get up in front of people and present back what I'm doing, which I probably wouldn't necessarily always put myself forward to do."
1.25	"I found them really quite challenging in terms of the questions they've asked me and where they've pushed me to look further."
1.26	"You need that push to make it happen because, you know, it might be painful now but it's gonna be rewarding later on."
1.27	"I would say probably the first three [of my line managers] were really, really hard task masters to work for. You'd almost consider them as bullies, but in my mind they gave me 80 per cent of what I've got now because they pushed me out of my comfort zone continually and that's how I've improved and that's how I've got to where I am."
1.28	"When you have someone saying 'come on', pushing you that little bit more you do it that little bit more, then you think "I didn't know I could do that". It makes you want to

	do it even more"

Managers also offered motivation and encouragement in a different way, ***encouraging and building confidence*** in their employees (1.29, 1.30), which fuelled their learning efforts as they felt empowered and realised their potential. On the flip-side, however, managers were also in a position in which they could easily damage confidence (1.31).

1.29	"She's the first person who's really made me look at myself quite closely, made me feel really good about myself but also managed to also get me to realise where I need to work on things without making me feel like I'm not good at things."
1.30	"A good line manager helps you realise your potential in such a way to give you that confidence to do it. If she'd have just said to me, 'well I'm sorry but you've got to line manage him so get on with it', I would have been in a dreadful state because I'd have been dreading every flipping time I had to do a one to one with him. Whereas because of the way she talked to me and gave me belief in what I was trying to do and to say, you know, you stick with it, I know you can do it and all the rest of it, that gave me the confidence to try and keep going."
1.31	"They made the wrong assumptions about me. It really destroyed a lot of confidence that the line manager on secondment had built up and it took me quite a long time to get back to that top actually."

Managers have a great deal of power in terms of the ***resources*** they could make available to their employees. That could be in the form of sharing their knowledge of opportunities and contacts (1.32, 1.33, 1.34), acting as a gatekeeper or provider of learning opportunities (1.34, 1.35, 1.36, 1.37, 1.38, 1.39), or providing time during the working day for participation in learning (1.43, 1.44). Managers, as the gatekeepers of opportunities, could also block access to opportunities (1.40, 1.41, 1.42), sometimes seemingly without good reason.

Suggesting opportunities	
1.32	"He actively encourages this kind of thing. He's always suggesting things and books and articles to have a look at"
1.33	"She is the one that's got me into listening to some of these books 'cause she's recommended them to me. That's been quite influential 'cause I don't think I would necessarily have thought about doing something like that."
1.34	"She was a brilliant manager; she has put me forward to so many things, or just suggested them knowing that I would want to take it on"
Providing opportunities	
1.35	"I had a very honest conversation, "Look, I'm bored of doing my day job, I want to do something else," and she goes, "Well you can't 'cause this is your job. You either find another job, which is fine by me if that's what you want to do, or keep doing your job but I can give you extra little bits to ease the boredom". I was a bit bored of just ringing people all day. She used to give me data to analyse or the one to one to do so it developed my skills and understanding of the business as well so when I want to go to an interview I can relate stuff back. She was really helpful in trying to develop."
1.36	"My manager's really supportive like she put me forward for this [interview]. I've ran the team huddle, she was away on Monday so I covered and actually managed to motivate the team. We actually smashed a record of how many sales we did that day"
1.37	"[He] delegated some of his responsibilities to me and asked me to take the responsibilities on my head and get on with [the] job really ... I found it good because it gave me exposure to a more challenging environment"
1.38	"My manager was helpful … because she allowed me to listen into meetings with customers and get more of an understanding"

1.39	"My manager's given me three proposals to work on, and basically told me what my objectives are, and then she wants me to book in catch ups with the senior leaders who will be the stakeholders to support the proposals, and then try and get sign-off on those, and then roll with that."
Blocking opportunities	
1.40	"She's a blocker to my development … when I had the secondment opportunity she was very unhappy about it and it was quite personal, so it was like 'you're not leaving me in the lurch'"
1.41	"I talked about how I was getting bored and I needed more, and it was like – 'there are no opportunities right now, just bear with it'. There are always opportunities in a business this size, I just didn't feel that I was getting the guidance for it."
1.42	"I applied for a management position, and I asked her to go through my application, and she just basically got a red pen and put circles where my mistakes were, what was wrong, what to do, and how it needs to be more like hers. But we're different people. I put my application in and they asked my manager for feedback, 'cause I was on the borderline. … I didn't take her feedback, so that's why I didn't get an interview."
Controlling resources	
1.43	"They put a lot on you, like deadlines, and that can hinder you a little bit, or they can hold you back from being able to go and do any of this, because you're conscious of time."
1.44	"They'll say 'we're expecting to have 3000 calls today, we need everyone on the phones answering those calls'. Then you've got some of the managers who are like 'yes, it's all about the pickup, you need to be doing it', so they will cancel training and things like that."

One common role exhibited by managers, both direct managers and more senior managers, is that of a ***role model***. Roles model can support in a number of different ways: acting as an inspiration that aspires individuals to develop and fuels their engagement in learning (1.45, 1.46, 1.47); but also modelling behaviours which individuals can observe, reflect on, and learn from (1.46).

1.45	"Our HR Director … she's the one person that's made me think that I would like to do a Director role in the future … she's got a work life balance, she's got a family and she's just spot on with what she does … that's the sort of leader I want to be."
1.46	"She was just an absolutely inspirational woman, in terms of vision, values, the way that she operated. The way that she inspired people… it was about me modelling those behaviours … you always learned what the right behaviour was, by the way she did it … you always learned as she took it on, or as she took it forward"
1.47	"Our chair, for example, she is the company … there's something about people that inspire you, and that often inspires you then to go and develop yourself and do a bit more. … It challenges you to think, 'I want to do a better job and I need to do better, I need to push myself a bit more'."

Many of these different roles have been described in existing literature, including the creation and promotion of a learning environment and culture (Ellinger & Bostrom, 1999; Hirsch et al., 2004), providing resources (Coetzer, 2006) and acting as a role model (Margaryan et al., 2013). The accounts given by participants in this study, however, flesh out some of the ways in which managers create and promote a learning environment. Some of these ways have been discussed before, such as: coaching and guiding (Beattie, 2006; Ellinger & Bostrom, 1999), offering feedback (Ellinger & Bostrom, 1999; Hirsch et al., 2004), setting high standards (Ellinger & Bostrom, 1999), allowing others to make decisions (Ellinger & Bostrom, 1999). More novel, however, in this study's findings are the ways in which

managers sometimes encouraged employees, gave them confidence, or pushed them out of their comfort zone. Whereas some of these 'caring' behaviours are mentioned by Beattie (2006), there is limited existing discussion.

5.2 COLLEAGUES

Colleagues were the second group to be considered by participants, and most participants were able to give a number of examples of how colleagues affected their informal learning. Examples were provided around how colleagues provided appraisal support, with them often unintentionally being used as a benchmark. Colleagues were also a source of instrumental and informational support, sharing information and finds or often being a partner in informal learning. Colleagues were discussed in a number of ways, and many participants chose to distinguish between colleagues in their own team and colleagues elsewhere within the organisation.

Colleagues were reported by several participants to be easy reference points against whom they could benchmark their skills and knowledge (2.1). In some instances, this ***benchmarking*** turned into healthy ***competition***, driving employees to learn and develop to improve themselves and have some advantage over their colleagues (2.2, 2.3). This competition also meant that some employees copied learning ideas and opportunities taken up by their peers, in order to stay ahead (2.4).

However, colleagues often also compete for promotions, for reward and recognition, and for career advancement. Some colleagues may see information sharing, or supportive behaviours, as benefiting their colleagues with whom they are in competition, thereby harming their opportunities for advancement or reward. This effect was also observed in the earlier consideration of barriers to informal learning. This competition may sometimes mean that colleagues are reluctant to engage with colleagues, and may hinder their informal learning (2.5).

2.1	"Sometimes you benchmark yourself against [colleagues] and their performance to try and work towards that"
2.2	"Me and [my colleague] sort of used to argue about who was best at Excel … we did push each other quite a lot 'cause we always wanted to be the first"
2.3	"You always kind of want to be a little bit better than them or know something a bit more than they do"
2.4	"Probably team members I think it's obvious because we work in sport and is quite competitive so you know how I mention that one of the girls has just read a book and recommended that I'd read it is kind of like that, well actually she's read this and she is now employing a couple of things in her work that she's got from this book"
2.5	"Sometimes information is withheld from you to stop you from progressing … because they'd like to go for a position that is higher than mine"

As well as providing a motivational support, either directly or indirectly, colleagues were also able to support in ***instrumental or informational ways***, sharing information, experience and expertise (2.6, 2.7, 2.8, 2.9), offering work-related feedback (2.8), or sharing useful learning tools or opportunities they had found (2.8).

2.6	"If you know someone's done something before it's like how did you that, show me again, you know, you keep going back to them until you know, learn like to do it yourself, and then maybe show others
2.7	"The knowledge base on the team alone is brilliant. I mean you can ask a question, someone will answer that question. We've got people that are amazing on the systems. We've got people that are great with things like with SQL and Excel and different bits and bobs like that. So I mean we have team members that run training sessions as well like around macros and different things to do with Excel."
2.8	"We've got a very good team. We share a lot of information, we'll collaborate on projects, we'll give each other bits of feedback, you know, on work as it's emerging. We'll direct people to different resources - oh that's really good, or have you thought about that, type of thing."
2.9	"They're always there to help … when I was struggling with some of the system stuff, even though they've got their own work to do they would always stop, come and help me, show me, whatever they could give. It's like sharing best practice. If someone found out the shorter way to do something they will say I've found this way, try it this way it's a lot easier. Found this error, this is how you overcome it, but I've got to say one thing about the team and the people I know up there, they're like family."

There were several examples of how colleagues, in particular, were sometimes used for ***sense-checking***, with employees running ideas by colleagues to get their opinion or take on an issue, often in order to validate and reinforce what they already thought or knew, as one participant describes in their interview:

> "if you have a difference of opinion on how you think something should be handled or approached ... you can question yourself, and actually even though you're probably right, I probably go to them more for kind of checking that I'm right. You know, kind of like getting a bit of reinforcement" (2.10)

Colleagues were considered in a wide-ranging number of ways, and participants were encouraged to think about colleagues both inside and outside of their immediate team. Many participants gave example of how they had networked and developed relationships with ***colleagues in other areas of the organisation***, and offered examples of how these relationships supported their learning and development. In many cases, these individuals offered an opportunity to explore a different area of the business (2.11, 2.12), or to gain insights and learn new skills from others who may have different knowledge bases, backgrounds or skills (2.13, 2.14).

2.11	"I don't know about the energy services business, I don't know about our sales propositions, so I will learn about all of that through conversations that I have with colleagues"
2.12	"There's always aspects of business that are more attractive to you to understand … I've always worked in product but I've never worked in marketing so I take a lot of input from people that work in marketing because it supports the thing that I'm trying to drive towards"
2.13	"My peers within the leadership team have been very helpful as well. They're very different characters with different briefs … the Finance Director and Managing Director of

	the business side, I feel that I am learning some of the harder, financial business stuff from her. So I think people's inherent skills sets and understanding are very helpful. Elsewhere in the business, people have different levels of knowledge and different backgrounds, so I'm always looking to draw from that, and use that where I can."
2.14	"We've all got different skills and experiences … one of them used to be an events consultant, so when it came to planning the camp I went to him all the time just to learn about different processes and stuff, whereas is one of the girls has come from the schools network … she knows a lot about schools, I don't really know too much about that, so it's quite a nice opportunity to go in and ask her questions and things."

One of the key and unique features of colleagues is the fact that they're ***there at the right time*** (2.16, 2.17, 2.18), and are more likely to be around compared to managers (2.15). Many of the necessary times for informal learning occurred as part of one's day job and so colleagues were often the most readily available source of support, advice and expertise (2.16, 2.17). Feedback from colleagues may also be more salient than that from other groups of people, given the fact that they are one of the few groups that spend a large amount of work-time together with the employee and may have a well-rounded view of their behaviours across contexts and time periods (2.18).

2.15	"They probably support me more than your line manager, because they're around more"
2.16	"I learned more from people next to me, than I did in the classroom … I learn by shadowing, watching people, asking there and then while it's live"
2.17	"When I was on the phones … how do you find how to input a meter read? You've learned it on paper, but actually live on the system, and you've got a customer on the line shouting at you - it's, how do you do it … it's just asking the right question at the right time"
2.18	"We probably spend the first hour talking about people at work or how my job's going with different people. Then we always just go, 'actually in the meeting today you came across like this' or 'you acted like bit of an idiot today'."

5.3 DIRECT REPORTS

One particularly distinct group of colleagues is that of direct reports, those employees for whom the participant is responsible for managing. In previous research, Ito and Brotheridge (2005) found that the more employees managers have under their supervision, the more they participated in formal and informal learning activities. Indeed, in this instance, there were many examples of how this effect may come about, with direct reports supporting informal learning in a number of ways.

Firstly, the ***line management responsibility*** provided opportunities in itself, such as with direct reports asking questions (3.1), or management issues pushing the manager outside of their comfort zone. As one respondent states, "they're asking questions, so you have to go out and find, source the answers" (3.2). For some, the new challenge of managing people created its own opportunities for learning, throwing up difficult situations that the employee may need to learn to manage, or providing opportunities on which to reflect and develop (3.3, 3.4).

3.1	"I have an HR Manager that supports me in my role so if she's got a tough question we'll

	actually have a debate around it and come up with a solution between us so that works well."
3.3	"I did have a couple of apprentices who, obviously, were quite challenging in themselves. With the absence issues I actually had to dismiss someone, which was completely out of my comfort zone. I've learned a lot from that"
3.4	"I have quite high expectations for them and I think I often think about how I need to adapt my style to suit their learning … I try and take a step back quite a lot with those that I line manage to think about how I am in one to ones and in monthly reviews."

In several cases, employees gave examples of how they managed others who were ***more expert than themselves***, and how being a general manager of more specialist or technical staff provided opportunities for learning (3.5, 3.6, 3.7). In one instance, an employee spoke of how they relied on their reports to help them understand the broader context of the business and the organisational history and background that they themselves had not experienced (3.8).

3.5	"[My reports] support my learning; particularly the example would be around the Valuation Team that I manage because they have much more expertise in that than I have. I think the challenge there is managing that and how much… Not that I would hide the fact that there's things that I don't know but I'm mindful of what gets communicated but I do learn from them informally absolutely"
3.6	"In my secondment there was an administrator who we had battles with at the beginning. … I actually learnt a lot from her. I had to do a lot of policy paper and editing in that job, … we had to kind of edit them and write papers for government, and she really taught me about the kind of detail and her attention to detail was fantastic. … I learnt that from her, and she was obviously someone I managed."
3.7	"I've enjoyed working with my direct reports. All of them are expert in their areas of delivery, so I feel like I've learned a lot from them, and they've been generous around that. I haven't been afraid to show a lack of knowledge or just ask about a particular environment and so on."
3.8	"I think they're quite generous with filling me in on the parts of the business. Filling me on some of the, kind of historical stuff, filling me in on some of the, kind of relationship dynamics to navigate. Not just about the system bit internally within the organisation. They've been quite open and candid about that."

Managers also had other duties as part of their line management responsibility that could benefit them. As would be expected, in many cases managers were helping their own employees learn and develop, and there were several examples of where managers helping their reports with their learning also provided the opportunity for the managers to revaluate, validate and reinforce their learning (3.9. 3.10, 3.11).

3.9	"She constantly challenges my thinking. So I will present and have an idea and she'll be like, 'but what about this and what about this and what about this'? … She always thinks about it in a different perspective, she always voices what she thinks and there'll be things that she's just like 'yes, I get it', get on with it and there'll be things that she really challenges. And if she's challenging it, it makes me think, 'well she's challenging it for a reason so let me really understand that'".
3.10	"It's also somewhere to feed my knowledge back into, so it reinforces what I know"
3.11	"The refinement thing is kind of sense checking things with her and then getting a bit of a

	feel for if I've dropped maybe a clanger, or if there's a way of doing something I already know how to do, but sometimes somebody reads it and says, 'Why don't you do this?', and you think, 'well yeah, of course'".

Another unique feature of direct reports was that they provided a '***shortcut to learning'***. As a manager, individuals were able to direct the work and development of their reports, which could align with the manager's needs and desires. As a result, a manager is able to employ their reports to carry out learning on their behalf, as one participant illustrates:

> "if I wanted to do something I'll just say, go away find the best way you think to do that, come back and show me … he's doing my learning for me" (3.12)

That is not to say that direct reports do not also benefit from this kind of learning, with managers able to suggest avenues that would benefit their reports' development, and then learn from their reports' subsequent engagement in these activities. This is illustrated by another participant, who highlights this two-way relationship:

> "we learn things new from each other … through my own self learning I can direct him into things that I think would benefit his development and his career, but at the same time you … hear those things back that 'he's also gone on that journey and explored his own informal learning and thrown that back to me. So I think that's quite powerful.'" (3.13)

In a similar vein, a manager can learn informally through their reports' *formal* learning endeavours, as the interviewee below highlights with her direct report who is currently on a formal development scheme:

> "[A member of my team is] on a high potential programme at the moment ... so I'm learning loads from the experience and the journey that she's been on" (3.14)

In some cases, managers also offered examples of how they used their reports as ***guinea pigs***, on whom they could try out new ideas and experiment with different ways of managing:

> "with … the books that I'm reading, I'm like, 'Oh, I can try that on one of my direct reports'". (3.15)

Direct reports are in a slightly different situation to one's normal colleagues, in that one is directly responsible for them, being held accountable for their performance, conduct and development. As such, they can also hinder informal learning in that they take up time that could be used for learning, particularly with people management issues (3.16, 3.17), and may distract from one's own learning objectives (3.18).

3.16	"When you've got a team of direct reports that are taking your time up in other places then they hinder it for their peers, and they hinder it for you because you can't learn, you can't help your team learn, because you're getting stuck into admin stuff or all the non-sales related work that you have to pick up on a daily basis."
3.17	"Completing things like return-to-works, or stage reviews, or writing reports for stage reviews, which are time consuming. They are a necessity of the role, but it takes a lot of your time up when you could be spending it coaching, mentoring, listening, PDPs, one-to-ones, all that kind of stuff."
3.18	"[My reports] hinder my learning by taking up my time but at the same thing they're helping me to learn because I'm then in a different situation where I'm helping them, so they might come to me for advice which takes me away from my task where I could be learning something but actually I'm learning something else by helping them to learn, so it's me being their Line Manager, coaching them, showing them what to do, helping them with advice, but then I guess it's hindering what I could be doing for myself."

5.4 CLIENTS

Clients, or the recipients of one's work, emerged as a group who could influence informal learning efforts. Clients encompass a broad range of people, and in some cases referred to people external to the business, such as a buyer of a service or product, or in many cases, someone internal to the business. Internal clients were most applicable in areas such as HR, law and IT, where employees were often partnered with specific areas of the business or given particular projects, which they treated in a consultancy-like fashion. On the whole, the role of clients was indirect, with clients unintentionally supporting or hindering learning.

In some instances, clients can provide a ***motivation for learning***, as one participant explains when describing how they feel enthused by a particular's feedback, and how this fuels them on to want to grow and develop more so that they can continue to deliver to the client:

> "I'm enthused by it, I want to develop, I want to do very well because I don't want to let them down. So I ensure that I'm well-prepared or do further learning in terms of asking questions and feedback and all that kind of thing, and improving myself." (4.1)

The very nature of the client-employee relationship means that clients support employees' informal learning in a unique way. The client offers a form of feedback that may be more powerful and more salient than that coming from other sources, particularly as the success of most work will depend on the satisfaction of the client, as an interviewee highlights:

> "They're the key to the success of your business, and I think if you can listen to what your customers are telling you, you can learn an awful amount about yourself, your team and the business from suggestions and feedback." (4.2)

Employees do not just have to passively listen to their clients, however, and may actively ask questions of clients, which may help identify new areas for development, not only for the employee but also for the business:

> "you learn from your clients because you know what areas you need to work on and what's missing … if there's a new client, "can I do anything else?". So, you're always learning what else you can do" (4.3)

Other than the feedback and input that clients may have to give, ***the projects and work that clients offer*** can offer new challenges that push employees beyond their current boundaries and out of their comfort zone. In consultancy projects, this may be in terms of the questions and challenges that clients pose (4.4, 4.5, 4.6, 4.7), which then identifies gaps in the employee's knowledge that will need to be resolved through reactive learning.

4.4	"The clients are looking to us as the informed expert, that's why they're paying us to deliver … so there's the thing around not wanting to be perceived as uninformed or not having the knowledge. They're often asking the questions around the bit of technical or contractual legislative what have you … we don't know the answer, then it's about us going and getting that"
4.5	"Customers on the end of the phone … indirectly they can help because if they throw up an objection to something that you can't answer … you then have to go to your manager or someone to find out how you could have overcome it."
4.6	"The customers that we provide the service to ... dealing with queries that could be absolutely anything helps you learn, so it might mean that they ask you for something I'm not sure of and I have to go and seek advice from someone in my team"
4.7	"Current clients on the project …indirectly … help because they keep finding problems so I have to go and find out what the problem is and how to fix the problem and then tell them how to fix the problem. They're not directly helping me but they're finding ways for me to help myself."

Going further than just indirect support, several employees spoke of rather close relationships they had with their clients, and how some clients were openly supportive of their development and provided opportunities directly. As the participant below explains, the client may not have a selfless motive for this, but may perceive development to improve the product or service they are delivered:

> "If they see those benefits they will support you, they will support you learning and from that you'll be able to continue to learn based on their behaviours, their feedback, and their results." (4.8)

Clients were not just a source of support, however, and interviewees also spoke of instances where clients limited their informal learning. As discussed in the earlier 'barriers to informal learning' section, ***client demands tend to be prioritised above informal learning***, as outlined in the following account:

> "we're providing a service for them so they're paying us in essence to do that, it's hard to sort of dismiss any last minute requests that they might have, they can be quite demanding with certain things because they're the ones that are paying at the end of the day… that's a hindrance on my day to day work … if I've got other things

> that I do want to do in terms of extra development and learning I need to just crack on and do the thing that's come in" (4.9)

Those working in client-focused roles were especially influenced by their clients' demands and projects. One participant offers an example of how a ***project with limited freedom and opportunity*** for change can hinder informal learning:

> "some of our clients are very fixed in what they want and they don't allow you that, again, freedom to learn and progress as it might progress because they've got a fixed idea of what they want and that's what they want and they aren't going to take anything else." (4.10)

Similarly, the participant below discusses how clients and organisational partners dictate the direction of work and how this can sometimes narrow down the opportunities for development:

> "So you know, you set up a programme, you run it for a few years in schools and then you say right, where next, where do we take this programme, and that's where your learning comes in. So you talk to teachers, you talk to young people, you do a bit of research, you know, you try things out and that's all part of your learning because you try things out and things work, things don't work." (4.11)

In this example, the participant offers an example of how their client preferred to stay with the status quo, repeating previous work and not wanted to try out new things. This meant that the employee felt unable to stretch themselves outside of their comfort zone, and that this limited their ability to develop, learn and innovate.

5.5 SUBCONTRACTORS

Subcontractors are individuals or organisations who carry out paid work on behalf of the hiring organisation, usually for a specific task. Subcontractors were a source of support that came out in the interviews themselves, rather than being part of the originally theorised groups that formed part of the card deck.

One interviewee offers an example of how a subcontractor for their organisation supports their learning:

> "I asked them a lot of questions - not in the guise of I don't know what I'm doing, I'd say, "Oh can you just explain this to me or can you go through this in more detail" and just try to understand off of them how it works and how their approach would be and all that kind of stuff, how they work internally, understand their own challenges, understand where I can put pressure on and understand where their gaps are. So I've done that through asking a lot of questions." (5.1)

This form of learning mainly happened in the form of relationship management, with the employee developing their skills in the form or understanding how to establish, negotiate and maintain a commercial relationship with an outsourced partner. Nonetheless, some of the questions asked, such as "can you just explain this to me or can you go through this in more detail" also provide the opportunity to learn more about the specialised services that the subcontractor is offering.

Indeed, another employee illustrates this learning of specialised technical knowledge through the process of subcontracting out work:

> "one of my big challenges was my deficit in terms of technical understanding. So if we're employing them as a technical expert in a given area and you ask them to come up with a solution, they've got to convey that solution in the context of your contract. In doing so, you will get an understanding around what that technical solution is." (5.2)

An 'understanding around what that technical solution is' may offer several different ways to learn: either providing knowledge directly, but also by offering a starting point for further learning. For example, by picking up the terminology used as part of a technical solution, it may help with further independent exploration, offering suitable Google terms or more specific areas to read around.

5.6 SUPPLIERS

As with subcontractors, suppliers as a group which supports learning naturally arose from the interviews, and was not theorised a priori. Suppliers differ slightly from subcontractors in that, rather than carrying out end user services on behalf of the organisation, they are supplying goods or services primarily for the employing organisation.

Two interviewees specifically spoke about suppliers (6.1, 6.2), and in both cases they primarily focused on the external perspective that they can offer, especially around the state of the market and competitor organisations.

6.1	"Scott is an ex-supplier that I had at [my previous organisation] and he is essentially just a thought leader in his world. And I'll often pick the phone up to him to say what are you working on? I'm working on this what do you think and he's got that external perspective."
6.2	"So we have a consultancy who we work with … and I keep a reasonably close relationship with the guys in that business just to understand what state of the art is, and what other businesses maybe are doing in terms of innovation and the way that they're driving that order which helps me in my career."

Both accounts hint at a particularly important role of suppliers for individuals' learning. This external, broader perspective may offer a unique insight into the wider market and business sector. This information and discussion may be particularly important if employees are considering their career development and maintaining their employability for possible moves elsewhere within the sector.

Suppliers have a unique position, often having a high level viewing point that cuts across many organisations.

5.7 Learning and Development team

The role of the Learning and Development Team, or HR Team, in supporting informal learning was seen as somewhat limited by all of the participants. Participants reported that the L&D department was mainly focused on formal learning and training courses. Where the L&D team did support informal learning, as mentioned by two interviewees, was in providing some tools to facilitate informal learning. An interviewee offers an example of this role:

> "I think I'd probably draw on the L&D team more for the formal side of learning. But there has been some stuff that's come out of working with L&D around the Insights Discovery stuff. So they are sort of profiles about your own learning style, that's kind of given me some tools that I can then apply myself, in terms of my relationships with other people. And so how I work with people that have quite different default learning/communication styles, and so that's been quite handy. So that's probably another good example of maybe a formal activity that's kind of given me the tools to do a bit more informal stuff afterwards." (7.1)

5.8 Professional societies

Around one third of interviewees were members of a professional society, such as the Institute of Civil Engineers, Energy Institute, Chartered Institute of Personnel and Development, Chartered Institute of Marketing, and Institute of Gas Managers and Engineers.

Most of these participants said they did not engage regularly with their society, retaining their subscription out of habit or in order to retain their professional status and recognition. Of those who did report an influence on their learning, this came through events and newsletters delivered by the society.

Newsletters, in particular, were a prompt for informal learning, with newsletters and journals offering updates, links to news stories, and, as reported by one participant, keeping them "abreast of where the market was going".

One especially interesting area in which professional societies appear to support informal learning is in their provision of standards and frameworks for professional development. For example, one respondent discusses the specific criteria required for Chartership and need to maintain Continued Professional Development to maintain this status:

> "There would be quite specific criteria that you would have to meet … in order to remain a Chartered Civil Engineer and certainly coming up to applying to being a Chartered Civil Engineer there'd be quite a prescriptive learning and development, also skills and knowledge that you would need to acquire so they would be a big influence" (8.1)

The participant in this account refers to 'specific criteria' and 'prescriptive learning and development', alluding to the idea that many CPD programmes and

professional registrations will have a clear list of competencies that employees need to develop and maintain. These competency frameworks potentially have two ways to influence informal learning: providing direction for employees in terms of what they should be learning, and also offering an incentive to learn, in that employees must maintain these skills in order to retain their professional registration.

Another interviewee also discusses the role of standards in learning:

> "If you are part of a professional body or society there's an expectation of common goals, common interests. … I should know what standards we adhere to and the rest of us should know that as well because that way there is consistency especially if you're representing a body or society. .... I think if you are part of one of those the thing is key to make sure you are learning … the same thing as others." (8.2)

The participant makes a particularly interesting point about consistency and learning "the same thing as others". These common goals and interests, articulated through professional standards, may be important in that they offer a shared language, understanding and incentive for colleagues to work together and support each other.

That said, standards and regulations can often change and be updated, which, as one respondent mentions below, also requires you to keep on top of:

> "[I'm a member of the] Institute of Gas Engineers and Managers. And there's some technical learning that comes out of that … in the sense of technical papers, or standards, changes in documents. So the self-learning bit will be about reading those … they're interesting and relevant to my industry." (8.3)

5.9 FAMILY

Although relatively unexplored in the literature, family were identified by participants as a key supporter of informal learning, time and time again. Only one participant said that their family did not influence their learning, as they lived alone in a different city to their family and tended to keep issues to themselves. With most participants, the 'family' question prompt card was greeted with a resounding "definitely", "God, yes!", or enthusiastic head nod.

As explored earlier when discussing barriers to informal learning, time outside of work is highly important for informal learning. Many participants spoke about how limited time at work means that they have to engage in learning at home. As a result, it seems logical that one's family can have a large effect on one's informal learning.

Indeed, this was observed in interviews relating to this particular research question, in which participants offered examples of how family ***compete for time***, thereby limiting the amount of time that individuals can spend engaging in

informal learning activities, and creating a work-home conflict. As one participant mentions, childcare commitments can limit the time available for learning:

> "I've got an eleven-year-old son, so there's not a whole load of time outside work now to kind of do different things … if I had spare time, taking it away from being with him to learn is something that I don't want to swap" (9.1)

Similarly, home-life could also impact into work-time, with worrying thoughts crossing over and distracting one from work or learning.

> "I have got a family at home. I've got a little girl that needs feeding, needs changing, needs her books reading to, so it's always worrying because you don't want to just leave them with a babysitter and stuff. When you're at work your mind's always going to be like, 'I wonder if she's eaten, I wonder if she's alright' when they're left with people like that, but after school clubs and stuff I don't agree with it." (9.2)

Not only was time itself reported as a hindrance to learning, but family also have the potential to influence learning by their ***attitudes and approach to learning***. Given that many will participate in informal learning at home, these attitudes and opinions of family members may be particularly effective in stifling informal learning participation:

> "He doesn't always get what I do. He's very much a nine-to-five person, so when I'm working late, or if I'm listening to an audible book, or if I'm looking at TED, he's just like, 'What're you doing that for?' (9.3)

However, families are not all doom and gloom: while these home commitments may prove to be a hindrance, a supportive family can also help relieve the burdens of home life, indirectly supporting informal learning:

> "My husband's really good. … if you know that home's okay you've got more concentration to concentrate on what you're doing at work so that's why it helps with the learning. It's knowing that okay if I'm not with [my child] at least her dad's with her, which is another parent. He's looking after that aspect. I can carry on with what I'm doing." (9.4)

Families can also offer a ***motivation*** for employees to participate in informal learning, and several participants gave examples of how their families, including parents and children, acted as an inspiration for them to engage in learning in order to develop themselves (9.5, 9.6, 9.7).

9.5	"My parents and my wife's parents, they've all come from India in the 1960s and they've set up home here, set up businesses here and made a really good fist of it … with a massive language barrier … you look at them and you think, 'Wow, you've actually done it and all the barriers you've had to overcome.'"

9.6	"Just massive respect. So, I have respect for her [my mum] which, kind of, makes me respect what I do. So, yeah, she's a big part of my life. My dad as well, my dad's a really hard worker."
9.7	"My wife certainly sort of motivates me and more so really is with my little boy. I think since I've become a dad your whole outlook on why you're here and what you're doing is completely different. He's motivated me to do more with my life … to try and learn more things … it's the root of why I'm kind of pushing forward and striving forward … as a dad you want your little boy to be proud of you, and he's my best mate, do you know what I mean?"

Beyond just indirect or passive motivation, there were also several examples where family actively ***encouraged and built confidence*** in individuals (9.8, 9.9, 9.10, 9.11, 9.12). Confidence can aid learning in that employees may feel more able to step out of their comfort zone, try new things, or open themselves up to feedback.

9.8	"[my husband's] a very strong person. I have little belief in myself, sometimes, and it takes me a while to think, "Yes, I can do it.""
9.9	"[my husband's] a supporter in terms of supporting the … "You need to believe in yourself a lot more." - the confidence part"
9.10	"[my husband's] just unfailingly confident in me and I'm not in myself"
9.11	Matt is, yeah, he's always challenging me. 'Cause I can get quite lazy, 'cause I'm dyslexic, and I say, "Spelling?" And, he says, "Break it down." I say, "I don't want to break it down, just tell me the word!" "Break it down." So, after it's happened...he makes me think and challenge myself more when I'm being lazy
9.12	Yeah, I'm lucky in so far as my parents have always encouraged me to go out and find things to learn; they've always said, "You need to go over and above with things." My siblings are all doing well for themselves and…no, I have a lot of encouragement at home to find, yeah, just to embrace new opportunities. They always say, "Take any opportunity you can 'cause you'll need it in the future," if that makes sense.

Families also provided ***instrumental support*** in many cases, and there were examples of how families offered helpful advice and knowledge that could help individuals in their informal learning. Even though families often did not work in the same workplace, they could offer general advice about workplace and interpersonal issues (9.13, 9.14, 9.15). In many cases, family members themselves had expertise in particular areas, which they were then able to use to support the individual's informal learning (9.16, 9.17, 9.18).

General advice	
9.13	"We tend to share just general ideas. Because what you tend to find, a lot of work experiences, a lot of life experiences, overlap into your work."
9.14	"In terms of some of the more technical aspects, I suppose that's not there but they are good at maybe understanding some of the contextual sides of management and people management and that's handy."
9.15	"It's a bit weird working here, like no one really understands the ins and outs of what we do, which is why I probably go to friends in the sector to talk to them about it as opposed to family because as much as you can try and explain they don't really."
Specific knowledge	
9.16	"Excel!" My husband - I've got a new spreadsheet that I work on in Excel, and it's very complex, and I don't do Excel, so I have homework lessons with him, with a bottle of wine, on a Wednesday night, or a Thursday night now. Where we sit and he teaches me Excel."
9.17	"One daughter is in export sales and she helps me sometimes when I'm struggling with

	my PowerPoints … my son-in-law actually is so proficient at IT and stuff … sometimes when I'm struggling I'll say to him, 'I'll just pop over and can you help me with whatever?'"
9.18	"My uncle works in neuro-linguistic programming and he delivers a lot of CPD training for big corporates … I do run a lot by him around how I can develop a rapport with people, how to come across best"

As well as advice and the sharing of expertise, family and home life also offers the opportunity for transferable experiences:

> "Boundary setting with a child is not much different from boundary setting with a colleague or a learner, it's all the same principles. Being able to deal with conflict, or difficult conversations, and you know, whether it be adult to adult, parent to child, you know, conversations. From the little sense, into the other sense. But yeah, I've definitely learned things from my family that have made me consider how I respond in the workplace, so yeah. And sometimes, just observing how they interact as well, can be...you know, you can see, I don't know. Well I have two daughters, and sometimes they have some real arguments, or real fights, about the most meaningless things. And you think, well, what was that about, what was the catalyst, why did it happen, and it gets you to think about the root cause of things. And again, you can look at that in a work setting, when colleagues are having a disagreement. And actually, it's very similar things" (9.19)

One unique and common feature of family is their role in being used as an informal sounding board outside of the work environment (9.20, 9.21, 9.22, 9.23).

9.20	"I'll sometimes run things past my dad. 'How did you handle this, Dad, I've had this challenge today, what would you do?' "
9.21	"I was talking to my brother last night 'cause we were having a chat, we've both pretty much stepped up at the same time and had a change in managing to try to lead something so I bounce off him as well"
9.22	"For example, I had an agent cry on me, it wasn't my fault, but they just started crying. So, I went home thinking, "Oh damn!" I was really upset, not crying, I wasn't crying, but I thinking, "Oh, what'd happened? Why was she crying? Was it my fault?" So, I had that conversation with my dad"
9.23	"My brother-in-law is a director of Deloitte … my sister-in-law, she's a lawyer. They've all got quite a professional background so I'll often just get a sound board in that sense and use them as that."

Employees' partners, in particular, were often cited as a sounding board (9.24, 9.25, 9.26, 9.27). There were many instances in which partners worked through problems together, shared opinions, and in some cases, took on a coaching relationship.

9.24	"I'll … talk with my partner about work and we sound each other out about things, and work through it together"
9.25	"My wife is always a good foil … when you've got a particularly difficult issue at work, and you want a second opinion. She will always give a good balanced second opinion. Often it has counter-balanced my desire to get in there, and sort it out or take action. With seeing an alternative view, and taking more measured action, which has been very

	helpful over the years, particularly when dealing with staff and staff issues and so on"
9.26	"My husband, as I say he died four years ago now, but he was brilliant because I used to practise my speeches. You know, if I was doing a presentation, I'd practise my presentations on him. I learnt a lot from him."
9.27	"I'm constantly running around self-reflection and often it's conversations with my wife, who stills works in education … Either working through issues she has, or through issues I have, [there is] actually quite a good learning conversation we have, in terms of, exchanging information and reflecting scenarios, and coaching each other."

Family members also played a number of other unique roles, and were one of the more distinct groups compared to the others. Of the non-work sources, learning relationships with friends and groups outside work tend to be fairly similar to those relationships with those in the workplace. However, some of the unique characteristics of family support include their brutally honest feedback, their greater patience, and how, in several cases, family members were only able to offer a more general level of support.

The first unique feature that participants mentioned about their family is their ability to be ***brutally honest.*** Five interviewees specifically mentioned how they were more tolerant of feedback from their families (9.28, 9.29).

9.28	"It's the sort of thing that you have to accept from your mum, so anybody else you might feel slightly aggrieved. But if it's your mum you've just got to sort of swallow it"
9.29	"My mum's very good at saying to me, 'No, don't take no nonsense.' … it's coaching in the sense that if I'm having or support in the sense that if I'm having a bit of a gnarly time at work with somebody or something seems to be happening that I'm not comfortable that I'm reacting the right way to, sometimes I have a chat with my mum and she'll tell me to develop a bit of backbone"

One interviewee's account allows exploration of this point in greater depth, explaining the main difference between personal and professional sources of feedback:

> "you go home and then you talk about your work, your parents will always give you their views and opinions … but because that view and opinion is coming from someone that cares for you, even if it's a negative opinion or it's hard to take, you still reflect on that more than someone else because that person is more meaningful to you ... naturally you tend to sort of pay more attention to it. Professional feedback you leave at the door. Personal feedback you take to heart I think. To a certain extent the more human feelings involved in your learning the more likelihood is you're going to remember it." (9.30)

Family members were also described to be more tolerant than other support sources of those they were supporting. Parents and partners, in particular, were frequently described to be ***more patient and giving of time*** than other sources of support:

> "The difference is that my dad will give up a lot of his time to have long conversations with me, look at the different opportunities out there for me, and encourage me" (9.31)

The final unique role played by family members was in that they tended to be approached for their 'big picture", and offered a rounder view of the employee and so were better suited for longer-term guidance or career advice (9.32, 9.33, 9.34).

9.32	"As far as talking about career and learning, your family and friends know you best … they'll say "Well, of course not. That's not you."
9.33	"It's a different kind of support … I think with line manager and company and stuff, it's very much focussed on more functional towards work in most cases and I think with dad, if you wanted to you can have a bit of a wider conversation about your career and aspirations and interacting with people and that kinda stuff; it's more wider."
9.34	"It's difficult in a way to talk to my manager about where I see myself in a few years' time, because at the moment it doesn't necessarily mean it's going to be in this role that I'm in now. If I'm honest, I'd feel uncomfortable saying to her, 'Oh, I see myself being a team manager' because then I know I'll no longer work under her, I'd be no longer in her team, and it's almost as though I'm trying to move above her. Whereas my family only want to see me grow—and, as far as that goes, they want me to do as well as I can."

5.10 Friends

In a similar way to family and colleagues, friends tended to offer different perspectives and often had different skills upon which individuals could draw. However, many participants gave examples of how it was only specific friends who supported learning, largely those who shared similar educational, professional or work experiences (10.1, 10.2, 10.3, 10.4). These friends tended to help in ways such as suggesting learning opportunities (10.5, 10.6, 10.7, 10.8, 10.9), particularly drawing on their experiences in other organisations (10.5, 10.8). These friends tended to be valued because of their shared interests and values, and often their feedback meant more to the employee than feedback from other groups (10.9).

10.1	"Some go through very similar experiences in their careers that I'm going through, so it's that mutual understanding of things aren't easy or, 'Actually, have you tried doing this because I've had this scenario?'"
10.2	"I've got a few friends who are in similar mid-management type roles that I suppose effectively have the same challenges and have different perspectives … sometimes [we] catch up every now and then and talk about how things are going and what we're up to … you learn a little bit of something about how someone does something differently"
10.3	"Got a couple of friends who do very similar roles to what I do in different organisations. So [I] occasionally go, 'how do you do this?', 'what sort of…?', send a spread sheet and I send it back and vice versa"
10.4	"I do love my friends so I've got friends who hold down various different professional careers and we often describe experiences and what people have done and has worked well for them. "
10.5	"Lois, my friend I went away with at the weekend, I'm working on a new development experience and I just asked her what sort of experiences she's been on in her career and what's really made a difference and, she described one to me and I was like, 'brilliant that's exactly what I need.' Yes, that sort of thing, or recommending stuff to each other."
10.6	"The TED thing came from me going out for dinner with a girl friend a couple of weeks

	ago. She's a school teacher and she was like, 'Oh, you should look on TED … it's more word-of-mouth and they're the ones that kinda just feed things into me."
10.7	"Sometimes you kind of confide in friends about work to try and see what you can do or how they can help"
10.8	"Outside of work I've got some friends who I went to university with. And so in terms of sort of the watching videos, reading books, that sort of thing, they are much more interested in that … we would talk about what opportunities we get in work, coaching and mentoring, and lots of things they say I then bring back and see if I can do that and vice versa … it's just good to see what other organisations are doing."
10.9	"My friends are a big part of my life. … I think they help you reflect on your learning, give you suggestions, give you feedback on what they think your strengths and weaknesses are."

A unique position of friends was found to be the fact that they are ***external to the organisation***, and are not invested in decisions that need to be made (10.10, 10.11). Individuals tended to seek the advice and support of friends with topics that were more sensitive and when their work colleagues could not be impartial.

10.10	"When it comes to things … harder to talk about in the workplace … I draw on my friends more for if I know my boss isn't going to be able to have that conversation … or my colleagues aren't going to be able to"
10.11	"My boss is … working to a budget … colleagues it's difficult to discuss those things with … And so sometimes people that may be are in similar jobs, but in different organisations … you get a little bit of reassurance before you stick your foot in it.

As seen with colleagues, there was some element of ***competition and benchmarking***, with friends too being used a reference point for learning and development (10.12, 10.13):

10.12	"If you've got friends who are in the same mind set and who are doing the same kind of thing, they are like a benchmark for you to work towards and so you … wanna keep up in a sense. I think they're a great source of learning and motivation"
10.13	"I think because, being quite competitive … having friends that are also quite competitive, you always … want to be a little bit better than them or know something a bit more than they do"

One of the more interesting, and indeed unique, roles demonstrated by friends was that of 'pub chat' and 'friendly debate' (10.14, 10.15), with friends being used as a source of non-threatening debate and challenge, and chance to learn about other viewpoints and perspectives.

10.14	"I've got a friend that's studying to be a teacher … we like to argue with each other, not argue, debate about anything. That's interesting because you get to learn other people's points of views. I like debating things, that's quite fun."
10.15	"With friends you generally talk through a lot and I like to discuss and debate and question and that I do enjoy learning through that way. And the types of things that I learn so different perspectives, some what I'm experiencing and may be different ways to approach it, and different experiences as well"

Reviewing both the ways in which family support learning and the ways in which friends support learning, the two groups appear to rather distinct. Friends appear to be viewed rather similarly to colleagues, in that they provide another point of view and expertise and are sometimes seen as competition. Family, on the other

hand, have a much broader role in supporting learning, fulfilling more emotional support that isn't spoken about when participants discuss their friends. While existing quantitative literature has tended to group friends and family as one (e.g. Birdi et al., 1997; Maurer et al., 2003), there could be merit in measuring the support received from friends and family as separate.

5.11 GROUPS OUTSIDE WORK

Many interviewees recounted examples of how their group and community memberships outside work provided opportunities to learn work-relevant skills. There was a variety of groups in which individuals participated: from sports clubs and scouts and guides, to school governors and charity trustees.

Some purposely sought out opportunities to learn skills they needed for their work, as one participant mentions:

> "When I didn't get this job, one of the feedbacks was that they didn't think I had enough strategic experience … So, I've actually gone on as a trustee on a board on another organisation to get that … it's made me develop a bit more understanding about strategic work" (11.1)

Opportunities outside the workplace can lead to transferable learning. For example, the following participant talks about how their experience handling issues between teammates on the football pitch allowed him to learn how to handle similar situations in the workplace:

> "Two teammates … didn't want to play with each other. That relationship was tough …I had to address that issue as club captain ... I addressed that issue, and I've had that upstairs [in the call centre] as well … a few members don't want to work with each other, they don't want to sit next to each other … whatever I'd learnt there I brought it here" (11.2)

Some activities are more relevant and similar to work. For example, one interviewee highlights how their role as a school governor provides many learning opportunities:

> "I made a decision to be on the governing body of a primary school … in terms of how you manage the facility, its safety, in terms of staffing, in terms of budgets, in terms of how do you know learning is taking place, how do you introduce new ideas - the whole mechanism of a school is actually very, very similar to my job, and the job of our Academy. So the things I've been able to learn informally, as a volunteer, as a school governor, definitely have found their way into changes I've introduced in the workplace. It's been really valuable in that sense, I've learned an awful lot, you know, from that route" (11.3)

Similarly, in the account below, one participant discusses how her role in the church, playgroup and hockey group have provided opportunities for learning:

> "I am involved with the church. I've done a variety of volunteering and I think that's helped me in my role … I think sometimes we don't take enough into account in terms of what people do in their private lives and how that actually impacts in here … my whole communication skills side of things in terms of being chair of the playgroup, club captain of the hockey club … all that side of things massively helped my confidence and presentation in front of people … a lot of that being comfortable in that environment came from outside of work rather than in it … chairing both the playgroup and the hockey club, you come across difficult characters and you learn how to deal with those." (11.4)

Another interviewee highlights an important point, as argued earlier in the thesis, that work-life balance is important in offering the time to engage in learning opportunities outside of work. Organisations should be more receptive to this.

> "I'm a governor at a very challenging school that's in special measures at the moment … I've massively learnt in terms of the pressures that schools are under, understanding, and I think we are - and I've said this right from the word go from when I first joined the organisation and it's true of the teaching profession as well – we are very white middle class here and, you know, I have worked with some schools and seen, been on a number of exclusion hearings and when you hear about the background of some of the children you realise the challenges that there are out there. Because some of these kids do well just to get themselves to come to school, never mind do any learning. So from that point of view I think my role as a governor I've learnt a lot both formally and informally." (11.5)

Not only do the activities themselves provide opportunities to learn, but meeting new people can also provide contacts that can further support informal learning:

> "I think that's why social groups and networks are quite good because you already have that mechanism, so you meet someone that you probably wouldn't meet in your normal circle, who can probably help which is quite important. It's quite difficult for me 'cause my circle is not wide enough in terms of different people that you can talk to." (11.6)

For those working in narrow areas or with a limited number of colleagues, groups outside work may be especially important in developing a support network for learning. Organisations may be able to support employees in this way, perhaps by suggesting volunteering or society opportunities, or providing time off for those engaging in such activities.

5.12 People on social media

One source of support that emerged later in the interview process was that of 'social media', and one participant added 'social media' to the prompt card pack. Social media was not a major supporting factor, but participants did offer examples of how they found about opportunities and events through social media channels; found news articles, book recommendations and online videos; and engaged in online discussions or debates with other people. Networks referred to included Twitter, LinkedIn and Yammer (a work-based social media network that one organisation used internally).

5.13 Summary of themes

A summary of the roles that each support source was found to play is highlighted in Table 6.2. In this table, the specialist, or unique, features of support groups are also presented.

Support from	Roles played in informal learning	Specialist features
Managers	• Creating the right learning environment • Creating the right work environment • Pushing and encouraging out of the comfort zone • Encouraging and building confidence • Suggesting opportunities • Giving opportunities • Scheduling time or resources • Role modelling behaviours	• May only contact with finished work
Colleagues	• Benchmarking and competition • Sharing opportunities • Sharing expertise and knowledge	• Colleagues are there at the right time
Direct reports	• Managing people creates its own learning challenges • Managing people is time consuming • Managing specialists • Revaluating, validating and reinforcing learning • Shortcut to learning • Guinea pig	
Clients	• Motivating to perform • Providing feedback • Providing challenging work • Client demands can compete for time	• Particularly salient feedback
Subcontractors	• Instrumental learning through relationships	• Developing specialist knowledge
Suppliers	• Instrumental learning through relationships	• Offering an external perspective • Offering a high-level overview of the market or profession
L&D	• Providing tools to facilitate informal learning, e.g. formal learning,	

	personality psychometrics	
Professional societies	• Events and networking • Newsletters and updates • Providing standards and frameworks	
Family	• Competing for time and attention • Work-home conflicts • Inspiration and motivation • Encouraging and building confidence • Sharing general workplace advice • Sharing specialist knowledge and skills • Transferable experiences • Sounding board	• Brutally honest • More patient and giving of time • Rounded view and a 'career-oriented picture'
Friends	• Sharing similar experiences • Suggesting opportunities • Offering feedback and reflection • Competition and benchmarking • Pub chat and friendly debate	• External to the organisation and not invested in decisions
Groups outside work	• Transferable experiences • Meeting new people	• Often actively sought out
Social media	• Finding opportunities and events • Finding news articles, videos and book recommendations • Online discussions and debates	• Wide network

Table 6.2: the sources of support and the roles that they play in supporting an employee's development

On the whole, many of the roles described by participants were supportive roles, in which others' actions and behaviours aided the employee's informal learning. Very few of the support sources were described to hinder informal learning. The main support sources that were regularly said to hinder learning were one's line manager and one's family. There were plenty of examples of bad managers who damaged confidence, created a hostile work environment that didn't recognise or encourage learning, and who actively blocked learning opportunities and withheld resources. Families were often reported to compete for time and attention. To a lesser extent, there was some evidence of colleagues' hindering learning if they felt threatened and so withheld information, of clients who may indirectly hinder learning by limiting the scope of work projects, and of direct reports who compete for the time and attention of their manager.

Of the sources of support discussed, three stood out as being the most important: line managers, colleagues, and family. Each of these three groups were discussed in more detail, and for a longer amount of time, by most participants. In a select number of cases, however, groups outside work were also found to be a particularly key source of support, with participants able to offer quite detailed examples of how they had engaged with other organisations or groups in order to boost their learning and development. The importance of managers, colleagues and family perhaps explains why the current literature, both quantitative (e.g. Maurer et al., 2003) and qualitative, have tended to focus on these three groups.

Although included in the prompting card deck used during the interview, there were several sources of support for whom participants were unable to offer examples of how they supported or hindered informal learning. Although common in one of the organisations studied, trade unions played little role, with many participants saying that they were mainly a member of the trade union just in case things ever went wrong. Another group was that of religious communities. Several participants reported being a member of a religious community, but few thought that this community influenced their development. There was, however, some overlap: as these individuals often had friends in these religious communities who supported their learning, or the individuals volunteered within their community and were able to build transferable skills through their volunteering. Equality networks, such as a women's network, were also found to be of little importance in the interviews. While one of the organisations did have equality networks, few employees reported being members of them, and those who did felt that they did not support learning, but were there, like with trade unions, for when things go wrong.

Cutting across the different sources of support, several similarities and common roles emerged. The most common similarities were transferable experiences and knowledge, the broadening of experiences and exposure to different perspectives, and motivational aspects. Many of the support groups also had particularly distinctive elements. Colleagues, for example, stood out as the one group that would be there when individuals were faced with the need for reactive learning, responding to challenges and problems they could not deal with. Direct reports were also relatively distinct from others, in that they were a receptive group and the learner had control over and responsibility for their work, which meant that the learner could face challenges – both good and bad – but also direct their reports' learning to support their own. Family were also relatively unique in the role they played. As well as offering specialist knowledge in some cases, as many other groups did, families tended to be the only group that individuals spoke of offering a rounded, career-oriented view that transcended both work and general life. Families were thought to be more patient and giving of their time than others, and in several examples, were reported as being able to be brutally honest with their feedback and input.

Overall, this study offers many new insights to the topic of informal learning. Existing literature has failed to take into account many of the influences outside of work, such as family, friends, and social groups outside work. Yet, in this study, participants offered many examples of the important roles that these support sources played in their informal learning. In fact, participants who offered examples of how social groups outside work supported their learning had often actively sought out these opportunities to purposely broaden their skillset, knowledge and experience. The other major addition is in the consideration of the variety of work-based colleagues that may exist: including those inside and outside of one's work team, direct reports, clients, subcontractors and suppliers. Many of these groups also have distinct ways in which they supported learning: team members being there at the right time, colleagues from other areas of the business being important for longer-term development and for broadening experiences and perspectives, direct reports being able to be used as a shortcut to

learning, clients providing particularly salient feedback, and subcontractors and suppliers being used for their outside perspective and specialist knowledge or vantage point. Without considering colleagues as a diverse group, many of these roles may not have emerged.

6 SUMMARY

In this chapter, two research questions were considered: one identifying the barriers that individuals may perceive to hinder their informal learning, and the other exploring the roles that others play in supporting, or hindering, their informal learning.

The first research question identified three overarching themes to barriers: time and workload (extrinsic and intrinsic), personal factors (intrinsic) and the learning environment (extrinsic). Compared to existing work by Crouse et al. (2011), this categorisation was based on an in-depth consideration of participants' first-hand accounts, which allowed for the exploration of the *mechanisms* by which barriers may take effect. Several new barriers unique to informal learning emerged, and many nuanced effects of barriers were discussed.

The second question identified a number of roles that other people played, and demonstrated the important role that those outside work played, such as family, friends and social groups. Colleagues were also found to be a diverse and mixed crowd, and could be considered in terms of whether they were within or outside the learner's immediate team, or were direct reports, clients, subcontractors or suppliers. While some sources shared similar roles – such as transferable experiences, the sharing of knowledge, and motivation – others were more unique, such as the fact that colleagues were the only group that were often 'there at the right time' and the fact that family tended to offer brutally honest opinions and views, with these views and opinions typically more rounded and career-oriented than those provided by other support sources.

7. Quantitative research

1 SUMMARY

In this chapter, the second of the two core studies is considered, through from its design and implementation, to the analysis and interpretation of findings.

To recap on chapter 4, this chapter covers six research questions:

RQ3: Do individual differences (proactive personality, curiosity, Big Five, age, tenure) predict an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

Many behaviours arise from a combination of both individual and situational antecedents, and this first research question is concerned with testing the idea that individual differences predict employees' learning intentions and participation. The focus is primarily on personality traits and demographics that are general to an individual, rather than more proximal antecedents such as learning motivation. Proactive personality, curiosity, extroversion, openness to experience, agreeableness and conscientiousness are all theorised to have a positive relationship with learning intention and participation; and age, tenure and neuroticism are all hypothesised to have a negative relationship with learning intention and participation.

RQ4: Do situational aspects (autonomy, perceived support, time and role demands) predict an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

The second research question is concerned with the situational antecedents that are thought to be important in an employee's work environment. These situational antecedents are considered as one of two types: job-related characteristics or social support. Of the job-related characteristics, an individual's time and work demands are hypothesised to have a negative relationship with learning intention and participation, and the scheduling, decision-making and methods autonomy in an individual's job role are hypothesised to have a positive relationship with learning intention and participation. Social support, from one's organisation, line manager, colleagues and friends and family, are also theorised to have a positive relationship with learning intention and participation.

RQ5: Which of these individual differences and situational aspects are most important in predicting an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

A wide range of antecedents have been hypothesised to predict both informal and formal learning participation, but this large list of potential factors presents difficulties in practice, overwhelming both employees and their employers. No work to date has hypothesised the relative importance of the predictors. Of the factors suggested for this study, it is hypothesised that personality factors will be

more important than situational factors in predicting both learning intention and learning participation, given the idea that learning participation requires a basis of personal agency and desire. Of the personality characteristics, it is hypothesised that curiosity and proactive personality are particularly important predictors, over and above the Big Five, given that these traits are more narrow and specific to the outcome variables in question. Of the situation variables, it is hypothesised that, given the wealth of previous research, that time and work demands is the key limiting factor of both informal and formal learning. The support antecedents considered are hypothesised to have different effects between intention, informal learning and formal learning: peer support being most relevant, compared to other support sources, in predicting informal learning; line manager and organisational support most relevant in predicting formal learning; and all types being similarly important in predicting learning intention.

RQ6: Which of the personality and situational antecedents studied are mediated by intention to develop in predicting (a) informal learning participation, and (b) formal learning participation?

Antecedents can influence learning participation in two ways: with planned learning participation being mediated by development intention; or with unplanned learning participation not being mediated, and being directly affected by the antecedent. It is hypothesised that different antecedents may be mediated in different ways, with personality and social support acting through both routes, and so partially mediated by intention; and the more physical-structural situational constraints such as autonomy and time, only affecting participation directly, and so not mediated by intention.

RQ7: Are there differences in informal learning participation, formal learning participation, and intention to engage in learning (a) between home-workers and office-workers; and (b) between managers and non-managers?

Learning participation and intentions may differ between different groups of employees. A growing group of interest is home-workers, given the increase in home-working over the last decade. A common distinction is also drawn between those in management and non-management roles, which was also highlighted by the organisation sampled in this study. It is hypothesised that there are some differences in learning intention and participation between home-workers and office-workers, and between managers and non-managers.

It is expected that, while there are no differences in formal learning or development intentions between home-workers and office-workers, there will be a significant difference in informal learning participation between office-workers and home-workers. Often in a work environment, surrounded by colleagues from whom they can learn, it expected that office-workers will participate in more informal learning than home-workers.

In terms of the differences between managers and non-managers, previous studies would suggest that managers would participate in more learning than non-managers. Given that those higher in the organisation may have greater access to opportunities, more autonomy, and may typically be of a higher

educational level or with greater career ambition, it is hypothesised that managers will have demonstrate greater informal and formal learning participation, as well as development intention, than non-managers.

RQ8: Do individual differences and situational factors predict informal learning participation, formal learning participation, and intention to engage in learning in different ways for (a) home-workers and office-workers, and (b) managers and non-managers?

When supporting employees, organisations should not necessarily consider all of their employees as homogenous, and it may be that different groups' learning is fuelled by different mixes of antecedents.

For example, home-workers' informal learning may be more readily influenced by non-work support than office-workers', whereas office-workers' informal learning may be more readily influenced by their colleagues than home-workers'; in both cases, these are the individuals who are most likely to be in the individual's work environment. For home-workers, it may be that having a more supportive line manager or more supportive organisational policies is all the more important given that they are not able to benefit from incidental opportunities in the office environment.

For non-managers, who are perhaps more strained in terms of opportunity than those in management positions, it may be that personality traits are able to have less effect on informal and formal learning participation.

2 METHODS

This section outlines the methods used in the second study, including the survey design and measures, information on the sample, and the data collection and analysis procedures.

2.1 SURVEY DESIGN AND MEASURES

Given the nature of the research questions, a number of existing quantitative measures were collated as part of a questionnaire. The participating organisation was offered this questionnaire in both a pen-and-paper and online form, but opted for an online version as all of their employees have access to the internet provided by the organisation.

The survey was designed with its online nature in mind, and many measures were trimmed so that the questionnaire could be easily completed in no more than 20 minutes. The survey was piloted with a small group within the organisation, and feedback was provided by both learning and development staff and employee representatives from different professions across the organisation. The full survey is included in the appendix.

2.1.1 Big Five

The Big Five – Neuroticism, Extroversion, Openness to Experience, Agreeableness and Conscientiousness – were measured using Goldberg et al.'s (2006)

International Personality Item Pool (IPIP) measure. This measure is similar to the extensively validated NEO-PI-R but is in the public domain and so available free-of-charge to researchers. The IPIP version is regularly used in academic-led research.

Each of the Big Five traits were measured using ten scale items, five of which were reverse coded. Respondents were asked to rate the extent to which they believed the items described themselves, with responses on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

All five of the trait scales exhibited a good internal consistency: Neuroticism (α = .858); Extroversion (α = .868), Openness to Experience (α = .764), Agreeableness (α = .746), and Conscientiousness (α = .821).

2.1.2 Proactive personality

Proactive personality was measured using six items from Bateman and Crant's (1993) original scale. The six highest loading items were selected from Seibert, Crant and Kraimer's (1999) 10-item version; three items corresponding to the sub-facet of identifying opportunities, and three items corresponding to the sub-facet of acting on these opportunities. A typical item is "I am always looking for better ways to do things".

Respondents were asked to rate the extent to which they believed the items described themselves, with responses on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The measure demonstrated a good internal consistency (α = .839).

2.1.3 Trait curiosity

Six items were used from the Curiosity and Exploration Inventory II (CEI-II, Kashdan *et al.*, 2009). The CEI-II is a ten-item measure of trait curiosity, a trait defined as recognising, embracing, and seeking out knowledge and new experiences. The measure is made of two dimensions: *stretching*, the motivation to seek knowledge and new experiences; and *embracing*, a general willingness to embrace the novel, uncertain and unpredictable nature of everyday life.

An example stretching item is "I actively seek as much information as I can in new situations", and an example embracing item is "Everywhere I go, I am out looking for new things or experiences".

Although the full scale consists of ten items, only six items were used in this research, with the three highest loading factors for each of the scale sub-factors (stretching and embracing) chosen. Respondents were asked to rate the extent to which they believed the items described themselves, with responses on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scale showed a good internal consistency (α = .866).

2.1.4 General demographics

General demographic information was collected from respondents, including gender, age, tenure in current job role, and tenure in the organisation.

Information about the area of the business and the job role that the employee worked in was also collected.

2.1.5 Support for learning and development

A four-factor structure of support was used, based on previous work by Maurer et al. (2003). This structure consisted of non-work support (from friends and family; α = .79), colleague support (α = .79), supervisor support (α = .86), and organisational resources and policies (α = .80). For each of the four support aspects, three items were adapted from Maurer et al.'s (2003) measures. Example items include: "My coworkers encourage me to believe that I can learn and improve at work" and "My line manager is supportive of my efforts to improve my work skills".

The four-factor structure of the support measures was tested by confirmatory factor analysis, $\chi^2(48) = 294.551$, $p < .01$; RMSEA = .051; CFI = .978; SRMR = .025. Most fit indices met Hu and Bentler's (1999) cut-off for a good model, with RMSEA below .06, CFI above .95 and SRMR less than .10. Although the chi-squared test was significant, partly expected given the large sample size (Kelloway, 2015), the chi-squared statistic for the theorised model was lower than that of other models (all *p*s < .01), including a one factor model, $\chi^2(60) = 8301.138$, $p < .01$; RMSEA = .265; CFI = .262; SRMR = .306.

For each of the support sub-scales, employees were asked to rate the extent to which they agree with each of the statements, using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Whilst these measures are subjective and only indicate employees' perceptions of support, it is likely that perceptions of support rather than actual support will be more salient in predicting development participation. Although an actual measure of support would also be beneficial, it would be difficult to take an objective and quantifiable measure of support on individual levels, especially within a reasonable timeframe and with the organisational access available.

2.1.6 Work and time demands

For work and time demands, four of Noe and Wilk's (1993) items were used (α = .852), which assessed the extent to which employees perceived their workload and time opportunities to limit their ability to participate in development abilities. Participants responded to each item using a 5-point scale, from 1 (strongly disagree) to 5 (strongly agree). An example item is: "On the job I have so much work to do that it makes it difficult for me to participate in learning and development opportunities".

2.1.7 Autonomy

Autonomy was measured using items from the Work Design Questionnaire (WDQ; Morgeson & Humphrey, 2006). The WDQ is a comprehensive measure of assessing job design and includes measures for three aspects of autonomy: the autonomy to make decisions, to choose one's work methods, and to schedule one's work. Each of these three aspects was measured using three items, and each of the decision-making (α = .875), methods (α =.874) and scheduling (α

=.878) scales were of a good internal consistency. Respondents rated their job on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree), answering items such as "Allow you to make a lot of decisions on your own" (decision-making autonomy), "Allow you to decide on your own how to go about doing your work" (work methods autonomy), and "Allow you to decide on the order in which things are done on the job" (scheduling autonomy).

2.1.8 Intention to develop

Three items from Hurtz and William's (2009) intentions to participate (desire) scale were used (α = .816). The desire to develop items, rather than self-prediction of development participation or perceived obligation to develop items, were chosen given the research aims. Respondents rated statements on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree), with a typical item being "I want to participate in employee development activities".

2.1.9 Learning activity participation

Participants were asked to self-report on the frequency of their participation in a number of learning activities. Participation was measured for six groups of learning activities: the informal activities of 'learning by oneself' (4 items), 'learning through trial-and-error' (3 items), 'learning through job experiences' (3 items), 'learning through feedback' (3 items) and 'learning through others' (4 items); and a general 'formal learning' group (3 items).

This taxonomy of learning activities was adapted from earlier work by Noe *et al.* (1993), Hurtz and Williams (2009), and Noe *et al.* (2013). Based on the qualitative work, earlier quantitative work, literature review, and discussion with experts, it was considered that neither Hurtz and Williams' and Noe *et al*.'s scales fully captured the range of informal and formal activities in which employees may participate. As such, the final measure integrated higher order groups from both Noe's (1997) theorised grouping of development activities and Noe's (2013) theorised grouping of informal learning activities. The items were adapted from Hurtz & Williams' (2009) 16-item measure of development activities and Noe et al.'s (2013) 9-item measure of informal learning.

The factor structure of the learning activity taxonomy was tested by a confirmatory factor analysis, $\chi^2(155) = 742.331$, $p < .01$; RMSEA = .044; CFI = .954; SRMR = .034. Most fit indices met Hu and Bentler's (1999) cut-off for a good model, with RMSEA below .06, CFI above .95 and SRMR less than .10. Although the chi-squared test was significant, partly expected given the large sample size, this test statistic for the theorised model was lower than that of other models, including a one factor model, $\chi^2(60) = 8878.110$, $p < .01$; RMSEA = .163; CFI = .274; SRMR = .241.

The items measuring the different activity types were presented underneath a heading of 'your participation in learning and development activities', and underneath a question stem of 'Thinking of the past year, how frequently have you participated in each of the following activities so as to improve your job performance or career?'. This question stem repeated every four-to-five questions. The question encouraged respondents to consider their participation

over the past year so as to anchor their thinking in terms of actual participation, and included 'to improve your job performance or career' in support of the learning definition used in the thesis and outlined in Chapter 2.

The response options were carefully considered so as to minimise the possibility of self-report biases. While objective measures of participation in informal learning activities are desirable, many of the activities in which employees participate are not observable at the organisational level, and so must be collected through self-report (Birdi, Allan & Warr, 1997). Self-report, however, may be subject to problems as individuals may differ in their perceptions of what constitutes high or low levels of learning participation, and so measures that use general high-low scales (e.g. Noe *et al.,* 2013) may suffer from this effect. Such measures, unanchored in behaviours, may also encourage idealised, rather than actual, self-reports of learning behaviours.

To combat these self-report biases, objective, quantifiable response options were chosen, asking employees to indicate how often they have participated in certain learning activities over the course of the past year. Responses were given on a scale from 0 to 7, with each response labelled with a frequency of participation ranging from "never" or "none", depending on the type of activity, through to "once or more per day" or "seven times or more". The full range of categories and responses are illustrated in the questionnaire in the appendix.

This self-report measure allowed exploration of a wide array of development, including more informal development activities not seen by organisations and supervisors. The objective and quantifiable response options combat the potential problem that employees may differ in their idea of what constitutes high levels of development. For example, individuals high in proactive personality may perceive regular and frequent development to be once per day; whereas those low in proactive personality may perceive the same development to be once per month.

2.1.10 Open-ended questions

The questionnaire included an open-ended question at the end to provide further data in answering Research Question 1. The question asked "What, if anything, hinders your ability to participate in informal learning activities?". This question was added part-way through data collection, and so was only shown to around 900 respondents.

2.2 Sample and Organisational Context

1,811 employees of a single organisation participated in the survey. 61% of the respondents were male, 38% were female, and 10 respondents preferred to identify in a different way. The organisation from which employees were selected was a large, multinational telecoms group, made up a number of different sub-businesses, professions and geographic sites.

The organisation is broken down into three faculties, all of which were well represented in the survey responses. *Customer First*, including professions such as contact centre, service management, and sales, had 29% of responses; *Business*, including professions such as HR, finance, and project management, had 40% of

responses; and *Technical*, including professions such as field engineering, architecture and solution design, and network engineering, had 31% of responses. Across the professions, 85% reported they mainly work at a desk; 25% reported spending most of their day working in the field at a non-company site; 20% reported working in a contact centre; and 1% were on an apprenticeship.

93% of respondents worked primarily in the UK, with the remainder working primarily in Europe (3%), North America (1%), and Asia (2%). There was representation of employees across job grades, with 34.8% in 'team member' roles, 63.5% in management roles, and 1.7% in executive roles.

The sample was broadly representative of the organisational population, with our sample exhibiting a marginal skew towards female participants and younger and less tenured participants compared to the population.

Given the method of distribution, an exact response rate is difficult to ascertain. HR Business Partners within the organisation had choice as to whether they promoted the survey within their business areas, and in many cases, there were reports where line managers had picked up wind of the survey from elsewhere else and then circulated the link around their teams. The organisation's estimate, with the help of site analytics, was that the survey details on the organisation's intranet were viewed by 20,000 people, giving a response rate of 9%. Compared to the employee population of the whole organisation, the response rate is 2%. Of those who clicked the link to the survey, 86% completed the questionnaire to the end, whereas 14% closed the questionnaire before completion.

The research project was distributed and championed by the organisation's "Academy", a new group-level initiative designed to facilitate and promote 70:20:10 learning (where 70% of learning is focussed on experiential learning; 20% on social learning; and 10% on formal learning) across the business, especially across traditional work boundaries.

2.3 PROCEDURE

2.3.1 Data collection

The survey was administered as an online survey through the online platform, Qualtrics. Qualtrics offers an easy-to-use, reliable and secure platform for designing and distributing questionnaires, and offers a data export option ready for statistical software such as SPSS. The survey platform prompted participants to complete any missing responses, but participants could choose not to answer any particular question by dismissing this prompt and continuing to submit the survey. Questions were generally grouped into categories: personality, job characteristics, support, and learning participation, but the individual questions were randomised for each survey.

The Learning and Development team in the organisation was offered a general email link to the survey, which they distributed amongst their employees. Many individual line managers championed the survey within their teams. The survey was available online for one month in Summer 2015.

As an incentive to participate, respondents were offered the option of an individualised feedback report, a six-page PDF that offered general learning guidance, their norm-referenced Big Five traits, their participation in six types of learning activity benchmarked against all other respondents, and a guided personal development planner.

2.3.2 Data analysis

Quantitative data were analysed using IBM SPSS 22. Prior to analysis, all data were screened to check for assumptions of normality, linearity and equality of variance as necessary, with distributions checked for kurtosis and skewness. Scatterplots and boxplots were used to check for impossible values and outliers, and prior to each individual analysis, data were checked to ensure the tests' assumptions were met. No adjustments for any variable were needed, and no cases were excluded from the analyses. The survey platform prompted participants to complete any missing responses, and so missing values were not a problem in the final dataset.

3 RESULTS

This section presents the outcomes of statistical analyses designed to answer each of the hypotheses listed at the beginning of the chapter. Descriptive statistics are presented to illustrate the general shape of the dataset, and then multiple regressions are employed to assess the factors that predict intention to develop, and participation in informal and formal learning activities. Here, multiple regression models with personality factors alone and situational factors alone are presented first, so as to offer a fair comparison with previous work that has studied such factors. Differences between occupational groups and home-workers and office-workers are then explored, both in terms of participation levels in learning activities, and in terms of the predictors that underlie this participation.

3.1 DESCRIPTIVE STATISTICS

Means and standard deviations for all variables are illustrated in Table 7.1. According to our contact person at the organisation, the sample is broadly representative of the overall organisation, with mean age and organisation tenure broadly similar to the population means ($\mu_{age} \approx 46$, $\mu_{tenure} \approx 24$).

		Mean	SD
Demographics	Age	44.48	10.07
	Tenure (organisation)	18.26	12.10
	Tenure (job)	4.28	5.11
Big Five	Neuroticism	2.53	0.75
	Extroversion	3.33	0.75
	Openness to Experience	3.70	0.60
	Agreeableness	3.93	0.52
	Conscientiousness	3.89	0.62
Other personality	Proactive personality	5.20	0.94
	Curiosity	5.05	1.10
Support	Overall	3.64	0.63
	Family and friends	3.69	0.74
	Colleagues	3.57	0.75
	Line manager	3.57	0.96
	Organisational policies and resources	3.73	0.85
Autonomy	Overall	3.94	0.83
	Decision making	3.86	0.89
	Methods	3.93	0.90
	Scheduling	4.02	0.89
Other situational	Work and time demands	3.20	0.95
Development participation	Intention to develop	5.80	1.05
	Informal learning	4.40	1.33
	Formal learning	2.44	1.07

Table 7.1: means and standard deviations for key variables, N = 1,811

Age, job tenure and organisational tenure were used as control variables throughout all analyses. Regression models testing their effect were significant for the dependent variables of informal learning, R^2 = .074, F = 47.80, p < .001, formal learning, R^2 = .034, F = 21.54, p < .001, and intention to develop, R^2 = .093, F = 61.56, p < .001.

The correlations between variables are shown in Table 7.2.

Correlations are notably high between variables measuring the same general factor: such as with the three types of autonomy (r_{max} = .82) or the four types of support (r_{max} = .64). The correlation between proactive personality and curiosity is also notably high, r = .72. While these might raise questions about the possibility of multicollinearity, the variance inflation factor (VIF) was never found to be a concern, with all VIF values below the most conservative cut-off of 2.5 (O'Brien, 2007), except for the autonomy variables, which tended to exhibit a VIF between 3 and 4.5. All VIF values were below the recommended cut-off of 10 (Menard, 1995; Kennedy, 1992), above which there would be a potential multicollinearity problem.

Also notable are the relatively high inter-correlations between several of the Big Five variables. These inter-correlations are, however, regularly seen in other studies, especially as the Big Five are not orthogonal factors. The inter-correlations could relate to the idea that the Big Five may together form part of a

General Factor of Personality (Linden, Nijenhuis & Bakker, 2010), and may also hint at the social desirability biases inherent in the Big Five.

Exploring the correlations between outcome variables, informal learning and formal learning are strongly correlated, $r(1789) = .50$, $p < .001$, and there is a moderate correlation between intention to develop and informal learning, $r(1805) = .40$, $p < .001$. There is a weaker, but still significant, correlation between formal learning and intention to develop, $r(1789) = .22$, $p < .001$.

The zero-order correlations between predictor variables and outcome variables were similar for both the intention to develop and informal learning, with correlations for informal learning being marginally smaller than those with intention to develop. The largest correlations were for curiosity, $r_{int}(1807) = .60$, $p < .001$, $r_{inf}(1805) = .47$, $p < .001$, proactive personality, $r_{int}(1807) = .51$, $p < .001$, $r_{inf}(1805) = .44$, $p < .001$, extroversion, $r_{int}(1807) = .38$, $p < .001$, $r_{inf}(1805) = .31$, $p < .001$, and support from family and friends, $r_{int}(1803) = .37$, $p < .001$, $r_{inf}(1801) = .34$, $p < .001$. Correlations of predictors with formal learning were notably weaker than with intention to develop or informal learning.

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Big Five	**1**	Neuroticism																				
	2	Extroversion	-.38																			
	3	Openness to Exp.	-.14	.29																		
	4	Agreeableness	-.42	.15	.13																	
	5	Conscientiousness	-.39	.29	.15	.28																
Other traits	**6**	Curiosity	-.39	.50	.38	.13	.31															
	7	Proactive personality	-.30	.48	.37	.06	.37	.72														
Autonomy	**8**	Decision-making	-.19	.14	.08	.15	.17	.18	.19													
	9	Methods	-.20	.15	.07	.19	.18	.17	.18	.82												
	10	Scheduling	-.19	.12	.08	.19	.17	.12	.16	.73	.82											
Time/work	**11**	Work/time demands	.25	-.23	-.13	-.17	-.14	-.23	-.17	-.27	-.28	-.25										
Support	**12**	Family and friends	-.19	.29	.24	.15	.19	.36	.37	.12	.14	.13	-.24									
	13	Colleagues	-.21	.20	.14	.22	.12	.19	.19	.31	.29	.27	-.34	.40								
	14	Line manager	-.19	.14	.10	.19	.11	.15	.14	.38	.35	.32	-.49	.26	.56							
	15	Organisation	-.19	.15	.07	.24	.11	.12	.13	.40	.38	.35	-.40	.19	.53	.64						
Demographics	**16**	Age	-.01	-.12	-.04	.04	.03	-.18	-.13	-.02	-.04	-.01	.08	-.27	-.12	-.10	-.04					
	17	Tenure - job	.01	-.07	-.06	-.08	.01	-.12	-.10	-.10	-.11	-.11	.13	-.17	-.17	-.14	-.18	.30				
	18	Tenure - organisation	-.02	-.12	-.09	.05	.03	-.20	-.14	.01	-.01	.01	.05	-.23	-.06	-.03	.01	.73	.30			
Outcomes	**19**	Formal learning	-.10	.18	.14	.01	.09	.26	.23	.02	.00	.00	-.21	.21	.18	.22	.17	-.18	-.09	-.16		
	20	Informal learning	-.15	.31	.26	.07	.20	.47	.44	.12	.07	.03	-.26	.34	.28	.23	.15	-.24	-.17	-.24	.50	
	21	Intention to develop	-.24	.38	.29	.20	.24	.60	.51	.16	.16	.15	-.20	.37	.22	.16	.17	-.27	-.17	-.28	.22	.40

Table 7.2: Correlations between all study variables. Generally, $r > |.045|$ has $p < .05$; $r > |.055|$ has $p < .01$. $N = 1{,}811$.
Highlights pinpoint effect size, with light shading showing a medium effect size, $r > |.30|$, and darker shading showing a large effect size, $r > |.50|$.

3.2 PERSONALITY VARIABLES

3.2.1 Regression analysis

Three regression analyses were carried out to determine the statistical effect of the Big Five, proactive personality and curiosity, alongside the control variables, on informal learning participation, formal learning participation, and intention to develop. A summary of the effects of personality on the three dependent variables is shown in Table 7.3.

	Informal	**Formal**	**Intention**
Age	– 0.11 **	– 0.12 **	– 0.09 **
Tenure - job	– 0.06 **	– 0.02	– 0.04
Tenure - organisation	– 0.06	– 0.01	– 0.10 **
Neuroticism	0.06 *	0.00	0.05 *
Extroversion	0.05 *	0.05	0.07 **
Openness to Experience	0.07 **	0.04	0.03
Agreeableness	0.02	– 0.02	0.14 **
Conscientiousness	0.05 *	0.01	0.03
Proactive personality	0.18 **	0.07	0.15 **
Curiosity	0.26 **	0.14 **	0.40 **
R^2	.283 **	.091 **	.427 **
F	70.39	18.43	133.61

Table 7.3: standardised regression coefficients (β) for a regression model with personality factors as predictors of informal learning participation, formal learning participation, and intention to develop. * p < .05; ** p < .01; *N* = 1,811

Most personality factors are significant predictors of an individual's intention to develop, $R^2 = .427$, $F(1799) = 133.61$, $p < .001$, with trait curiosity in particular having a strong positive relationship with intention, $\beta = 0.40$, $t(1799) = 14.08$, $p < .001$. Only openness to experience and conscientiousness are found not to have a significant effect.

The effect on informal learning is similar, $R^2 = .283$, $F(1799) = 70.39$, $p < .001$, with the personality model accounting for 28% of the variance in learning participation. Curiosity, $\beta = 0.26$, $t(1799) = 8.18$, $p < .001$, and proactive personality, $\beta = 0.18$, $t(1799) = 5.64$, $p < .001$, again are the most important predictors, both with a rather modest effect, with those higher in trait curiosity and proactive personality participating in more informal learning.

However, there is a markedly different effect of personality on formal learning, with fewer of the personality traits holding a relationship and the model only explaining 9% of the variance in learning participation. Here, only age and curiosity relate to formal learning participation.

3.2.2 Incremental variance explained by trait curiosity and proactive personality

Although trait curiosity and proactive personality have been shown to overlap with the Big Five, they have also been found to be distinct. Indeed, this is the case

when regressing curiosity, R^2 = .365, F = 208.55, p < .001, and proactive personality, R^2 = .352, F = 197.40, p < .001, on to the Big Five traits. The Big Five traits only account for 36% of the variance of proactive personality and 37% of the variance of trait curiosity.

Compared to a baseline model of the Big Five traits as predictors of informal learning participation, a model adding proactive personality accounts for more variance, ΔR^2 = .081, $\Delta F(1,1800)$ = 185.58, p < .001, as does a model with curiosity added, ΔR^2 = .103, $\Delta F(1,1800)$ = 245.11, p < .001. A model with both proactive personality and curiosity, as well as the Big Five, accounts for more variance than models with just the Big Five and proactive personality alone, ΔR^2 = .037, $\Delta F(1,1799)$ = 88.72, p < .001, and the Big Five and curiosity alone, ΔR^2 = .014, $\Delta F(1,1800)$ = 33.77, p < .001.

3.3 Situational Variables

3.3.1 Regression analysis

Similar to the analysis of the personality variables, three regression analyses tested the statistical effects of the situational variables and control variables on informal and formal learning participation, and intention to develop. Predictor variables included the four types of interpersonal support; the three types of autonomy; and general work and time demands. A summary of the effects of the situational variables on the three dependent variables is shown in Table 7.4.

	Informal	**Formal**	**Intention**
Age	– 0.04	– 0.08 *	– 0.05
Tenure - job	– 0.05 *	0.00	– 0.03
Tenure - organisation	– 0.13 **	– 0.06	– 0.17 **
Support - family	0.21 **	0.13 **	0.28 **
Support - colleagues	0.13 **	0.02	0.02
Support - line manager	0.04	0.11 **	– 0.05 *
Support - organisation	– 0.04	0.07 *	0.06
Autonomy - decision making	0.15 **	– 0.00	0.10 **
Autonomy - methods	– 0.05	– 0.13 **	– 0.03
Autonomy - scheduling	– 0.14 **	0.00	0.02
Time demands	– 0.15 **	– 0.12 **	– 0.08 **
R^2	.205 **	.112 **	.205 **
F	42.14	20.90	42.37

Table 7.4: standardised regression coefficients (β) for a regression model with situational factors as predictors of informal learning participation, formal learning participation, and intention to develop. * p < .05; ** p < .01, N = 1,811

Situational factors account for 21% of the variance in informal learning participation and intention to develop, but only account for 11% of the variance in formal learning participation.

Across all three dependent variables, support from family and friends is the strongest predictor, with such support exhibiting a modest positive effect on intention to develop, $\beta = 0.28$, $t(1799) = 11.56$, $p < .001$, and informal learning participation, $\beta = 0.21$, $t(1799) = 8.89$, $p < .001$, and a lesser, but still notable, effect on formal learning participation, $\beta = 0.13$, $t(1799) = 4.92$, $p < .001$. Another key variable that affects all three dependent variables is work and time demands, with those with higher demands participating in less informal learning, $\beta = -0.15$, $t(1799) = -6.05$, $p < .001$, formal learning, $\beta = -0.12$, $t(1799) = -4.44$, $p < .001$, and exhibiting a lower intention to develop, $\beta = -0.08$, $t(1799) = -3.34$, $p = .001$.

Of the other support variables, the only other notable effects are that of line manager support on formal learning participation, $\beta = 0.11$, $t(1799) = 3.46$, $p = .001$, with those who receive more support participating in more formal learning activity, and that of support from colleagues on informal learning participation, $\beta = 0.13$, $t(1799) = 4.42$, $p < .001$, with those who receive more support participating in more informal learning activity.

Autonomy has a very different effect on each of the three dependent variables. While decision-making autonomy positively relates with intention to develop, $\beta = 0.10$, $t(1799) = 2.59$, $p = .010$, and informal learning activity, $\beta = 0.15$, $t(1799) = 3.83$, $p < .001$, decision-making autonomy has no significant relationship with formal learning participation. Method-choosing autonomy and scheduling autonomy have significant negative relationships with formal learning participation, $\beta = -0.13$, $t(1799) = -2.70$, $p = .007$, and informal learning participation, $\beta = -0.14$, $t(1799) = -3.61$, $p < .001$, respectively: those with greater autonomy over their work methods participate in less formal learning activity, and those with greater autonomy over their scheduling participate in less informal learning activity.

3.4 Personality and Support

3.4.1 Regression analysis

A regression model combining both personality and situational factors is illustrated in Table 7.5. Entering both groups of factors in one model allows for the statistical effect of individual factors to be tested while controlling for all other factors present in the model.

	Informal	Formal	Intention
Age	– 0.06 *	– 0.09 **	– 0.07 **
Tenure - job	– 0.04	0.00	– 0.02
Tenure - organisation	– 0.07 *	– 0.04	– 0.10 **
Neuroticism	0.08 **	0.02	0.06 **
Extroversion	0.03	0.03	0.06 *
Openness to Experience	0.05 *	0.03	0.03
Agreeableness	0.01	– 0.04	0.12 **
Conscientiousness	0.05 *	0.02	0.02
Proactive personality	0.17 **	0.07 *	0.13 **
Curiosity	0.22 **	0.13 **	0.39 **
Support - family	0.07 **	0.05 *	0.10 **
Support - colleagues	0.13 **	0.02	0.00
Support - line manager	0.06 *	0.12 **	– 0.03
Support - organisation	– 0.03	0.08 *	0.06 *
Autonomy - decision making	0.09 *	– 0.04	0.03
Autonomy - methods	– 0.07	– 0.14 **	– 0.07
Autonomy - scheduling	– 0.11 **	0.02	0.06
Time demands	– 0.11 **	– 0.09 **	– 0.01
R^2	.332 **	.145 **	.437 **
F	49.49	17.41	76.82

Table 7.5: standardised regression coefficients (*β*) for a regression model with both personality and situational factors as predictors of informal learning participation, formal learning participation, and intention to develop. * p < .05; ** p < .01; *N* = 1,811

Similar to models presented earlier, the personality and situational variables explain the most variance in employees' intention to develop (44%), less of the variance in informal learning (33%), and markedly less in formal learning (15%). All models are significant at the $p < .001$ level.

Across all three models, curiosity and proactive personality are key predictor variables. Curiosity has the greatest effect, particularly in predicting intention to develop, $\beta = 0.39$, $t(1792) = 13.83$, $p < .001$, but also with informal learning participation, $\beta = 0.22$, $t(1792) = 7.27$, $p < .001$, and formal learning participation, $\beta = 0.13$, $t(1792) = 3.67$, $p < .001$. Proactive personality also has a notable effect on informal learning participation, $\beta = -0.17$, $t(1792) = 5.53$, $p < .001$, formal learning participation, $\beta = 0.07$, $t(1792) = 1.99$, $p = .05$, and intention to develop, $\beta = 0.13$, $t(1792) = 4.55$, $p < .001$.

When controlling for all other variables, few of the Big Five personality traits have any notable effect in predicting learning participation. Only agreeableness is noteworthy in predicting an employee's reported intention to develop, $\beta = 0.12$, $t(1792) = 5.93$, $p < .001$.

For the support variables, support from different sources differently affect each of the dependent variables, with family support most important in predicting intention to develop, $\beta = 0.10$, $t(1792) = 4.43$, $p < .001$, support from colleagues most important in predicting informal learning participation, $\beta = 0.13$, $t(1792) =$

4.81, $p < .001$, and support from line managers most important in predicting formal learning participation, $\beta = 0.12$, $t(1792) = 3.80$, $p < .001$.

The three aspects of autonomy also have different effects. While none have any significant effect on an employee's intention to develop, decision-making autonomy has a positive effect, $\beta = 0.09$, $t(1792) = 2.51$, $p = .01$, and scheduling autonomy has a negative effect, $\beta = -0.11$, $t(1792) = -3.19$, $p = .001$, on informal learning participation, and methods autonomy has a negative effect on formal learning participation, $\beta = -0.14$, $t(1792) = -2.94$, $p = .003$. An individual's time demands have a negative effect on both informal learning, $\beta = -0.11$, $t(1792) = -4.73$, $p < .001$, and formal learning participation, $\beta = -0.09$, $t(1792) = -3.50$, $p < .001$.

3.4.2 Relative importance of antecedents

Relative weight analysis (Fabbris, 1980; Johnson, 2000; Tonidandel and LeBreton, 2011) is an extension of traditional multiple regression that allows the assessment of the relative contribution of predictor variables in explaining an outcome variable's variance.

In a typical regression analysis, regression weights are often used to assess the contribution of each predictor variable. However, these regression coefficients are not appropriate in determining the relative importance of variables when these variables are correlated. Similarly, bivariate correlations also have their drawbacks in that they do not take into account the contribution of other variables; bivariate correlations only consider the relationship between a single predictor and an outcome.

Relative weights analysis attempts to overcome these issues by transforming variables to create a new set of predictors that are orthogonal to one another, thereby reducing the effects of multicollinearity. The analysis also provides a different set of information to a traditional regression analysis, offering information on the relative contribution of each variable to the explained variance of the outcome variable.

In calculating the relative weights, RWA-Web (Tonidandel & LeBreton, 2015) was used. This online website is powered by the statistical package R, and offers both an easy-to-use front-end for choosing analysis options, and also a back-end that can perform the necessary calculations. As recommended by Tonidandel et al. (2009), 95% confidence intervals were used, were based on bootstrapping with 10,000 replications, and were both bias corrected and accelerated confidence intervals.

The relative importance weights are shown in Table 7.6.

	Informal	Formal	Intention
Age	1.05 *	0.83 **	1.09 *
Tenure - job	0.67 *	0.10	0.56 *
Tenure - organisation	1.63 *	0.83 *	2.46 *
Neuroticism	0.36 *	0.12	0.78 *
Extroversion	2.27 *	0.77 *	3.68 *
Openness to Experience	2.00 *	0.50 *	2.18 *
Agreeableness	0.11	0.09	2.13 *
Conscientiousness	1.21 *	0.17 *	1.47 *
Proactive personality	7.14 *	1.85 *	9.04 *
Curiosity	8.27 *	2.15 *	15.28 *
Support - family	2.40 *	1.47 *	3.72 *
Support - colleagues	2.35 *	1.03 *	0.78 *
Support - line manager	1.18 *	2.12 *	0.33 *
Support - organisation	0.39 *	1.34 *	0.62 *
Autonomy - decision making	0.35 *	0.20	0.48 *
Autonomy - methods	0.22	0.23 *	0.32 *
Autonomy - scheduling	0.31 *	0.12	0.44 *
Time demands	2.26 *	1.04 *	0.39 *

Table 7.6: relative importance analysis weights, expressed as percentages, describing the variance each of the independent variables explains in informal learning participation, formal learning participation, and intention to develop. * significant within a 95% confidence interval. *N* = 1,811.

For intention, for informal learning, and for formal learning, curiosity and proactive personality consistently explain the most variance. This is particularly so for intention, where the two variables explain 24% of variance, and informal learning, where they explain 15% of variance. They are far less important in explaining formal learning, where they only explain 4% of variance.

As well as curiosity (15.3%) and proactive personality (9.0%), family support (3.7%) and extroversion (3.7%) are key predictors of development intention, as are organisational tenure (2.5%), openness to experience (2.2%) and agreeableness (2.1%).

The key variables are slightly different for informal learning participation, with curiosity (8.3%) and proactive personality (7.1%) particularly supplemented by support from family (2.4%) and colleagues (2.4%). Extroversion (2.3%), as with develop intention, is a relatively important variable, but interestingly, work and time demands (2.3%) are equally important, whereas they are not anywhere near as important in explaining variance in development intention (0.4%).

The important antecedents for formal learning are notably different. While curiosity remains the most important predictor (2.2%), support from one's line manager is equally important (2.1%). Along with proactive personality (1.9%), support from one's family (1.5%) and organisation (1.3%) are also relatively important variables in predicting formal learning.

3.4.3 Which matters more? Personality or support?

Comparing the models with personality factors alone and support factors alone, the personality model explains more variance for intention to develop (43%) than the support model (21%). A similar, but smaller, difference in explained variance is the case for informal learning too (personality: 28%; support: 21%). The support model (11%) explains marginally more variance than the personality model (9%) in formal learning participation.

The pattern is similar when looking at the relative importance weights in the combined model. For intention to develop, personality factors explain most of the explained variance (84.5%) compared to support factors (15.5%); with personality factors also relatively more important in predicting informal learning (72.2%) than support factors (27.3%). In predicting formal learning, there is no difference between the relative importance of personality (49.6%) and support factors (50.4%).

There remains merit in considering both personality and support factors together in predictive models. Adding personality factors to a model with support factors offers an increase in explained variance in informal learning, $\Delta R^2 = .129$, $\Delta F = 48.44$, $p < .01$, the intention to develop, $\Delta R^2 = .232$, $\Delta F = 103.63$, $p < .01$, and to a lesser extent, formal learning, $\Delta R^2 = .037$, $\Delta F = 10.65$, $p < .01$. Similarly, adding support factors to a model with personality also leads to an increase in explained variance, although more so with formal, $\Delta R^2 = .058$, $\Delta F = 14.69$, $p < .01$, and informal learning, $\Delta R^2 = .055$, $\Delta F = 18.07$, $p < .01$, than the intention to develop, $\Delta R^2 = .012$, $\Delta F = 4.88$, $p < .01$.

3.5 Intention as a Mediator

It is hypothesised that, as in the Theory of Planned Behaviour, that learning participation may be mediated by intention to develop. In most cases, the antecedents are likely to be partially mediated, having an indirect effect on learning, mediated through intention, and a direct effect on learning.

To test these hypotheses, a series of regressions were carried out to assess the extent of mediation. Hayes' (2013) PROCESS macro was employed in SPSS, allowing easy calculation of measures of indirect effects based on bootstrapped samples. 10,000 bootstrapped samples were used, and bias-corrected confidence intervals were calculated to assess the significance of indirect effects. All antecedents were simultaneously entered into the mediation analyses as covariates, so that it was possible to assess the unique contribution of antecedents relative to one another (Hayes, 2013).

The findings of the mediation analysis for informal learning participation are shown in Table 7.7, showing unstandardized coefficients for the relationship between antecedent and the intention mediator (path a) the direct effect of the antecedent on informal learning participation when controlling for the indirect effect (path c'), the calculated indirect effect (a*b) and 95% confidence intervals, and percentage mediation. Percentage mediation, a measure of effect size, expresses the percentage of the total effect accounted for by the indirect effect (Preacher and Kelly, 2011). The relationship between the mediator, intention to

develop, and informal learning (path b), was the same for all variables, B = 0.12, p < .001.

Predictor variable (X)	Effect of X on M (*a*)	Direct effect of X on Y (*c'*)	Indirect effect of X on Y (*ab*)			Percent mediation (P_m)
	B	B	B	LCI	UCI	
Age	- 0.01 *	- 0.01	- 0.000 *	- 0.002	0.000	11.3
Tenure - job	0.00	0.00	0.000	0.000	0.000	0.00
Tenure - organisation	0.00 **	0.00 *	0.000	0.000	0.000	14.3
Neuroticism	0.08 *	0.13 **	0.010 *	0.003	0.020	7.03
Extroversion	0.08 *	0.05	0.009 *	0.002	0.020	15.9
Openness to Experience	0.04	0.10 *	0.015	- 0.003	0.016	4.64
Agreeableness	0.25 **	- 0.02	0.029 *	0.013	0.049	65.1
Conscientiousness	0.04	0.11 *	0.004	- 0.004	0.015	3.69
Proactive personality	0.14 **	0.22 **	0.016 *	0.017	0.031	6.80
Curiosity	0.37 **	0.23 **	0.043 *	0.021	0.067	15.8
Support - family	0.13 **	0.12 *	0.015 *	0.006	0.028	11.8
Support - colleagues	0.01	0.22 **	0.001	- 0.007	0.009	0.40
Support - line manager	- 0.03	0.08 *	- 0.004	- 0.012	0.003	4.15
Support - organisation	0.07 *	- 0.05	0.008 *	0.001	0.019	12.9
Autonomy - decision making	0.04	0.13 *	0.005	- 0.004	0.016	3.50
Autonomy - methods	- 0.09	- 0.10	- 0.010 *	- 0.024	- 0.001	9.44
Autonomy - scheduling	0.07	- 0.18 **	0.008 *	0.001	0.020	4.55
Time demands	- 0.01	- 0.15 **	- 0.002	- 0.008	0.004	1.10

Table 7.7: mediation model coefficients between antecedents (X), intention to develop (M) and informal learning (Y), and the direct and indirect effects and percent mediation. * $p < .05$ ** $p < .01$. Bias-corrected bootstrap confidence intervals for the indirect effect are based on 10,000 bootstrap samples, * $p < .05$. For all mediation analyses, all independent variables were entered together as covariates, and the effect (*b*) of the mediator (intention to develop) on the dependent variable (informal learning participation) was common to all: B = 0.12, $p < .001$. N = 1,811.

The only antecedent that is fully mediated was that of age, with the direct effect of age on informal learning no longer significant when controlling for intention.

A number of variables are partially mediated by intention, with both significant direct and indirect effects on informal learning participation. These antecedents are neuroticism, proactive personality, curiosity, family support, and scheduling autonomy. Scheduling autonomy exhibits an inconsistent mediation, with the direct effect having a negative relationship, and the indirect effect having a positive relationship. Curiosity (P_m = 15.8%) and family support (P_m = 11.8%) have the highest percentage mediations of the partially mediated antecedents.

Other variables were not mediated by intention, and only have a direct effect on informal learning participation. These variables include openness to experience, conscientiousness, support from colleagues and line managers, decision-making autonomy, organisational tenure, and time demands.

Some antecedents – extroversion, agreeableness, methods autonomy and organisational support - although exhibiting no total effect or direct effect, did exhibit an indirect effect on informal learning, mediated through intention.

A mediation analysis for formal learning is not reported, as the path between intention and formal learning participation (path b) was not significant.

3.6 Differences Between Home-Workers and Office Workers

It is theorised that there could be different experiences for those employees who primarily work in an office and those who primarily work at home, both in terms of how frequently they participate in learning activities, and in terms of the factors that predict such participation.

Participants within the sample were asked whether or not they were classed as a "home-based worker". "Home-based worker" is a recognised term within the organisation, identifying those on a specific contract where there is the expectation that the employee must spend at least 60% of their time working from their home in the UK.

The question about home-working was added to the survey mid data collection, based on feedback from, and conversations with, the organisation. As such, only 874 completed this question, with 283 respondents identifying as home-workers, and 591 as office-workers.

3.6.1 Participation in learning activities

Means and standard deviations for learning participation and intention to develop are shown in Table 7.8, and are shown separately for home-workers and for office-workers.

Learning activity	Mean		Standard deviation	
	Home (*N* = 283)	Office (*N* = 591)	Home (*N* = 283)	Office (*N* = 591)
Self	5.02	5.16	1.89	1.82
Trial-and-error	4.89	5.51	2.09	1.97
Feedback	3.96	4.02	2.02	1.65
Experiences	3.26	3.59	1.87	1.59
Others	3.24	3.69	1.96	1.75
Informal	4.08	4.40	1.46	1.27
Formal	2.20	2.42	1.20	1.02
Intention	5.69	5.81	1.02	1.05

Table 7.8: mean and standard deviation of learning activity participation and intention to develop, broken down by learning activity and by home-worker status.

Standard deviations are generally greater for home-workers than office-workers, with Levene's test for equality of variance significant for all activity types except for learning by oneself, overall informal learning participation, and intention to develop. For subsequent *t*-tests, adjusted test statistics are used for variables with unequal variances.

While there is no significant difference between the intention of either group to participate in learning, $t(873) = -1.68$, $p = .094$, $d = -.11$, the mean participation for home-workers is less than that for office-workers for both informal activities, $t(872) = -3.56$, $p < .001$, $d = -.24$, and formal activities, $t(672) = -3.27$, $p = .001$, $d = -.25$.

Breaking informal learning down into activity groups, home-workers participate in fewer activities compared to office-workers in learning through trial-and-error, $t(602) = -4.45$, $p < .001$, $d = -.36$, job experiences, $t(638) = -3.08$, $p = .002$, $d = -.24$, and through others, $t(606) = -3.80$, $p < .001$, $d = -.31$. The two groups are, however, similar in participation in feedback-seeking, $t(670) = -0.51$, $p = .610$, $d = -.04$, and self-learning activities, $t(868) = -1.10$, $p = .273$, $d = -.07$.

3.6.2 Predictors of learning participation

Regression models were employed to assess the effect of personality and situational variables on dependent variables of informal learning participation, formal learning participation, and intention to develop. All regression models are significant at the $p < .001$ level. When comparing the regression coefficients for variables between the different groups, Paternoster, Brame, Mazerolle and Piquero's (1998) recommended *Z*-test (Clogg, Petkova & Haritou, 1995) is used to assess if regression coefficients are significantly different.

There is little difference in the variance explained of intention to develop in office-workers (44%) and home-workers (47%). Variance explained is greater for informal learning in office-workers (36%) than home-workers (27%); whereas variance explained is greater for formal learning in home-workers (17%) than office-workers (11%).

There are few differences between important predictors for the two groups, with no significant differences in predictor coefficients in predicting informal learning. For both office-workers and home-workers, curiosity, proactive personality, and support from colleagues are the three most notable predictors.

The effect of agreeableness differs between the groups when predicting formal learning ($z = 2.55$), with a limited relationship between agreeableness and formal learning participation in office-workers, $\beta = 0.22$, $t(854) = 0.49$, $p = .62$, but a significant negative relationship in home-workers, $\beta = -0.20$, $t(571) = -2.89$, $p = .004$, with those who are more agreeable participating in less formal learning activity.

In predicting employees' intention to develop, both curiosity and proactive personality exhibit different effects in the two groups. Curiosity has a positive relationship with intention to develop for both office-workers, $\beta = 0.33$, $t(854) = 6.88$, $p < .001$, and home-workers, $\beta = 0.59$, $t(571) = 8.28$, $p < .001$, although significantly more so for home-workers ($z = -3.01$). Proactive personality, on the other hand, has no significant effect on intention to develop in home-workers, $\beta = 0.003$, $t(571) = 0.04$, $p = .97$, but does in office-workers, $z = 2.19$, $\beta = 0.18$, $t(854) = 3.89$, $p < .001$.

3.7 Differences Between Managers and Non-Managers

It is hypothesised that there are differences in learning participation and intentions between employees in management roles and employees in non-management technical, customer service and field roles. The organisation distinguishes between management and non-management roles in its job grading structure, with all employees on one of three "team member" grades or on one of six manager grades. In the survey, 616 team members responded and 1125 managers responded.

3.7.1 Participation in learning activities

Means and standard deviations for learning participation and intention to develop are shown in Table 7.9, and are shown separately for managers and non-managers.

Learning activity	Mean		Standard deviation	
	Non-Managers (*N* = 616)	Managers (*N* = 1125)	Non-Managers (*N* = 616)	Managers (*N* = 1125)
Self	5.24	5.16	1.95	1.80
Trial-and-error	5.83	5.19	2.21	1.90
Feedback	4.23	3.99	2.12	1.51
Experiences	3.83	3.49	1.94	1.49
Others	4.22	3.39	2.02	1.61
Informal	4.69	4.25	1.53	1.20
Formal	2.55	2.39	1.28	0.93
Intention	5.80	5.80	1.10	1.02

Table 7.9: mean and standard deviation of learning activity participation and intention to develop, broken down by learning activity and by managerial status.

Standard deviations are generally greater for non-managers than managers, with Levene's test for equality of variance significant for all activity types, overall participations and intention to develop. For subsequent *t*-tests, adjusted test statistics are used for variables with unequal variances.

While there is no significant difference between the intention of either group to participate in learning, $t(1176) = -0.09$, $p = .929$, $d = -.005$, the mean participation for non-managers is higher than that for managers for both informal activities, $t(1026) = 6.26$, $p < .001$, $d = .39$, and formal activities, $t(944) = 2.70$, $p = .007$, $d = .18$.

Breaking informal learning down into activity groups, non-managers participate in more activity compared to managers in learning through trial-and-error, $t(1091) = 6.01$, $p < .001$, $d = .36$, job experiences, $t(962) = 3.74$, $p < .001$, $d = .24$, feedback-seeking, $t(945) = 2.47$, $p = .014$, $d = .16$, and through others, $t(1028) = 8.70$, $p < .001$, $d = .54$. The two groups are, however, similar in participation in self-learning activities, $t(1164) = 0.91$, $p = .361$, $d = .05$.

3.7.2 Predictors of learning participation

Regression models were employed to assess the effect of personality and situational variables on dependent variables of informal learning participation, formal learning participation, and intention to develop. While there is little difference in the variance explained of formal learning in managers (15%) and non-managers (17%), there are large differences in the variance explained in informal learning in managers (29%) and non-managers (40%) and in the intention to develop in managers (39%) and non-managers (52%).

For the informal learning regression model, proactive personality and curiosity are the two key predictor variables for both managers and non-managers, but there is a significant difference in the beta weights in both models for neuroticism (z = 2.61). While neuroticism does not predict informal learning in managers, β = 0.02, $t(1722) = 0.51$, $p = .61$, neuroticism has a positive relationship with informal learning in non-managers, $\beta = 0.13$, $t(854) = 3.36$, $p = .001$.

In predicting formal learning, the differences between managers and non-managers are more pronounced, particularly in terms of how trait curiosity predicts learning (z = -2.57). While curiosity is the most important predictor for managers, having a positive relationship with formal learning, $\beta = 0.24$, $t(1722) = 5.49$, $p < .001$, curiosity has no significant relationship with formal learning in non-managers, $\beta = 0.002$, $t(1722) = 0.03$, $p = .98$. Important variables for non-managers are methods autonomy, $\beta = -0.25$, $t(1722) = -2.99$, $p = .003$, scheduling autonomy, $\beta = 0.16$, $t(1722) = 2.22$, $p = .03$, and openness to experience, $\beta = 0.09$, $t(1722) = 2.08$, $p = .04$. These effects of methods autonomy, $z = -2.31$, $\beta = -0.03$, $t(1722) = -2.69$, $p = .66$, scheduling autonomy, $z = 2.44$, $\beta = -0.05$, $t(1722) = -1.05$, $p = .30$, and openness to experience, $z = 2.14$, $\beta = -0.02$, $t(1722) = -0.65$, $p = .52$, are all significantly different (and lower) in managers.

The models predicting intention to develop are relatively similar for managers and non-managers, with only one main difference in the effect of organisational support (z = -2.97). While organisational support is a significant predictor for managers, $\beta = 0.12$, $t(1722) = 3.71$, $p < .001$, it is not for non-managers, $\beta = -0.03$, $t(1722) = -0.66$, $p = .51$.

4 DISCUSSION

In this section, the findings are related back to the hypotheses (summarised again in Table 7.10) and to research questions that were posited earlier in the thesis, with findings discussed in relation to existing literature, and any new contributions or insights highlighted.

When considering antecedents in this section, the extent to which their relationship with outcome variables was mediated is considered at the same time. This is to address the following research question:

RQ6: Which of the personality and situational antecedents studied are mediated by intention to develop in predicting (a) informal learning participation, and (b) formal learning participation?

4.1 Personality Factors

Given that curiosity and proactive personality were found to be two of the most important antecedents in explaining variance in intention and participation, these variables are considered first, followed by discussion of the Big Five, and of age and tenure. The following research question was put forward:

RQ3: Do individual differences (proactive personality, curiosity, Big Five, age, tenure) predict an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

4.1.1 Curiosity

It was correctly hypothesised (H9) that curiosity would have a positive relationship with learning intentions, informal learning participation, and formal learning participation.

Curiosity had a significant positive relationship with all three outcome variables, with zero-order correlations particularly high: with a large effect size (r = .60) for the correlation with intentions, and a medium effect size (r = .47) for the correlation with informal learning participation. Considered in conjunction with all other variables, curiosity remained a significant predictor of intentions, informal learning and formal learning. Compared to other antecedents, it explained the most variance for all three outcomes: intention (15.3%), informal learning (8.3%), and formal learning (2.2%).

It is not surprising that curiosity is such a key antecedent of learning, given that the trait is defined as "recognising, embracing and seeking out knowledge and new experiences". Learning, by its very nature, is a process of obtaining new knowledge, and engaging in new experiences is a key informal learning activity. As theorised, there is merit in considering a narrow personality trait rather than the Big Five alone. Indeed, tests measuring the incremental validity of curiosity over the Big Five were significant. The strength of the relationship observed in this study offers great insight to the current academic understanding of curiosity, and supports the earlier work of Moon and Ka (2009), Reio and Wiswell (2000), and Sluss and Ashworth (2011) who found a positive relationship between curiosity and learning-related concepts. The strength of the relationship, with relative importance far above most other variables, also offers a novel insight into the understanding of informal and formal learning antecedents in both the academic literature and in practice.

Looking at the mediation analysis, in predicting informal learning, curiosity was partially mediated by employees' learning intentions. The percentage mediation, at 15.8%, was one of the larger percentage mediations of all the antecedents. This suggests that curiosity has two routes by which it can influence informal learning: through intention, and directly. The finding suggests that curious individuals, by their nature, may be more inclined to participate in learning and may have a greater intention and desire to do so. However, the direct effect on informal learning participation suggests that some of their learning participation may be incidental, with more curious individuals more likely than less curious individuals

to find themselves in, or take advantage of, situations in which they may engage in learning.

4.1.2 Proactive personality

The second key personality antecedent is that of proactive personality, which was hypothesised (H8) to have a positive relationship with learning intentions, informal learning participation, and formal learning participation. These hypotheses were supported.

This study is the first time that both curiosity and proactive personality have been assessed together, and both are found to have separate effects, independent of one another, on both learning participation and intention.

Like the narrow trait of curiosity, proactive personality had notable correlations with learning intentions (r = .60) and informal learning participation (r = .47). Again, when considered in a model with all other variables, proactive personality was a significant predictor of all three outcome variables. For informal learning and learning intentions, it was the second most important antecedent, after curiosity, explaining 7.1% of variance in informal learning (the third most important antecedent explained 2.4%), and 9.0% of variance in learning intention (the third most important explained 3.7%). For formal learning, while proactive personality remained a relatively important antecedent, explaining 1.9% of variance, the difference compared to other variables, such as family support (1.5%), was less pronounced.

This finding is in line with previous research, notably Major et al.'s (2006) study of the effects of proactive personality on training participation. This extends the findings of said study, in that the same relationship also holds true for informal learning as it does for formal learning. Similar to Major et al.'s study, proactive personality showed incremental validity above the Big Five in explaining variance in both informal and formal learning.

The mediation analysis showed that proactive personality has both direct and intention-mediated effects on learning, again replicating previous findings of Major et al. (2006), who found that proactive personality had an indirect effect on training participation, mediated through motivation to learn, a mediator similar to intention to develop, as well as a direct effect. Not only does one's proactive personality influence intention to develop – but it may be that more proactive individuals find themselves more able than less proactive individuals to take advantage of unplanned situations that may give rise to learning. This would make sense given that proactive individuals are said to be more able to identify opportunities such as these, and then act on them to bring about change.

4.1.3 Big Five

It was hypothesised (H3) that **neuroticism** would have a negative relationship with learning intentions, informal learning participation, and formal learning participation. This hypothesis was not fully supported. Such an effect was found with the zero-order correlations, with neuroticism negatively correlated with intention, informal learning, and formal learning. However, when controlling for

other antecedents, neuroticism had a significant *positive* effect on intention and informal learning, and no significant relationship with formal learning. The relationship with informal learning was partially mediated by intention, and both the indirect and direct effects were in a positive direction. The change in direction may indicate that much of neuroticism's effect is accounted for by another variable; perhaps neurotic people receive less support from others than more emotionally stable people would (r = -.19 to -.21), which reduces their informal learning participation; or that those who are more neurotic are typically less curious than those who are more emotionally stable (r = -.39), as their anxieties make them more hesitant to embrace and seek out new experiences. When controlling for such effects, and assessing neuroticism's unique effect on learning participation, it may then make sense for a positive relationship to be observed. Neurotic individuals may be more anxious or worrisome about the future, and so may engage in more informal learning as a coping mechanism to maintain their employability and adaptiveness.

This finding runs contrary to that evidenced in existing research (e.g. Blume et al., 2010; Major et al., 2006; Noe et al., 2013), all of which have found a negative relationship between neuroticism and learning participation. However, in this study, the inclusion of other variables may account for this difference, with Major and colleagues', and Noe and colleagues' studies not including situational variables or the more narrow trait of curiosity.

It was hypothesised (H4) that **extroversion** would have a positive relationship with learning intentions, informal learning participation, and formal learning participation. This hypothesis was partly supported. Looking at the zero-order correlations, these hypotheses were supported, with all relationships significant, with those between extroversion and intention (r = .38) and informal learning (.31) of a medium effect size. However, in a regression controlling for other antecedents, extroversion only had a significant effect on intention; and not informal learning or formal learning. Interestingly, in the regression model with just other personality antecedents, extroversion had a significant effect on informal learning participation, suggesting that one of the situational variables explains similar variance to extroversion. It may be that extroverts receive more interpersonal support than introverts, given that they may seek out social contact and support. This 'seeking out' effect may also be supported by the fact that extroversion's effect on informal learning was fully mediated by intention, with more extroverted individuals demonstrating a higher intention to engage in development than more introverted employees. Most interestingly, in the relative importance analysis, extroversion was one of the top four important variables for intention to develop, and one of the top seven for informal learning participation.

This finding mostly supports previous work (Major et al., 2006; Noe et al., 2013), but, as with neuroticism, the inclusion of situational variables in this study may account for the slight differences in effect seen.

It was hypothesised (H5) that **openness to experience** would have a positive relationship with learning intentions, informal learning participation, and formal learning participation. This hypothesis was partly supported. Openness to experience exhibited a significant positive correlation with both learning and

participation, but when controlling for other antecedents, only its relationship with informal learning participation was significant; the relationships with formal learning and intention were not significant. This relationship was not mediated by intention. The fact that openness to experience was not an important predictor comes as somewhat of a surprise, especially given how important it has previously been shown to be in relation to formal learning (Major et al., 2006) and general development activity (Hurtz & Williams, 2009). However, this difference may be because curiosity and openness to experience share some similarity, especially given that curiosity, albeit in a slightly different form, is a sub-facet of openness to experience.

It was hypothesised (H6) that **agreeableness** would have a positive relationship with learning intentions, informal learning participation, and formal learning participation. This hypothesis was partly supported, as agreeableness had very different effects on the three outcome variables. The effects of agreeableness on informal and formal learning participation were non-significant. However, there was a significant relationship with development intention, those who were more agreeable reported greater intentions than those who were less agreeable. This, therefore, begs the question as to why agreeableness may affect intention and not participation. This finding may, however, be because of the study's choice of measurement: with intentions being measured on a scale, and participation being measured using a scale that asked participants to indicate frequency of their actual participation. As such, the intention scale may be more open to bias, and it may just be the case that more agreeable people were more likely than less agreeable people to answer in a socially desirable way. The effect of agreeableness has, however, been observed in previous studies, such as Noe et al. (2013) – but, indeed, these studies have also used a general non-anchored scale such as the one used to measure development intention in this study.

It was hypothesised (H7) that **conscientiousness** would have a positive relationship with learning intentions, informal learning participation, and formal learning participation. Although the relationships with formal learning and development were non-significant, conscientiousness did exhibit a positive relationship with informal learning participation. This relationship was not mediated through intention, suggesting that conscientious individuals do not intend to participate in more informal learning, but may do so anyway. Given that conscientious individuals are likely to be responsible, organised and achievement-oriented, it may be that they participate in informal learning as this is perceived as important to their job role, or important by their employer. They may, therefore, even without a desire to develop, participate in more learning activity. In previous work, conscientiousness is one of the most widely studied of the Big Five (Hurtz & Williams, 2009), and so it was surprising to observe that it was not a key variable in predicting informal learning, and had no significant relationship with formal learning. As with openness to experience, this may be because conscientiousness and proactive personality may share some similarities.

Of the Big Five, extroversion was found to be the most important predictor of learning, with conscientiousness and openness to experience both also being notable predictors of informal learning and development intention. Neuroticism

and agreeableness both explained relatively little variance in learning participation.

4.1.4 Age and tenure

It was hypothesised that both age (H1) and tenure (H2) would have a negative relationship with learning intentions, informal learning participation, and formal learning participation. The hypotheses surrounding age were supported, with age exhibiting a significant negative relationship with informal learning, formal learning, and intention, even when all other variables were controlled for. Compared to other variables, however, age explained relatively little variance in participation or intention.

The relationship between age and informal learning participation was fully mediated by intention, suggesting that older employees typically have lower intentions to develop than younger employees, which subsequently means that they participate in less informal learning activity than younger employees. This mediation is particularly enlightening: while plenty of previous work has shown a negative relationship between age and learning, this study is able to build upon this finding to show how it takes effect.

As seen in the existing literature, tenure also illustrated mixed effects in this study, with differences observed between job tenure and organisational tenure. Job tenure held no significant relationship with intention or learning participation. Organisational tenure, on the other hand, had a significant negative relationship with both development intention and informal learning participation; the relationship with formal learning was non-significant. Organisational tenure's relationship with informal learning was not mediated by intention, with organisational tenure only having a direct effect on participation. Compared to other variables, organisational tenure explained little variance. There does appear to be merit in considering tenure in different ways, and this may account for the mixed findings found in previous research.

4.2 Situational Factors

The following research question was proposed in relation to situational antecedents:

RQ4: Do situational aspects (autonomy, perceived support, time and role demands) predict an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

4.2.1 Work and time demands

It was hypothesised (H10) that work and time demands would have a negative relationship with learning intentions, informal learning participation, and formal learning participation. This hypothesis was partly supported. Once all other variables were controlled for, work and time demands had no significant effect on development intentions. However, work and time demands did have a significant negative relationship with informal and formal learning participation.

The relative importance analysis showed work and time demands to be one of the more important predictors of learning participation, being one of the top six antecedents for both informal learning (2.3% variance explained) and formal learning (1.0% variance explained). This finding is in line with both qualitative and quantitative published work, as well as the qualitative work in Chapter 6, which showed time demands to be one of the most frequently reported barriers to learning. Work and time demands were not mediated by intention, and work and time demands had a direct effect on participation.

This suggests that, regardless of time and workload constraints, employees still have the best of intentions to participate in development activity; but they may not find themselves with the time to participate in either informal or formal learning.

4.2.2 Support

It was hypothesised that each of the four types of support – from family and friends (H17), from colleagues (H15), from one's manager (H14), and from one's organisation (H16) – would have a positive relationship with learning intentions, informal learning participation, and formal learning participation.

In predicting intention, family support was particularly important, explaining 3.7% of variance, and was the only significant predictor of development intention along with organisation. Those with greater support from their family and organisation had greater intention to develop than those with less support.

In predicting informal learning participation, support from family, colleagues and line manager all had a positive relationship with participation. Support from family and colleagues were most important, each predicting 2.4% of variance in participation. It was particularly interesting to observe that, contrary to the qualitative work in Chapter 6, line managers did not play a more important role.

The important sources of support were different for formal learning, with one's line manager instead the most important source of support, explaining 2.1% of variance and being one of the top two predictors of formal learning participation. Line manager support is likely most important for formal learning given that managers will often control or authorise access to formal learning opportunities, more so than they would with informal learning opportunities. Both family and organisation support had a positive relationship with formal learning participation too.

Although support from one's colleagues and line manager was not mediated by intention to develop, the mediation analyses for family and organisational support were particularly interesting. The effect of family support on informal learning was partially mediated by development intention, with the percentage mediation one of the greatest for the antecedents studied (11.8%). This suggests that family support, above and beyond any of the other support sources, influences one's intention to develop. Families may therefore be supporting learning in one of two ways: inspiring and encouraging an individual to want to develop, as was seen in the earlier qualitative research with examples of parents and children acting as an

inspiration; and directly on participation, such as family providing time and space at home for informal learning to take place.

Organisational support was another interesting antecedent, which may have multiple ways in which it effects informal learning. Although the total effect of organisational support on informal learning was not significant, this may be because organisational support exhibits an inconsistent mediation. The organisational support's direct effect on informal learning was not significant, but was of a negative direction; whereas the indirect effect of organisational support on informal learning was significant, and of a positive direction. As such, it may be that organisational support, such as positive learning culture and encouragement may boost one's intention to develop, but there may be no effect, or the opposite effect in terms of how organisational support affects incidental learning opportunities. It may be the case that too much organisational support takes away the time, opportunity or energy for individuals to truly take advantage of, and reflect on, incidental learning.

Overall, family support stood out far above the other sources of interpersonal support in explaining both intention and participation. In the relative importance analysis, it was one of the top four antecedents for predicting intention and informal learning, and one of the top five in predicting formal learning. It is, therefore, surprising that the existing literature has given friends and family so little consideration to date. It appears that there is great merit in exploring the role of one's family and friends in supporting learning and development.

4.2.3 Autonomy

It was hypothesised (H11) that the three types of autonomy – decision-making, methods, and scheduling – would have a positive relationship with learning intentions, informal learning participation, and formal learning participation. Autonomy exhibited very mixed effects with learning intention and participation, although was found to be a relatively unimportant predictor for each of the three outcome variables.

None of the three types of autonomy were a significant predictor of learning intention when all other antecedents were controlled for. When controlling for only other situational variables, however, and not the personality variables, methods autonomy was a significant predictor of intention, with those with more methods autonomy more likely than those with lower autonomy to report a higher learning intention. This raises the question as to which of the personality variables may be sharing the variance explained in learning intention. Perhaps those who are more proactive or curious perceive greater methods autonomy than those are less proactive or curious.

For the formal learning model, only one of the three autonomy types – methods autonomy – was a significant predictor of participation, with those with higher autonomy participating in less formal learning than those with lower methods autonomy. This negative relationship is the opposite direction to that which was hypothesised. Perhaps, while methods autonomy may give employees more freedom over how they go about their work, those with greater methods

autonomy may shy away from training courses and formal programmes, choosing to stay within their comfort zone and choose methods they know, or opt for a different way of learning.

For informal learning, the other two types of autonomy – decision-making and scheduling - were significant, whereas method autonomy was non-significant. Decision-making autonomy exhibits a positive relationship with participation; and scheduling autonomy a negative relationship with participation. Scheduling autonomy exhibited a particularly interesting mediation effect, with its effect on informal learning being partially mediated by intention. The direct and indirect paths were of different directions: those with greater scheduling autonomy had greater development intentions than those with lower autonomy, and in turn these intentions went on to positively correlate with participation; however, the direct effect was of the opposite direction, with those with more scheduling autonomy participating in less informal learning than those with less autonomy.

This dual route on informal learning is particularly interesting, and may go some way to explaining the mixed findings of autonomy is the existing literature. Scheduling autonomy means that employees have more freedom and independence over how they spend their time, and can use their discretion to schedule work as they like. While employees may therefore take this autonomy, and have the best of intentions of participating in informal learning, it may be that this autonomy causes another effect. Perhaps with greater scheduling autonomy, employees end up scheduling in activities other than informal learning, whether that be because of poor time management, or because they get 'dragged away' by other work or home tasks. As was mentioned in the qualitative findings, many other work activities are frequently prioritised above informal learning, and greater autonomy may mean that any protected time for learning is not available and that individuals prioritise activities and tasks other than learning.

The positive relationship between decision-making autonomy and informal learning participation, on the other hand, is in the expected direction. However, it runs counter to the effects of methods and scheduling autonomy on formal and informal learning respectively. Given that those with decision-making autonomy are likely to have to make more decisions, it may be the case that employees deal with the pressure of making decisions by engaging in informal learning and research activities in order that they are sure that are making the correct decision.

4.2.4 Summary of hypotheses

A summary of all hypotheses outlined in Chapter 4, and whether or not these hypotheses were supported in the study's regression model, is offered in Table 7.10.

Hypothesis and factor		Direction of effect	Sig relationship between factor and		
			Informal learning	Formal learning	Intention to develop
1	Age	Negative	✓	✓	✓
2i	Organisational tenure	Negative	✓		✓
2ii	Job tenure	Negative			
3	Neuroticism	Negative	✓		✓
4	Extroversion	Positive			✓
5	Openness to experience	Positive	✓		
6	Agreeableness	Positive			✓
7	Conscientiousness	Positive	✓		
8	Proactive personality	Positive	✓	✓	✓
9	Trait curiosity	Positive	✓	✓	✓
10	Time and work demands	Negative	✓	✓	
11i	Autonomy (decision-making)	Positive	✓		
11ii	Autonomy (methods)	Positive		✓	
11iii	Autonomy (scheduling)	Positive	**		
14	Support from line manager	Positive	✓	✓	
15	Support from colleagues	Positive	✓		
16	Support from organisation	Positive		✓	✓
17	Support from friends/family	Positive	✓	✓	✓

Table 7.10: table showing hypotheses outlining in Chapter 4, and whether a number of individual and situational factors exhibited a significant relationship in the direction hypothesised with a) informal learning, b) formal learning, and c) intention to develop, as tested using a regression model in which all factors were entered simultaneously, and with a significance level of $p < .05$. ✓ indicates the hypothesis was supported; ** indicates that the relationship was significant at the $p < .05$ level, but in the opposite direction to that hypothesised.

4.3 Relative Importance of Antecedents

Given that little work has sought out to examine the relative importance of the many antecedents that may influence learning, the following research question was put forward in Chapter 4:

RQ5: Which of these individual differences and situational aspects are most important in predicting an employee's participation in (a) informal learning, (b) formal learning, and (c) their intention to engage in learning?

On a broad level, personality and situational antecedents had very different effects in explaining development intention, informal learning participation, and formal learning participation. In all cases, there was incremental validity with models incorporating both personality and situational antecedents, compared to models with just personality or situational factors alone.

For both intention and informal learning participation, personality antecedents explained far greater variance than the situational antecedents – by a ratio of

around three to one. For informal learning, one's personality appears to be more important in predicting participation than situational constraints. This finding is partly similar to the finding by Maurer and Tarulli (1994), who observed that individual differences were far more important than situational differences in explaining development behaviours.

The story was somewhat different for formal learning, however, where personality and situational antecedents both explained roughly equal levels of variance in participation, a finding that runs contrary to that of Maurer and Tarulli (1994) and their general measure of development. While personality factors remained an important predictor, situational factors were equally important in determining an employees' participation in formal learning.

When considering the incremental variance explained by adding personality or situational factors into a model with the other, several interesting effects were observed. The added consideration of personality to a model of situational factors offers a larger improvement in explained variance for informal learning and intention, compared to formal learning. This possibly suggests that support factors are more important for formal learning activity than they are for informal learning activity and intention. This is understandable given that access to formal learning is often controlled by the organisation or one's line manager.

Similarly, the increase in variance explained when including situational factors on top of personality factors was greater for informal learning and formal learning than it was for intention. This suggests that, when considering one's intention to develop, situational factors have little effect and do not play as large a part in the development of these intentions. Situational factors, on the whole, had a more limited additive effect above personality factors, possibly suggesting that personality could potentially affect situational factors. It may be, for example, that individuals who are more extroverted, curious, or proactive attract more support from others. Indeed, correlations between such personality variables and support variables are positive.

Looking at specific antecedents, curiosity and proactive personality consistently stood out at the most important predictors of variance in both intention and participation. In explaining informal learning and intention, each of these factors explained nearly three to four times as much variance as the next important predictor. Given that curiosity has rarely been included in learning and development work previously, it is surprising to see how large an effect it has. Similarly, family support was found to be particularly key in explaining all three outcome variables compared to other forms of interpersonal support – again, surprising given its limited consideration in prior work.

The relative importance analysis offers a new insight into which antecedents may be most important in explaining learning and development participation. The current literature proposes a large, and potentially overwhelming, number of potential antecedents, and so the assessment of their relative importance can assist in determining the future direction of research. Future work can then begin to focus in on key variables that have been demonstrated to be relatively more important than others, beginning to explore the nuances of their effects, whether

that be through detailed qualitative work, or specific mediation and moderation models.

4.4 Home and Office Worker Differences

RQ7a: Are there differences in informal learning participation, formal learning participation, and intention to engage in learning between home-workers and office-workers?

It was hypothesised (H12) that there would be differences between home-workers and office-workers in terms of their learning intentions and participation, with home-workers being less likely to participate in informal and formal learning than office-workers, and having less intention.

Both groups were found to have similar intentions to develop. In some ways, this is not surprising, as both may face similar pressures to learn so as to best fulfil their current job role and build on their employability. However, it was expected that office-workers may be more exposed to ongoing initiatives and drives within the office environment, such as observing what co-workers are doing and being spurred on by competition.

There was, however, a significant difference for informal learning and formal learning participation, with office-workers participating in more of both types of learning than home-workers. For formal learning, this may be expected as home-workers face a greater barrier to participation in formal learning that takes place at work, with training rooms more of a commute from their normal working environment.

For informal learning, the effect appears to be driven by a number of activities – with greatest differences in learning through others and through trial-and-error. Given that home-workers may be away from their colleagues, it seems sensible that they may be able to learn less from their co-workers. A difference in trial-and-error learning, however, is less of an expected effect. Perhaps, for home-workers, the risks of trial-and-error are greater, with the fear that mistakes or delays that may arise from this form of learning being perceived as poor performance by their managers, and perhaps jeopardising their home-working contract. On the other hand, it may be that trial-and-error may be less appealing to home-workers. Whereas an office worker may be constrained by set hours, and so be able to fill spare time with trial-and-error learning, there is less of an incentive for those who work from home, who can more easily do other tasks or activities once their day-to-day work is completed than their office-workers could.

RQ8a: Do individual differences and situational factors predict informal learning participation, formal learning participation, and intention to engage in learning in different ways for home-workers and office-workers?

In predicting intention and participation, there were few differences in the effect of antecedents. Agreeableness had different effects on formal learning participation for both groups, with a significant relationship being found only for home-workers. Those more agreeable home-workers participated in less formal

learning than less agreeable home-workers. This may be driven by the fact that the participation in formal learning for home-workers may come at a greater expense than for office-workers, with organisations having to foot the bill for travel or hotel expenses when they come to the office. Given that organisations may therefore look to minimise such opportunities to save cost, it may be only those more disagreeable employees who are willing to put up an argument to benefit from such formal initiatives.

Differences were also observed between the two groups in terms of how curiosity and proactive personality predicted intention to develop: with curiosity having a greater positive relationship with intention in home-workers than office-workers; and proactive personality only having a significant effect on intention in office-workers. It may be that these two traits are necessary in different ways in the two environments. Given that home-workers may realise that they are less predisposed to take advantage of incidental learning that may naturally arise in an office environment, it may be that their curiosity creates a greater intention. On the other hand, given that they are away from such incidental opportunities, it may be less important for them to be proactive in identifying these opportunities and acting upon them.

4.5 Manager and Non-Manager Differences

RQ7b: Are there differences in informal learning participation, formal learning participation, and intention to engage in learning between managers and non-managers?

Previous work has described that those in higher level occupations or job roles tend to participate in more formal and informal learning than those in lower level occupations or job roles – although this effect has rarely been demonstrated specifically with informal learning. It was hypothesised (H13) that this effect would be seen in this study, with managers having greater intention, and participating in more informal and formal learning, than non-managers.

Although both groups shared similar levels of intention, surprisingly, non-managers participated in more informal and formal learning than managers – contrary to existing studies. This effect was consistent across all types of informal learning, except for self-learning activities where both groups participated in similar levels of activity. The fact that both groups share similar intentions, and are able to participate in similar amounts of activity that are mostly under their control (self-learning activities), suggests that something external to the individual is driving this effect.

RQ8b: Do individual differences and situational factors predict informal learning participation, formal learning participation, and intention to engage in learning in different ways for managers and non-managers?

Looking at the different ways in which antecedents predicted participation and intention, the most notable difference was in the variance explained in informal learning and intention by the antecedents. A larger proportion of variance was explained in informal learning and intention models for non-managers than for

managers. This may be because, for managers, who typically have greater experience and are of a higher educational level, they are more likely to have a higher baseline level of intention or informal learning, whether that be because they place greater value on their continuous professional development, or are more readily exposed to learning opportunities and positive learning environments.

For informal learning, neuroticism predicted participation differently between non-managers, for whom it was positively related with participation, and managers, for whom there was no relationship. Neuroticism may have a greater effect with non-managers if they have less job security, as more neurotic people may worry more about building their employability than more emotionally stable people. For those in management positions, who may be in more secure roles, this worry is likely to be less of a concern, and so neuroticism can have a more limited effect.

The most notable differences were observed, however, in the way in which antecedents predicted formal learning. Curiosity had a positive effect on participation for managers, but not for non-managers. Given the constraints in non-management positions, it may be more difficult for one's curiosity to take effect that would be the case in a management role, with fewer opportunities of which they can take advantage.

Two types of autonomy also had different effect, with methods autonomy having a negative relationship, and scheduling autonomy a positive relationship, with participation in non-managers; neither relationship was significant for managers. In terms of methods autonomy, it may that non-managers, given the choice over how they go about their work and choose to learn, may be less inclined to participate in formal learning activities. This may relate back to the idea that those in lower management roles typically have fewer educational qualifications, and may be more anxious about participating in formal learning than a manager with greater experience of learning may be. With scheduling autonomy, non-managers are likely to have more proscribed roles and may participate in formal training as a way to make a change from their normal working environment, away from their day-to-day work and to have time specifically focused on their development. For a manager, on the other hand, these issues are less likely to be a concern, given that managers will often have greater interactions across the business and greater flexibility over their work, and it may also be the case that they have reached a level where formal learning is less effective for their needs.

The last difference is in openness to experience, which exhibits a positive relationship with formal learning participation for non-managers, but no relationship for managers. Again, for those at lower levels in the organisational hierarchy, who may be less experienced in managing their learning and may have fewer opportunities readily placed in front of them, their predisposition to embracing new experiences may be all the more important. Whereas, for a manager, who may have more courses readily available, be more experienced in learning and development initiatives, and may have already participated in many of the available training opportunities, openness to experience is likely to have less effect.

Finally, in predicting intention to develop, only organisational support exhibited a different effect between managers and non-managers, with a significant positive relationship between organisational support and formal learning for managers, and no significant relationship between the two variables for non-managers. Perhaps, in this instance, the support provided by an organisation is tailored more towards managers, and is more effective at supporting their learning, rather than that of non-managers.

5 SUMMARY

This chapter has tested a series of hypotheses relating to antecedents' statistical effects on informal learning, formal learning and intention to develop. The study of formal learning and intention to develop was carried out in order to better inform understanding of how antecedents may predict informal learning, and how findings may compare to those of previous studies.

Of the antecedents found to be important for informal learning, curiosity, proactive personality, interpersonal support and time demands were found to be the most important. This was the first study to explore the role of curiosity, which was found to be a substantially more important antecedent than most others, even when considered alongside proactive personality, which, as before, was also found to be a key predictor of learning participation.

The different effects of the four types of support were particularly interesting, with colleagues and family found to be most important for informal learning; line manager most important for formal learning; and family support most important for intention to develop. By testing mediation models, a dual route of family support was uncovered, with family support affecting both intentional and incidental learning.

Other key findings of the mediation analysis were the inconsistent mediation of scheduling autonomy, which may help account for the mixed findings in the current literature, and the full mediation of age, which adds new avenues for exploration into the ongoing discussion on age in the existing literature.

Differences between home-workers and office-workers, and between managers and non-managers were also tested. As expected, home-workers participated in less informal learning than office-workers; but unlike current findings, non-managers participated in more informal learning than managers. Some consideration as to the ways in which antecedents have different effects on each of these groups has also been considered, which offers further evidence by which one can explore the effects of antecedents, and make comment on the study's generalisability.

8. General discussion

1 SUMMARY

In this chapter, a summary of the findings for each of the research questions is presented, and these findings are then discussed in the context of existing literature. The quantitative and qualitative studies are later brought together, with overarching themes identified and discussed. The contributions of the thesis for the academic understanding, and the implications for practice are then highlighted, before a consideration of the thesis' limitations and subsequent opportunities for future research.

2 SUMMARY AND DISCUSSION OF RESEARCH QUESTIONS

During the consideration of previous literature, eight research questions were developed, which were then explored and tested in qualitative and quantitative studies. The main findings of these questions are as follows.

2.1 BARRIERS TO INFORMAL LEARNING

RQ1: What barriers do employees perceive may hinder informal learning?

One way to explore how organisations may support their employees' informal learning is by trying to identify the barriers that employees perceive to hinder their informal learning efforts. While there is some existing research that begins to identify such barriers (as summarised by Crouse et al., 2011), most studies have not explored barriers in the specific context of informal learning, and there are numerous shortcomings in existing categorisation efforts.

To date, Crouse and colleagues (2011) offer the most comprehensive framework of barriers to learning, reviewing existing literature to identify barriers to learning and then grouping these barriers into one of nine categories. However, these nine categories are where the framework falls down, in that the categories are both poorly defined and, in many cases, not adequately distinct from one another. As discussed in the earlier literature review, this could be because the framework was established through reviewing existing literature and previous studies, and not through the researchers' own primary data. Having a large number of overlapping categories greatly limits the framework's potential in practice, and such over-complication may make the model less accessible to employees and to organisations.

The categorisation presented in this thesis is far more simplistic than that of Crouse and colleagues (2011), with barriers grouped into one of three broad themes: time and work demands (extrinsic and intrinsic); personal factors (intrinsic); and learning environment (extrinsic). While not matching with Crouse and colleagues' framework, this categorisation better matches other frameworks that are more specific to informal learning, namely those of Doyle and Young

(2003), who separate barriers into time-related, learning environment (including course content, delivery, relevance and cost), and personal factors; and Lohman (2000, 2005), who separate barriers into environment factors and personal factors. This intrinsic-extrinsic differentiation is also observed in the quantitative literature, as discussed when considering the literature review of the factors predicting workplace learning by Kyndt and Baert (2011). The intrinsic-extrinsic categorisation also draws upon the work of Stuart (1984), who logically differentiates learning barriers into intrinsic (personal) and extrinsic (environment) groups. He further separates extrinsic factors into 'psycho-structural barriers' "where the learner experiences blocks and barriers to his learning which are rooted in his tasks, the structure within which they are located, and the physical setting in which they are carried out", and psycho-social constraints which "arise from the prevailing climate and relationships of which [the learner] is a part". These physical-structural barriers and psycho-social barriers can be applied to the learning environment barriers discussed in this thesis, with most 'limited access to learning opportunities' and 'unsuitable location and equipment' barriers similar to 'physical-structural barriers', and most 'lack of support for learning' barriers similar to 'psycho-social barriers'.

Comparing the individual barriers identified in this study with those identified in previous work, there are both similarities and differences. Table 8.1 illustrates how barriers identified in this study, and in previous studies, may relate to both informal and formal learning, with barriers grouped using a mixture of the taxonomies of Doyle and Young (2003), Lohman (2000, 2005), and Stuart (1984).

	More unique to informal learning	**Common to informal and formal learning**	**More unique to formal learning**
Time and workload factors	• Need for scheduled time	• Lack of time • Competing demands outside work • Low prioritisation of learning	• Difficulty getting time off to attend • Inconvenience
Personal factors	• Concentration	• Motivation • Energy • Confidence and self-efficacy • Learning difficulties and poor health • Drive and direction • Fear of failure • Low importance attached to learning • Bad previous experiences • Unaware of needs • Self-discipline and conscientiousness	
Learning environment: physical-structural factors	• Work environment: noise, disturbances • Informal learning not recognised or accredited • Job design	• Lack of suitable technology • Lack of opportunities • Funding problems • Job contract • Acquiring inappropriate	• Poor or inappropriate training design and delivery • Too much to learn • Irrelevance

		knowledge • Fast pace of change • Reward structures	
Learning environment: psycho-social factors	• Organisational silos	• Organisational culture • Interpersonal support • Power and politics	

Table 8.1: Barriers to informal and formal learning as found in this study and previous studies, broken down into Stuart's (1984) categories of time, personal factor, and learning environment (physical-structural and psycho-social).

The first group of barriers is that of '***time and workload factors***'. Like with earlier work by Doyle and Young (2003), these factors were considered as a separate group given the prevalence with which such barriers were reported. Time is a barrier to both informal and formal learning, but it may be that the way that it takes effect is different for the two types of learning.

For formal learning, it is more likely that employees need a set chunk of time to engage in a training session or educational course, and so the difficulty may be around finding that block of time, negotiating that time with a manager, or with the inconvenience of being away from one's day-to-day work.

Whereas, for informal learning, where learning will often take place in smaller bites alongside the day job, and there is a relatively permeable boundary between work and learning, individual differences in time management ability may be more important in negotiating this boundary. It will be important for employees to schedule time for learning and to prioritise informal learning above day-to-day work activities.

The second group of barriers is that of '***personal factors***', which expands upon Doyle and Young's (2003) barrier of personal factors, incorporates Lohman's (2000, 2005) category of personal factors, and brings in Crouse et al.'s (2011) category of 'personal constraints'. Many of the personal factors observed are relevant to both informal and formal learning, and have regularly been studied in the literature. Most of the qualitative frameworks to date, such as those by Crouse et al. (2011), Lohman (2000, 2005) and Doyle and Young (2003), simply group 'personal factors' into one high level group, without breaking down this group into particular factors. However, many of the personal factors identified in this study have been found, through quantitative study, as factors predicting development participation. These factors include self-efficacy and confidence (Hurtz & Williams, 2009; Maurer et al., 2006), self-discipline and conscientiousness (Hurtz & Williams, 2009; Major et al., 2006; Maurer et al., 2003), and motivation to learn (Hurtz & Williams, 2009; Major et al., 2006; Noe et al., 2013). More novel to the context of informal learning are the factors of concentration, and of learning difficulties and ill health, both of which have seen limited discussion in previous work.

The final two groups are those concerned with the '***learning environment***', again borrowing terms used by Lohman (2000, 2005). '***Physical-structural factors***' incorporate a larger number of groups reported by Crouse et al. (2011), including 'resource constraints', 'lack of access', 'technological constraints',

'course/learning content and delivery', 'change', and the more structural aspects of 'structural and cultural constraints'.

This is where some of the biggest differences exist between informal and formal learning. Informal learning, by its very nature, is self-directed and unstructured, and so the content design and delivery is less likely to be a constraint given that individuals will choose their own learning activities. In some ways, however, aspects such as the work environment (including noise, possible disturbances) and job design may act in a similar way for informal learning, with such physical-structural aspects limiting one's ability to learn on the job.

Many factors, however, are the same for both informal and formal learning, which may explain why many barriers identified in this study are similar to those identified before, including a lack of opportunities and resources, unsuitable technology, a fast pace of change in the organisation, and insufficient funding or reward. One physical-structural barrier unique to informal learning is that of informal learning often not being recognised or accredited in the same way as formal learning programmes, and, as such, employees may perceive there to be less reward for participating in informal forms of learning.

*'**Psycho-social factors**',* on the other hand, incorporate the more cultural elements of Crouse et al.'s (2011) 'structural and cultural constraints', alongside 'interpersonal constraints' and 'power relationships'. Again, many barriers have been identified in previous qualitative and quantitative work, such as an organisational culture not supportive of learning, a lack of interpersonal support, and power and politics hindering access to learning. Interpersonal support, in particular, has seen plentiful quantitative study (e.g. Maurer et al., 2003). One psycho-social barrier identified as more unique to informal learning is that of 'organisational silos', in which different teams and work groups work in separate streams and there is little overlap or cross-interaction. This barrier may emerge as particularly important to informal learning given the importance of interpersonal learning from colleagues, and particularly, as identified when exploring research question two, from colleagues in other teams within the organisation.

2.2 THE ROLES OTHERS PLAY IN SUPPORTING INFORMAL LEARNING

RQ2: What roles do other people play in supporting employees' informal learning?

Much of the existing literature primarily focuses on the line manager and the role that they play in supporting employees' informal learning and development. Little of the existing research looks at the roles that other people might play in supporting learning.

In the qualitative work of this thesis, a hybrid approach, with inductive and deductive aspects, was used to explore who supports, or hinders, an individual's informal learning, and explore the role that these support sources play.

The general groups of support sources match with those identified in the literature review: managers, colleagues, organisation, and friends and family (e.g. Maurer et al., 2003). However, what was demonstrated in this study was that

there are important distinctions within each of these broader groups. Colleagues, for example, were found to be a diverse group, and could be thought of in terms of whether they were within, or outside of, the learner's immediate team, or whether they were direct reports, clients, subcontractors or suppliers. These different sub-groups each evidence different ways in which the group supports or hinders learning. This depth of understanding is important when encouraging individuals to reflect on and plan their informal learning participation.

When understanding the roles that these different groups may play in supporting, or hindering learning, House's (1981) categorisation of social support was identified as particularly appealing in the literature review, with this general model of social support perhaps also applicable to the specific context of informal learning.

Table 8.2 demonstrates how the roles identified in the thesis may map onto House's four categories of emotional, instrumental, informational, and appraisal support. Emotional roles include aspects of motivation and encouragement; instrumental roles include both the direct provision of informal learning opportunities, and also the provision of resources that facilitate participation in informal learning; informational roles include the suggestion of learning opportunities and also the more informational, advice-related aspects of informal learning; and appraisal roles include those aspects of feedback, reflection and benchmarking that allow individuals to reflect on their behaviours.

	Emotional	**Instrumental**	**Informational**	**Appraisal**
Managers	• Pushing and encouraging out of the comfort zone • Encouraging and building confidence	• Giving opportunities • Scheduling time or resources • Creating the right learning environment • Creating the right work environment	• Suggesting opportunities	• Role modelling behaviours
Colleagues	• Competition		• Sharing opportunities • Sharing expertise and knowledge	• Benchmarking
Direct reports		• Shortcut to learning • Guinea pigs • Managing people creates its own learning challenges • Managing people is time consuming	• Managing specialists	• Revaluating, validating and reinforcing learning
Clients	• Motivating to perform	• Providing challenging work • Client demands can compete for time		• Providing feedback
Subcontractors		• Instrumental learning through relationships		
Suppliers		• Instrumental learning through		

		relationships		
L&D		• Providing tools to facilitate informal learning, e.g. formal learning, personality psychometrics		
Professional societies		• Events and networking	• Newsletters and updates	• Providing standards and frameworks
Family	• Inspiration and motivation • Encouraging and building confidence	• Transferable experiences • Sounding board • Competing for time and attention • Work-home conflicts	• Sharing general workplace advice • Sharing specialist knowledge and skills	
Friends	• Competition	• Pub chat and friendly debate	• Suggesting opportunities • Sharing similar experiences	• Benchmarking • Offering feedback and reflection
Groups outside work		• Transferable experiences • Meeting new people		
Social media		• Online discussions and debates	• Finding opportunities and events • Finding news articles, videos and book recommendations	

Table 8.2: The roles, as identified in this thesis, that others play in supporting, or hindering, informal learning, mapped onto House's (1981) four categories of social support.

On the whole, this categorisation is helpful in understanding the broader roles that each group plays in supporting informal learning. That said, the specific context of informal learning challenges distinctions between instrumental and informational support. In many cases, sharing information itself can contribute directly to informal learning, and so such a behaviour could be classified as both instrumental and informational support.

The findings for this research question are not discordant with House's (1981) model of social support, but rather use this model as a foundation to offer greater detail as to the roles others play. Table 8.2 also highlights that, while House's four types of social support are all relevant to informal learning, each support source does not necessarily offer each of the four types of social support. For example, only two groups stand out as offering all four types of social support: managers and friends. Looking at the types of support, some groups are more important than others in offering emotional support, for example. Managers and family, in particular, have a number of different roles they play in providing emotional social support, such as providing incentive or inspiration, or helping to build confidence and provide encouragement.

While it is difficult to comment on the relevance of the relative importance of groups without further study, these differences may highlight the potential

importance of particular groups, or the importance of having a 'constellation' of groups who support learning, similar to the mentoring constellations described by Kram in the mentoring literature,

Comparing between the groups that support informal learning, there is surprisingly little overlap and commonality between the roles that they play in supporting informal learning. While this may be a by-product of the research design, this may also suggest that it is helpful to consider support sources as distinct, rather than grouping them into different types of supporters, as Bosley et al. (2009) were able to do so when considering those who support individuals' careers.

Furthering on the uniqueness of each support role, the qualitative study also shed light on to some of the specialist features of these groups, which are summarised in Table 8.3.

Support from	Specialist features
Managers	• May only contact with finished work
Colleagues	• Colleagues are there at the right time
Clients	• Particularly salient feedback
Subcontractors	• Developing specialist knowledge
Suppliers	• Offering an external perspective • Offering a high-level overview of the market or profession
Family	• Brutally honest • More patient and giving of time • Rounded view and a 'career-oriented picture'
Friends	• External to the organisation and not invested in decisions
Groups outside work	• Often actively sought out
Social media	• Wide network

Table 8.3: Specialist features of groups that were found to support, or hinder, informal learning.

While some groups offered similar instrumental or informational social support, such as suggesting opportunities or sharing knowledge, there were differences in the ways in which this was done. For example, colleagues were the only group that were often 'there at the right time'; and family members tended to offer brutally honest opinions and views, typically more rounded and career-oriented than other sources of support. These differences add depth to the understanding of the ways in which these groups may support informal learning, and such findings have not yet been seen in the learning literature.

2.3 FACTORS INFLUENCING LEARNING PARTICIPATION AND INTENTIONS

RQ3: Do individual differences (proactive personality, curiosity, Big Five, age, tenure) predict an employee's participation in (a) informal learning, (b) formal learning, and their (c) intention to engage in learning?

RQ4: Do situational aspects (autonomy, interpersonal support, time and role demands) predict an employee's participation in (a) informal learning, (b) formal learning, and their (c) intention to engage in learning?

RQ5: Which of the personality and situational antecedents studied are most important in explaining the variance in (a) informal learning participation, (b) formal learning participation, and (c) intention to develop?

RQ6: Which of the personality and situational antecedents studied are mediated by intention to develop in predicting (a) informal learning participation, and (b) formal learning participation?

Many of the antecedents hypothesised to be related to learning participation and intention were found to have a significant relationship with participation and intention. Most notable were the antecedents of curiosity and proactive personality, time and work demands, and interpersonal support. While many of these antecedents have been observed and discussed in previous studies concerning learning and development (e.g. Hurtz & Williams, 2009; Major et al., 2006; Maurer et al., 2003; Noe et al., 2013), curiosity is a particularly novel finding given that it has not yet been explored as a predictor of informal workplace learning.

In terms of interpersonal support, family and colleagues were found to be the most important predictors of informal learning participation; line managers the most important predictor of formal learning participation; and family support the most important predictor of intention to develop. Again, while previous research has found these sources to be predictors of general development (e.g. Birdi et al., 1997; Maurer et al., 2003), this study explores their relationship with informal learning, and also assesses their relative importance.

Generally, more variance was explained for informal learning participation and intention to develop than was for formal learning participation. For informal learning participation, personality variables explained more variance than situational variables; for formal learning, both types of variable explained similar amounts of variance in participation. Given that no study to date has compared informal to formal learning, this observation is particularly interesting.

Mediation analyses illuminated some particularly interesting effects not seen before in the literature: such as autonomy having an inconsistent mediation with informal learning, and age being fully mediated by intention in predicting informal learning. Findings from previous studies have been mixed, in terms of the relationship between age and learning, and between autonomy and learning. The exploration of these mediation effects may shed some light on the reasoning for these inconsistent findings.

RQ7: Are there differences in informal learning participation, formal learning participation, and intention to engage in learning (a) between home-workers and office-workers; and (b) between managers and non-managers?

RQ8: Do individual differences and situational factors predict informal learning participation, formal learning participation, and intention to engage in learning in

different ways for (a) home-workers and office-workers, and (b) managers and non-managers?

Differences in learning participation were also tested between two groups. As expected, home-workers participated in less informal learning than office-workers, but there were few differences in antecedents' effects on informal learning participation. A significant difference was also seen in the learning participation of non-managers and managers, with managers participating in less informal learning than non-managers, a direction contrary to that in previous research (e.g. Noe, 1996). As discussed in Chapter 7, both groups reported similar learning intentions, suggesting that an external factor may be driving this effect. Neuroticism was found to be the only antecedent that differently affected non-managers and managers in predicting informal learning participation.

2.4 DIAGRAMMATIC REPRESENTATION OF FINDINGS

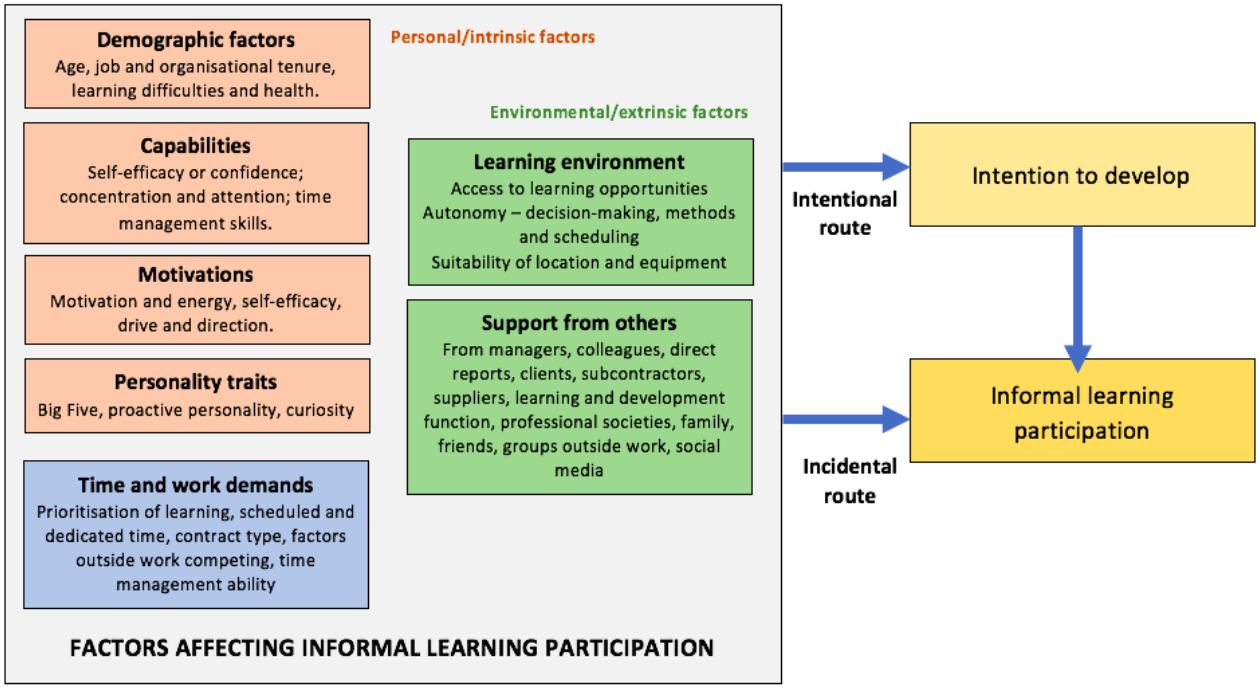

Figure 8.1: model summarising the concepts explored in the thesis, with influencing factors to the left, separated by personal (orange), environment (green) and time and work demands (blue). The routes by which these factors influence informal learning participation are illustrated on the right, with intentional informal learning mediated through intention to develop, and incidental informal learning not mediated through intention to develop.

Figure 8.1 summarises the key relationships explored in the thesis, incorporating key elements identified in the literature alongside the key findings of the studies. The factors that have been found or theorised to affect informal learning are illustrated on the left-hand side. These factors are grouped according to the taxonomy discussed when exploring barriers: personal, intrinsic factors; environmental, extrinsic factors; and time and work demands, which incorporate elements of both intrinsic and extrinsic factors. Further subdivision of these

groups is informed by Kyndt and Baert's (2011) literature review of the factors affecting informal learning and by Stuart's (1984) categorisation of environmental factors into physical-structural factors and psycho-social factors.

The way in which these factors affect informal learning can then take one of two routes: with factors meditated via an intention to develop (intentional informal learning); or with factors having a direct effect on learning participation (incidental informal learning).

While not explored in this thesis, there are other ways in which factors may interact in influencing informal learning participation. It may be that an individual's personality influences the support they receive; for example, somebody who is highly extrovert may find it easier to elicit interpersonal support from others. Personality could also act as a moderator of situational factors; for example, time management skills could moderate the relationship of high time demands with informal learning, or good attention and concentration could mitigate against a distracting work environment.

3 KEY RESEARCH FINDINGS

Integrating across the different studies and research questions, there is a series of emerging trends and themes that are apparent. Each of these is discussed in turn.

3.1 NEW FACTORS THAT MAY INFLUENCE INFORMAL LEARNING

3.1.1 Curiosity: the understated variable

Curiosity emerged as one of the most important antecedents of all those studied, and accounted for more variance in both intention and participation than most other antecedents. This strong relationship was even the case when controlling for other variables previously thought to be important, including proactive personality and the Big Five.

Despite this, this study is one of the first in which curiosity has been studied in terms of its potential effect on informal and formal learning participation. In the initial research design, curiosity was not identified as an important variable, and it was only as a by-product of qualitative work that curiosity came to be included for quantitative study. Curiosity was frequently mentioned by participants and by organisational contacts – and despite not being relevant to either of the qualitative research questions – this observation was able to be tested in the quantitative study strand. The relationship between curiosity and informal learning that has been demonstrated in this study greatly adds to more specific pieces of work that have studied this effect in particular samples (Moon & Ka, 2009) or with specific forms of learning (Reio & Wiswell, 2000; Harrison et al., 2011).

3.1.2 Autonomy: mixed effects remain, but with greater clarity

Like with curiosity, the original quantitative research design did not include autonomy as a study variable. However, given that autonomy was regularly mentioned in the qualitative interviews – both in terms of how a lack of

autonomy can act a barrier to learning, and how managers are important in creating a learning environment with sufficient autonomy, the decision was taken to include autonomy as a study variable in the quantitative research.

The literature review shows previous research has been mixed in terms of autonomy's effect on learning participation: some finding autonomy to have a positive relationship with participation (Gijbels et al. 2012; Kyndt et al., 2011), and others finding autonomy to have a negative relationship (Doornbos et al., 2008; Ito & Brotheridge, 2005). In this thesis, the potential reasons for these mixed effects have been explored – through considering informal and formal learning separately, by considering three different types of autonomy, and by considering how autonomy holds effect through, and independent of, intention to develop.

The dual route by which scheduling autonomy affects informal learning offers new insight. With greater scheduling autonomy, individuals may more likely intend to participate in develop than those with less scheduling autonomy, and may then, as a result, participate in more informal learning activity than those with less autonomy. However, independent of intention, the effect of scheduling autonomy on informal learning participation is of the opposite direction: with those with greater scheduling autonomy participating in less informal learning than those with less scheduling autonomy. This mixed effect may explain why some previous findings have been mixed, and suggests that autonomy – specifically scheduling autonomy – can work in multiple ways. While employees have the best of intentions to participate in learning, especially if they have plenty of scheduling autonomy, it may be that when they actually experience scheduling autonomy, they are drawn to, or distracted by, tasks other than informal learning.

The other contrasting effect was that of decision-making autonomy, which was found to have a positive relationship on informal learning – the opposite direction to the other types of autonomy. Again, the fact that two types (scheduling, methods) exhibit a negative relationship, and this type (decision-making) exhibits a positive relationship, may explain the mixed effects found in previous studies. With decision-making autonomy, it is theorised that those who have to make decisions tend to participate in more learning than those who make fewer decisions, so as to be sure they are making the right decision.

3.1.3 Family support: as important as line managers?

Family support, as with curiosity and autonomy, has rarely appeared by itself in previous research into informal and formal learning participation. Yet, in both the qualitative and quantitative work in this thesis, family support emerges as one of the most important drivers and influencers of informal learning participation.

In the qualitative work, family were identified as both a barrier and a source of support. While, for the barrier research question, family were purely identified as a conflicting pull on time resources, the support question offered up a number of roles that family members may play. This included acting as an inspiration and providing motivation, encouraging and building confidence, and sharing general and specialist advice. One of the most common examples offered by participants of how their family supported informal learning was as an informal sound board, with several examples where employees' partners, in particular, acted as an

informal coach. One of the main takeaways from the qualitative research, although not covered by the research questions themselves, was the way in which participants responded in answer to the question "do any family members support or hinder or your informal learning", with many participants answering with firm enthusiasm.

The importance of family support was also seen in the quantitative research. It was the most important interpersonal support source for intention to develop and informal learning, and the second most, after line manager, for formal learning participation. The fact that family support was more important than line manager support in predicting informal learning situation is particularly enlightening; both academics and practitioners have tended to focus on the line manager – but it may be that family support now warrants more attention.

Also of notable interest was the way in which family support affects informal learning participation: with a strong mediation through learning intention. This quantitative finding aligns with the qualitative research that discussed the inspirational and motivational roles that family play. One quote in particular stands out in illustrating this point:

> "Since I've become a dad your whole outlook on why you're here and what you're doing is completely different. He's motivated me to do more with my life … it's the root of why I'm kind of pushing forward and striving forward … as a dad you want your little boy to be proud of you, and he's my best mate, do you know what I mean?"

This finding is similar to that seen in the careers advice literature, in which advice from one's family is often taken more seriously by recipients than advice from careers advisers.

3.2 A NEW TAKE ON HOW SOME FACTORS MAY AFFECT INFORMAL LEARNING

3.2.1 Colleagues are a diverse group

While existing research has addressed the fact that colleagues may support and influence learning, colleagues have typically been considered as one homogenous group. What became apparent in the second research question (the qualitative exploration of the role others play in supporting informal learning), is that colleagues can be thought of in a number of different ways: within and outside the learner's immediate work team; direct reports, those who report into the learner; clients, who are sometimes seen as 'colleagues' by the learner; and subcontractors and suppliers. There has been limited discussion of these different groups in the existing literature.

When comparing the ways in which each of these groups supported, or hindered, informal learning, some distinct differences did emerge. One particularly interesting category was that of direct reports, and the fact that this group was often used a 'shortcut to learning' with learners using their subordinate team members to facilitate their own learning. This supporting role was not observed in

any other group, given that the learner cannot control other colleagues' work or tasks, and would not have been observed if colleagues were considered as one larger group. Two types of colleagues, suppliers and subcontractors, were also notable in the qualitative study, given that they emerged from the interviews. These groups have rarely been discussed in the academic literature, but participants offered insightful examples as to how they supported informal learning.

Although colleagues were considered as one group in the quantitative study, primarily to keep the survey of reasonable length, it may be interesting to explore quantitatively how these different groups of colleagues differently affect informal learning participation. Practitioners also need to be aware of these different groups and the different roles they may play, so that they can best coach and nurture informal learning.

3.2.2 Time and work demands: a variable with nuances

Time and work demands have previously been found to be one of the most prevalent barriers to, and factors influencing, informal learning participation. This finding was supported in the quantitative study, in which work and time demands were found to be one the most important predictors of informal and formal learning participation, a relationship not mediated through intention. Similarly, in the open-ended survey question asking about barriers to informal learning, a lack of time was mentioned in 57% of responses.

However, on closer inspection, the qualitative work also highlighted that 'limited time' was not a simple barrier to informal learning, and there were a number of nuances that emerged. These nuances offer a more detailed indication as to exactly how time and work demands affect informal learning participation.

While time is ultimately a limited resource, participants offered a number of insights that may be useful in exploring how employers and learners may be able to limit its effect on learning participation. The first insight was that learning is often perceived as being lower priority than day-to-day work, work targets, and change in the business. As such, it may be that individuals need to exercise self-discipline in prioritising their own learning, and organisations and line managers may need to support this higher prioritisation. Participants also referred to the need to schedule time for informal learning, and how it was sometimes difficult to get time approved, work covered, or targets relieved. Participants also spoke of how unpredictable workloads made it difficult to schedule time for learning. Again, employers may have a role here; if they wish for their employees to engage in more informal learning than at present, they may need to take targets into account, provide cover and adequate staffing for when employees are engaging in learning, and help learners time-manage their workloads. Other ways in which time affected learning included the learner's contract type, such as the idea that part-time employees had less time for informal learning than full-time employees, and the fact that one's home and family life also competed for time. Also discussed was the idea that individuals may differ in their ability to manage their time, a skill that perhaps may be developed through training.

3.2.3 Personality matters most for informal learning

The importance of personality was most obviously seen in the relative importance analysis in the quantitative study. Here, personality antecedents explained far greater variance than situational antecedents – by a ratio of around three to one – in both development intention and in informal learning. Both were equally important in predicting formal learning. Even when accounting for curiosity, which is strongly related with informal learning, the personality factors still accounted for greater variance in informal learning (16.4%) compared to situational factors (9.5%).

This is a particularly insightful finding, especially given that much of the previous research has either tended to focus on formal learning alone, or has grouped informal and formal learning into general workplace learning. For informal learning, the effects of previous studies may not be as generalisable as first thought. For practitioners and organisations, there are also notable implications: if situational variables are less important than personality, how can they support informal learning as effectively, given that they hold limited sway over one's personality?

The importance of personality factors was paralleled in the qualitative study too, with one of the main categories relating to 'personal factors'. A number of participants said how their lack of self-discipline, motivation or drive hindered their informal learning, and a number explicitly commented on how they tended to use reasons such as a 'lack of time' as a convenient excuse. One participant highlighted the importance of personality factors over situational factors:

> "I think nothing can limit a person to learn if he/she really has an urge."

Indeed, perhaps it is the case that one's self-drive, motivation and enthusiasm for learning can overcome obstacles and barriers that may otherwise act as a barrier to learning.

3.3 DIFFERENT RELATIONSHIPS WITH DIFFERENT OUTCOMES

3.3.1 Differences between informal and formal learning

Given that much of the previous research has focused on general workplace learning, or formal learning alone, it was considered important to assess the potential differences between informal and formal learning. On the whole, the two were found to be different in terms of the barriers identified and in terms of the way in which antecedents predict participation. There may, therefore, be good reason to conduct future research specifically on informal learning rather than grouping both informal and formal learning together.

In terms of the qualitative work, the two research questions highlighted barriers and ways of support that were unique for informal learning. Barriers found in earlier studies, such as 'cost' or 'course content', for example, were not found in the specific context of informal learning.

In the quantitative study, the antecedents explained far more variance in informal learning participation than they did in formal learning participation, with personality variables particularly more important in explaining variance in informal learning than formal learning. Given that formal learning is more likely to be organisation-controlled, it may be that some antecedents, especially those relating to personality, are less able to hold effect.

3.3.2 Incidental and intentional formal learning – the routes through which antecedents may take effect

Informal learning can be considered as intentional, where learners purposely engage in activities to learn, or incidental, in which they take advantage of learning opportunities that naturally occur as part of their day-to-day work. No research to date has considered the differences between these two types of informal learning, and in this study, these differences were assessed by looking at whether antecedents' effects on informal learning were mediated through intention (as intentional learning would be), or were directly affecting participation (as incidental learning would).

This key finding was mainly apparent in the quantitative research, in that some antecedents were fully mediated by intention (age), others were partially mediated by intention (curiosity, proactive personality, support from family, scheduling autonomy), and others were not mediated by intention (support from colleagues, support from manager, time demands). These findings offer new insight into how the antecedents may act: with fully mediated antecedents only affecting intentional informal learning; unmediated antecedents only affecting incidental informal learning; and partially mediated antecedents affecting a mixture of both intentional and incidental informal learning.

Although not directly addressed in the qualitative study, examples were offered of both incidental and intentional informal learning. For example, family members could limit the time or energy a learner has available to engage in informal learning, which would affect their incidental learning; but family members could also act as an inspiration and offer motivation, thus affecting intentional learning.

4 CONTRIBUTION TO ACADEMIC UNDERSTANDING

This thesis makes a number of contributions to the academic understanding of learning and development, and, in particular, the academic understanding of informal learning.

First and foremost, there are few examples of existing work that have focused on informal learning. Many studies in the learning and development literature have tended to focus on training and formal learning, with others covering both formal and informal learning activities under the same umbrella of 'workplace learning'. As seen in this thesis, however, formal and informal learning do have their differences, and there is merit in studying the two as distinct forms of learning.

Going beyond just studying informal learning, this thesis also considers the differences between formal and informal learning, and between incidental and

intentional informal learning. No study to date has explored the differences between formal and informal learning (Kyndt & Baert, 2013), and no work has explicitly looked at differences between incidental and intentional informal learning. This consideration facilitates a deeper understanding of how antecedents may relate differently to each of the forms of learning, and in some cases, may explain why existing research has shown mixed effects for certain antecedents.

Rarely seen in the literature are mixed method studies, with most tending to be either fully quantitative or qualitative. While this may be because it is harder to publish a mixed method study, and so researchers may tend to separate their mixed methods work into separate journal articles, there are actually few researchers in the field who frequently conduct both quantitative and qualitative work. Yet, this dual method approach offers a unique viewpoint: tackling the same issue, in this case informal learning, through different lenses. Many of the key findings of the thesis are expanded and developed when considering both methods, and this integrated approach allows many of the detailed accounts and explanations to emerge.

Considering each of the two studies separately: the qualitative strand was used to answer two research questions. The first, relating to barriers, was proposed so as to create a hierarchical taxonomy of barriers to informal learning. The taxonomy that emerged builds on those in the existing literature in several ways: firstly, it groups barriers in a hierarchy; it is specific to informal learning, rather just considering 'workplace learning'; and it is based on primary data, rather than being derived from secondary data sources. The second research question is also novel. Little work to date has gone into detail about the roles that others play in supporting learning, let alone in supporting informal learning. Much of the existing research has focused on the line manager, whereas this study highlights new sources of support – such as direct reports, subcontractors, and suppliers – and offers a detailed description of the ways in which each of these support sources may support, or hinder, informal learning.

The main contributions of the quantitative research are in relation to three antecedents in particular: curiosity, autonomy, and the various types of interpersonal support. Curiosity has rarely been discussed in the existing literature surrounding development activity, yet is found to be the most important antecedent of all those tested in this study, more so than other antecedents that are regularly assessed such as the Big Five or proactive personality. Previous findings have been mixed in terms of the effect that autonomy has on informal learning, yet this study sheds new light on this topic: by considering three types of autonomy and by assessing autonomy's mediated and direct effects on informal learning, new ideas as to how autonomy may take effect are suggested, which may account for the mixed findings to date. The final group of antecedents – interpersonal support – offer a novel contribution too. The comparison between intention, informal learning and formal learning offers a new understanding as to which sources of support are most important for different types of learning activity, as well as how they possibly hold their effect.

The quantitative study also offers contributions in terms of the methods it employed. Relative importance analysis has not been used, to date, in the literature surrounding workplace learning, and its use in this study allows antecedents to be ranked or grouped in accordance to their relative effect on learning participation. These findings can guide future research, allowing researchers to focus on antecedents that matter. There have also been limited studies that have begun to explore the mediated effect of informal learning, although this has been shown in formal learning.

Both studies also explore new territories: in terms of the support sources they consider, and in terms of the samples used and the context in which the studies are carried out. Much of the existing research has tended to focus on the role of the line manager, with only a few studies going further to consider the role of colleagues; some have quantitatively assessed the impact of friends and family. However, in this thesis, a wider range of support sources are considered: breaking down colleagues into different groups, and including a number of support sources external to the organisation. In addition, the thesis makes use of samples not yet used in the informal learning literature: an energy firm, a small charity, and a telecommunications firm. The sample itself also has its benefits, particularly the quantitative sample used. The organisation studied is large, diverse, and geographically dispersed; and the sample drawn from the organisation is broadly representative of the organisation itself. The strength of this sample may mean that is may be more generalisable than many others.

5 Applications in Practice

The findings of the research have already had some implications in practice, with a summary of qualitative findings being distributed to participants and their participating organisations, and an early summary of the quantitative findings presented back to the participating organisation. For the quantitative survey, each participant could also opt-in to receive a personalised learning report that offered feedback in terms of their Big Five traits, compared against all other participants, and feedback in terms of their learning activity participation broken down by activity group, again benchmarked across all other participants. An example report in included in the appendix.

The feedback to this report was mostly positive, with a follow-up survey finding that 90% answered agree or strongly agree to a statement saying that the project was a worthwhile use of their time, 85% saying that the report offered new insight into learning behaviours, and 65% saying that the report offered new insight into their personality. Several qualitative comments were offered from participants, highlights of which include:

> "This should be made compulsory to all employees and possibly used as a metric during learning allocation / application."

> "Extremely useful inputs from neutral observation perspective. True to ground. Thanks"

> "I wish I had had this report a couple of weeks ago as it would have helped me greatly with an assessment I had to go through and I think I would have done better at it with this insight. Interesting report as it put perspective on my personality as well as learning style. The suggestion of a secondment or change of role was very meaningful as at the time of completing the survey I was on a secondment and have moved to a different role. The survey has actually made me feel quite positive about myself during a very difficult time. Worthwhile and maybe something employers would like to take up if they are truly keen to build a people based organisation. giving an employer a view of their peoples personality traits, even anonymously would help to drive engagement and thereby improve performance and people satisfaction. Thank you"

> "A useful tool which I will use to get the most out of my learning and development plan."

In general, the findings of this thesis indicate the need to recognise the wide variety of people who may support informal learning, particularly those outside the workplace – such as family, friends and social groups outside work – and to consider colleagues in their different forms, such as within and outside the learner's immediate team, direct reports, clients, and suppliers and subcontractors. Given that these sources may already influence informal learning, managers, learners and organisational support programmes should include them in personal development planning, coaching sessions, and one-to-one development conversations, recognising the role of these other groups and the opportunity to draw on their support. Family support, in particular, emerges as one of the key influencers of learning intention and participation, and again, those supporting learning and development in organisations need to be aware of families' influence, so that they coordinate and work alongside such existing support.

The other part of the qualitative study also offers new insights for practice, with a taxonomy of barriers that may hinder learners' ability to participate in informal learning. These barriers themselves suggest ways in which both employers and employees can begin to work together to remove, or overcome, these barriers. For example, in terms of the time and work barriers, it may be that line managers can assist their employees in scheduling time outside for informal learning, removing work targets, covering work when needed, and helping prioritise learning in line with work tasks. This may be particularly important for those who lack the self-drive or self-discipline to do this for themselves.

The quantitative study also suggests specific ways in which organisations can support learning, with statistical predictions as to which antecedents may go on to predict learning participation. While personality is assumed to be stable, and so organisations can probably do little to develop or change personalities, such findings suggest that it may be possible to use personality measures in identifying those who are less likely to naturally participate in informal learning. Organisations can then identify such learners and offer them targeted support in order to boost their learning. Two personality variables stood out as being particularly salient – curiosity and proactive personality – and these two "narrow traits" may be a particularly effective measure for organisations given their strong relationship with informal learning. The situational factors identified, however, can be changed, and so organisations can explore ways in which interpersonal support, autonomy, and work and time demands can be influenced to support and promote informal learning.

Taken in combination, all three studies together suggest the importance of line managers in fostering a positive learning environment, and the qualitative research questions, in particular, offer ways in which line managers do this: providing autonomy for employees to engage in trial-and-error learning, make mistakes, and learn in order to make decisions; encouraging a culture in which no question is too stupid, and learners are not afraid to speak out or try new things; coaching, rather than telling, reports how to go about new and unfamiliar tasks; offering access to learning opportunities and challenging projects; and offering motivation, and that additional 'push', to learners that may not be predisposed to stretching themselves out of their comfort zone by their own accord.

In terms of practical steps for application, one way in which all the findings of this thesis could be utilised by employees would be through a self-guided personal development planning tool. This could take the form of a workbook, or an online website or mobile app, that guides individuals through a reflective and development planning routine. By highlighting common barriers to learning, or common sources of interpersonal support, individuals could be prompted to self-reflect, or discuss with managers or colleagues, about the opportunities and challenges they may face when engaging with informal learning. This workbook or app could then encourage participants to set a series of goals based on the self-reflection, so that participants can focus on and monitor their behaviours.

6 LIMITATIONS

As with any research project, this thesis and its findings have a number of limitations and opportunities for future research. Many of these limitations emerge in the attempt to find a balance between using the most rigorous methods, whilst trying to establish and maintain organisational access.

As outlined in Chapter 5, any piece of research can be easily influenced by the researcher and both the qualitative and quantitative studies may be influenced by the researchers' values and background. Even quantitative methods, which are seen by positivists as researcher-independent and detached from their values and beliefs, may be influenced by the researcher. This effect is wonderfully

summarised by O'Neil in her consideration of 'big data': "Our own values and desires influence our choices, from the data we choose to collect to the questions we ask. Models are opinions embedded in mathematics." (O'Neil, 2016). To combat such issues, due care and attention has been given in the design and interpretation of research, and a reflective statement is provided in the appendix.

Perhaps the most key limitation of any informal learning research is the fact that informal learning is difficult to measure due to its tacit character (Marsick & Watkins, 1990). This may have led to an under- or overestimation of informal workplace learning in this study. However, the foundation of informal learning in this thesis is based on the idea that there is at least some intent for growth or development, and that the learner is thus aware of their learning. A measure using particular activities was also used in the quantitative study to try and help participants recall their learning participation; and the qualitative interviews started with a discussion of learning participation and an explanation of the types of informal learning in which one can participate, again to help prompt participants to recall informal learning events.

Like with any study, the findings may be limited to the specific sample and context. However, given the size and breadth of the large international telecoms firm, it could be said that the findings of this study are likely to be more generalisable than most, with the final sample including a range of employees across professions, ages, gender, tenure, and occupational level. There is, however, the important limitation highlighted in Chapter 5, in that the culture of the organisations studied are ones that are supportive and encouraging of learning and development, and that this positive atmosphere may be not be typical of your average organisation.

Looking at the qualitative study, in particular, it can always be argued that the data could be arranged into different themes or categories, and different conclusions drawn. While some measures, such as reflexivity, triangulation, audit and peer checking, were employed to counter such claims, recognition is given to the fact that different researchers may always interpret similar data in different ways. The presentation of data in this thesis is designed to offer new insights and challenge existing ideas, so as to further the understanding of informal learning.

Focusing on the quantitative study, there are a number of limitations specific to the quantitative design. Firstly, as a cross-sectional design, it is not possible to validly infer any casual relationships, and only statistical effects can be derived. While for personality factors, this may be less of an issue, given that personality is assumed to be stable, this may not be the case for the situational antecedents. For example, interpersonal support could plausibly result from learning participation, in that those who participate in more development activities than others have a more accurate impression of the support they receive (Hurtz & Williams, 2009; Kraimer, Seibert, & Liden, 2011). Similarly, there may be other cause and effects that are not accounted for in the study, such as the idea that personality may affect support, which in turn affects learning participation.

In general, the survey suffers from the problem of Common Method Variance; all measures are self-report from the same individual, and it is plausible that the

obtained results could be measuring a relatively similar concept and there be multicollinearity between variables. While VIF scores indicated that multicollinearity was unlikely, these scores are merely a guide, and not a rule. Whilst the utilisation of other sources of information would be ideal – such as from supervisors or organisational records –this was not possible in this research context. Some of the specific measures themselves could be particularly subject to bias. For example, the measures of interpersonal support are subjective, rather than objective, ratings. Such a measure may say more about the person than the support they receive, with those of a negative disposition perhaps perceiving support to be lower than it actually is. That said, perceived support is likely to be more salient than actual support in predicting motivation and intentions to develop, and a truly objective measure of support is somewhat difficult, if not impossible, to obtain.

Similarly, with learning activity, the measure relies on self-report accounts of participation. Whilst self-report gives an advantage in that it allows us to account for smaller activities that the organisation and peers may not be aware of, it is also subject to a self-promoting bias, or employees may be liable to forget what they have actually done. As such, these types of self-report measures may be affected by personality. A relatively objective diary study with activity prompts may be helpful in providing a more accurate representation of development, but this would take more time for participants, and so it may be difficult to find organisations willing to participate.

The study of intention in the quantitative strand may also raise a few concerns, with the scale-based response options for intention to develop possibly influenced by a social desirability bias. While the participation measures were anchored based on frequency of participation over a recent time-period, the intention scale was more general, and so some effects, such as that of agreeableness on intention to develop may have been exaggerated. This, however, has been reflected in the subsequent discussion. On a similar note, to study the differences between intentional and incidental learning, assumptions were made that these two types of learning could be separated out based on intention to develop acting a mediator. While this assumption seems fair, it may be that intentional and incidental learning can better be distinguished in a new measure for informal learning.

All in all, while the study has been designed to try and alleviate as many potential limitations as possible, many of those that remain are ultimately driven by the need to achieve a balance between the gold standard of scientific methods and the wishes and needs of the participating organisation and employees, so that a sample can be secured.

7 Further Research

This thesis has touched on, and highlighted, a number of new avenues for exploration and new variables of interest that warrant further research. Two variables stand out above all others: trait curiosity, and support from one's family.

Given the limited exploration of both of these antecedents in the literature so far, there is plentiful scope and potential for further study of these variables.

For curiosity, questions remain as to exactly how it holds its effect on learning participation, and, given the potential construct overlap between curiosity and informal learning, there may be necessity for research into the distinctiveness of the two. This thesis has also only covered trait curiosity, and has not considered state curiosity, a more transient form of curiosity that is susceptible to change. Future work may seek to understand differences between trait and state curiosity, and explore ways in which organisations and managers may be able to influence and foster state curiosity in order to benefit informal learning. Firstly, differences between trait and state curiosity may be explored through a cross-sectional quantitative study, measuring whether both trait and state curiosity measures correlate similarly with informal learning participation. As state curiosity may be transient in its nature, a within-subjects comparison across time may be worthwhile in seeing how fluctuations in state curiosity may affect short-term informal learning participation.

If state curiosity exhibits a similar relationship with informal learning to that observed with trait curiosity, then a second study might follow in which interviews and focus groups are conducted with both employees and managers, exploring the means by which state curiosity may be fostered in employees by their managers and organisations. The findings of this study may then used to develop a practical intervention designed to boost employees' state curiosity, and subsequently boost their informal learning participation. This intervention may then be tested, using a randomised control trial, to see whether it works. This trial may include both 'treatment' and 'control' groups, with employees randomly assigned to a group that either receives or does not receive the intervention, hence allowing a between-groups analysis of intervention effect. This trial may also include pre- and post- intervention measures of both state curiosity and informal learning, so as to assess differences within individuals that result from the intervention.

For family support, while this study has highlighted the ways in which family can support learning, in order for organisations to assist such learning, further work may need to explore how employer and family may cooperate and coordinate in the support of an employee's informal learning. It would be particularly interesting to explore the ways in which support for informal learning is perceived by the family member who is supporting, either individually or as part of a joint interview.

Looking more broadly than family support, the qualitative study of the ways in which many other people support learning suggests there may be merit in further research in this area. In this study, this phenomenon was explored qualitatively so as to identify the sources of learning support and then begin to understand the ways in which these sources actually supported, or hindered, learning. Taking this one further, it would be interesting to translate these findings into a quantitative measure, and, using a larger sample, conduct a frequency analysis to assess which sources and roles are more common than others. In the quantitative study in this thesis, several interpersonal support sources were measured – namely managers,

organisation, family and friends, and colleagues – but these measures could be developed in a future quantitative study, to assess the correlations between other support sources – such as direct reports, suppliers, groups outside work – and informal learning participation. Furthermore, it would be interesting to begin to explore the quantitative impact of such support, and assess the potential value of having, for example, a supportive family member.

Aspects of personality and interpersonal support could also interact, and quantitative study may be useful in this regard. It may be that individuals of different dispositions (e.g. Big Five traits) differ in the interpersonal support that they require. For example, individuals who are less emotionally stable may benefit from more emotional support from colleagues and family members than individuals who are more emotionally stable. As a starting point, a cross-sectional quantitative study could be employed, with measurements of the Big Five, various interpersonal support sources and types, and informal learning participation. Moderation analyses could then be used to test hypotheses relating to such interaction effects between interpersonal support and personality.

Given the fact that informal learning is difficult to measure, it is necessary to keep studying it in new contexts and with new samples so as to develop consensus and a broader understanding. As observed in the differences between home-workers and office-workers, and between managers and non-managers, informal learning may not be the same, or predicted in the same way, in different groups, suggesting potential for future exploration into the differences between individuals of different job roles, professions, and work environments.

While the measures used in this thesis are adequate for the research questions and objectives presented, opportunities for measurement development and refinement have been identified. Firstly, in terms of the social desirability bias perhaps inherent in the development intention scale, it may be that future research needs to explore ways in which intention and participation can be suitably compared using similar response options. Informal learning measures may also be developed to take into account differences between incidental and intentional informal learning, and such measures always need to continually evolve so as to incorporate new and developing methods of informal learning. Indeed, in this research, participants spoke of ways of learning not covered in Noe's original informal learning measures, such as online communities of practice and staff intranets.

In the quantitative strand, the relative importance analysis offered a new take on how antecedents may affect informal learning. There may be merit in future work using such a method with other antecedents that have previously been discovered or theorised to influence informal learning, such as self-efficacy or career orientation. The greater understanding of the relative importance of antecedents also means that researchers can begin to concentrate on a more select number of antecedents, choosing those that are more closely related with learning. By studying a more selective sample of variables, researchers can begin to delve deeper into how they affect informal learning, whether that be focusing on them in qualitative study so as to understand the processes, or beginning to test more complex moderated and mediated models.

Previously underutilised methods also showed promise in the qualitative work, with the repertory grid proving to be particularly beneficial in the consideration of members of a learner's support network. While its use in this study was limited, although it did provide an excellent way to anchor and ground participants' responses and consideration of others, the repertory grid offers many other powerful tools: including the potential for the use of the emerging constructs to establish themes, or for the ratings provided by participants to be analysed quantitatively to explore differences between sources of support ("elements") or between different constructs.

8 CONCLUDING REMARKS

All in all, this thesis makes a number of key contributions to the existing literature, being one of the few to explicitly study informal learning as a form of learning distinct from formal learning. Other distinctions made between intentional and incidental learning are also novel in the learning and development literature.

The three most prominent takeaways from the thesis, one from each study, may be suggested as follows: that 'a lack of time' is often reported as a barrier to learning, but it tends to be a lot more complicated than that, and employers and employees should recognise the factors that affect the time available for learning; secondly, that there are a wealth of other people who can support learning in different ways, and learners can benefit from drawing on a diverse range of support sources, including the many different types of colleagues, and people outside of the workplace; and finally, curiosity is an extremely important, yet understudied, antecedent of informal learning participation, and there is much potential for future research into the role of curiosity in supporting and predicting informal learning.

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Appendix 1

Reflective statement

Reflective statement

Writing a reflective statement is probably something I wouldn't have envisaged myself doing several years ago, having been brought up as a devout positivist and told to think that research and researcher were entirely independent. My experience of qualitative research methods was limited to a twenty minute part-lecture during the entirety of a three-year undergraduate degree.

Until I started the PhD, I had never undertaken any qualitative work – or given it much thought – but given the doctorate offers an opportunity for challenge, reflection and debate, it felt like the perfect time to engage in an academic equivalent of a "teenage rebellion" and dip my toes into qualitative work, while also still doing some quantitative study that I'd grown to love and with which I felt more at home. Mixed methods! How even more rebellious…!

My grapple with trying to understand how best to undertake good qualitative work meant that I questioned many of the assumptions I'd previously made: those primarily centred on the role, or more specifically the independence, of the researcher in their research. Over time, this meant that my own ideas about work psychology, research, and "good science" were challenged and developed. A reflective statement now feels especially important – allowing me to share with others my background, beliefs and preconceptions, and consider ways in which they could have influenced my research questions, research design and conclusions.

Learning and development: How I feel about it

Learning and development is important to me, and I personally see value in engaging in learning activities: to boost my employability, but also because I naturally enjoy finding out new things and feeling a sense of accomplishment that often follows a successful learning endeavour. As a manager, I think it is important to develop my team and support them in their learning – to help them perform better in their job, to help them find new things they may enjoy doing, and to help them develop and grow as an individual even if that means they later choose to work elsewhere. Supporting my team's learning allows them to experience new ideas and ways of doing things, and challenge and broaden their views and approaches – and all of these things allow us to try and perform better and offer a better service. I appreciate that this view may not be the case for others – and so, in the research, we tried to reach out to a broad range of people, seeking out those who may not be as passionate about learning.

My experiences of work

I've spent most of my adult life as a student – I'd had a year's full-time work experience before beginning the PhD, but regularly worked casually during my undergraduate degree and full-time during vacations purely to satisfy my boredom and earn some money to pay for the MSc. As my own view of the

workplace is limited, I like to think that this allowed, and even encouraged, me to keep an open mind when considering others' experiences in this research. I should also recognise that my life experiences, on the whole, are one of privilege – as a white, middle-class male with a university education. In my research, particularly the qualitative research, we purposively sought out participants from a wide range of demographics and experiences so as to add diversity to our sample and challenge my views and thinking.

As part of Chapter 6, I go into detail as to the ways in which I have tried to improve the quality of my research and create opportunities to reflect on my potential biases. These opportunities have included: discussion with others, including my supervisors and my fellow PhD students (including an action learning set that we could help each other reflect on our qualitative work); leaving a gap between data collection and analysis, and coming back to the data at different stages; presenting initial findings at a conference of work psychologists, and presenting initial findings back to the organisations involved; and – one of the most salient ways for me – discussion with friends in the pub or over dinner, who often were one of the most critical sources of feedback and challenge!

Why did I study this topic? How did it evolve?

I think one of the important things to consider is why I chose to study this topic, as my reasons for choosing the research topic may influence the conclusions that I draw. For my MSc dissertation, I chose a similar topic, looking at personality factors that predicted employees' participation in a broad range of general development activities. This topic was chosen then because an organisation offered an opportunity for me to work with them and were interested in something in the area of employee development participation following development centres.

I didn't intend on doing a doctorate originally – but it was when I wrote the discussion section of my dissertation that I found that I had more questions that I wanted to answer – exploring the topic in a larger and more general sample (the MSc had 83 survey responses and was purely with those who had recently been on a development centre), and exploring the role of other people in supporting learning (something which was referred to in passing conversations separate to the survey and in feeding back the findings).

The informal learning take on the research was primarily inspired by Noe and colleagues' 2013 paper, which offered an obvious – yet underexplored – way to split up development activities. The fact that no research had yet contrasted informal and formal learning offered an exciting opportunity for me to make a useful contribution, and so during my first year, my research topic moved from the consideration of general development activities (especially in relation to career development) to the consideration of informal learning. My motivations at this stage were for the quantitative study, identifying antecedents of informal learning, and a qualitative study of those who support development (RQ2). The

barriers research question came up later during the research design stage, based on discussions with organisational partners, who often asked the question as to what may act as a barrier to their employees' informal learning. As such, this research question was added in, initially at least, to primarily satisfy the organisations. Yet I think this question now adds a valuable contribution to both the overarching story of this thesis, and to the informal learning literature as a whole.

The quantitative study proved to be a challenge of some self-discipline. While the initial research questions were focused on personality and situational antecedents, given the large dataset that was obtained, it later became tempting to try more complicated and "sexy" statistical techniques, and I sometimes found myself getting bogged down in the data and being guilty of data mining to find the most exciting things that I felt may excite others. After getting lost for a while, it was when I re-read my confirmation review and original hypotheses that I became aware, and remembered that there remained plentiful merit and value in sticking with my original research questions.

What do I think now?

I like to think that my thesis offers many helpful contributions – both for the academic understanding of learning and for organisations. There are many findings with which I personally identify, and I can offer examples of how I encounter these barriers/am supported in these ways by others/how these factors affect my learning. However, there are also many examples and findings that I had not anticipated, that are not the case for me, and to which I cannot personally relate. In my consideration and discussion, I have actively considered these differences in ensuring that I give all findings – whether I encounter them or not – equal weighting and importance.

I appreciate that the findings of this thesis have their limitations – and this is reflected in how I have expressed these findings back to the organisations with whom I have worked. My thesis does not offer a definitive 'answer' as to how organisations can support their employees' development – but offers more tools for the toolkit, shedding light on new things that learners and their line managers and development coaches may consider. Not all barriers or routes of support will hold true in the same way for every employee, and this is not something that I aim to suggest, or even encourage. Instead, I aim to develop broader awareness and encourage learners to consider and reflect on their learning in new ways.

Appendix 2

Interview information sheet

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Interview about your learning and development experiences

Researchers at the Institute of Work Psychology (University of Sheffield) are asking you to participate in an interview about your workplace learning and development experiences.

This interview is part of doctoral research being completed by Stephen McGlynn at the University of Sheffield. We are interested in how employers can support their employees in their self-directed learning and development. This interview is an opportunity for you to share your opinions and perceptions in a confidential manner.

We will use our findings to make recommendations for improving learning and development in your organisation and other organisations that are participating. The results will also form part of one or more academic publications, and we are happy to send you a copy of the study's findings.

Your responses are confidential.

We are asking a number of employees at your organisation and a few others throughout the country to participate in this study. We are not asking for any names, so no one can know who has participated. *This project was not initiated by your employer. Your employer will never see or hear your individual responses to the questions*.

The researcher will make an audio recording of this interview to help with the analysis post-interview. Your audio recording will kept no longer than is necessary, and will not be made available to anybody external to the project, including your employer.

The interview will take approximately one hour.

Over the course of the hour, you will be asked questions about your participation in self-directed learning and development activities relating to your work.

Participation is voluntary.

If you choose not to take part in the interview, there will be no penalty and it will not affect any aspect of your employment. You do not have to answer any questions you'd rather not answer.

If you have any questions about this project, please contact Stephen McGlynn, the lead researcher, at s.mcglynn@sheffield.ac.uk.

You may keep this information sheet if you would like.

This project has been independently reviewed in accordance with Sheffield University Management School's ethics review procedure. The research is funded by the Economic and Social Research Council.

Appendix 3

Interview schedule

Interview schedule *(with added examples)*

Materials required:

- Interview information sheet
- Interview consent form
- Notepaper
- Definition cards x 7
- Support prompt cards
- Repertory grid sheet

Questions:

Familiarisation

1. What does your job involve on a day-to-day basis?
2. How long have you been in this role? What were you doing before this particular role?
3. Where do you see yourself in 5 years' time, in terms of your work?

Sharing definitions and exploring informal learning

4. What do you understand by the term 'informal learning'?

Share our definition and explain using definition cards.

Work and talk through the learning activity cards, exploring learning participation with the participant.

4.1. Which of these activities do you participate in? Which do you enjoy? Are there any missing activities that you think should be here?

4.2. Can you talk me through a time you've initiated such an informal learning activity?

4.2.1. What did you aim to learn?
4.2.2. How did you go about the learning task?
4.2.3. What did you learn? Did it go as expected?

Barriers to learning

We are interested in understanding what may hinder or limit your efforts to participate in informal learning activities, such as those we have just discussed.

5. Is there anything that prevents you from participating in as much of these informal learning activities as you would like?

5.1. How does this limit or hinder your learning?
5.2. Is the same at all times? For all types of activity?

Sources of support

We are also interested in understanding how other people may influence your informal learning, and how they may support or hinder you.

6. Is there anybody who supports or hinders your informal learning?

7. ***Use cards to work through sources of support.***

    7.1. Does this group or person support or hinder you in your informal learning?
    7.2. How do they support or hinder you?
    7.3. Do you have examples of how this support source has actively supported or hindered your informal learning?
    7.4. How does that differ to previous/other people within this group?
    7.5. Is there anybody else in this group that supports or hinders your learning?
    7.6. Are there things that you wish this group could do to support you that they do not currently do?

8. Is there anybody, who we haven't spoken about already, who supports or hinders your informal learning?

Repertory grid exercise

We will now explore the ways in which others support or hinder your informal learning in a different way.

9. Please choose between six and eight different people who support or hinder your informal learning, writing their name and relationship in the boxes along the top. *Prompt using the support cards again if necessary.*
10. Use the triad method ("which of these three is the odd one out?")
11. Use the free method ("can you think of any other ways in which these people differ that we haven't discussed already?")

Common prompts:

- Give me an ***example*** of how this person helped/hindered your informal learning.
- How does this differ to [construct discussed earlier]?
- If you had to summarise that in three words or fewer, what words might you use?

Concluding questions

12. Given the aims of the research project, is there anything else that you think may be helpful for me to know?
13. Is there anything that you expected, or wanted to cover, that we haven't?
14. Do you have any final questions of me?

Appendix 4

Quantitative survey

Informal learning questionnaire

In this survey, we'll ask some questions about you and your learning experiences. This is to help us understand how differences between people affect the way they learn, and in turn this will help [organisation] craft better learning interventions.

Some of these questions are quite personal, but they are completely confidential, and will help make learning at [organisation] better by making sure the needs of different kinds of people are met. If taking this survey raises any negative feelings, you can contact [organisation]'s employee assistance programme at [email] or on [phone]. More information is available here [hyperlink].

This survey is not mandatory and you are free not to participate in the survey or leave any question blank, but we do encourage you to answer as many questions as you can.

All personal information gathered from this survey is handled by a research team from the University of Sheffield in confidence and in accordance with their ethics and compliance policy, a copy of which can be found here. They will only use the data to understand the learning preferences of [organisation] employees and value the time and help you give in taking part.

The lead researcher, Stephen McGlynn, is happy to answer any questions, at s.mcglynn@sheffield.ac.uk.

Please select the box below if you have read the above details and agree to participate in the questionnaire.

❑ I agree to participate in this project

Your personalised report

As a 'thank you' for completing today's questionnaire, we are offering you a free report on your learning style and performance. This will include information on:

- your personality and how this may affect your learning
- your learning behaviours and how they compare to others'
- recommendations on how to maximise your informal learning

If you wish to receive a report, please provide your email address below. Once your report has been generated, we will delete your email off our database. Your report will only be sent to you; and not to your manager or employer. Your responses are treated as confidential.

If you do not provide an email address, your responses to this questionnaire will remain completely anonymous, and so we would not be able to generate a report if you change your mind at a later date.

If you wish to receive a free personalised report, enter your email address here:
[Text box]

Understanding your personality

On the following pages, there are phrases describing people's behaviours. Please use the rating scale below to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future.

Questions (randomised order)	Response options
• I often feel blue • I dislike myself • I am often down in the dumps • I have frequent mood swings • I panic easily • I rarely get irritated • I seldom feel blue • I feel comfortable with myself • I am not easily bothered by things • I am very pleased with myself • I feel comfortable around people • I make friends easily • I am skilled in handling social situations • I am the life of the party • I know how to captivate people • I have little to say • I keep in the background • I would describe my experiences as somewhat dull • I don't like to draw attention to myself • I don't talk a lot • I believe in the importance of art • I have a vivid imagination • I rarely look for a deeper meaning in things • I enjoy thinking about things • I carry the conversation to a higher level • I enjoy hearing new ideas • I am not interested in abstract ideas • I do not like art • I avoid philosophical discussions • I do not enjoy going to art museums • I have a good word for everyone • I believe that others have good intentions • I respect others	**Response options for each statement of:** • Very inaccurate • Moderately inaccurate • Neither inaccurate nor accurate • Moderately accurate • Very accurate

• I accept people as they are • I make people feel at ease • I have a sharp tongue • I cut others to pieces • I suspect hidden motives in others • I get back at others • I insult people • I am always prepared • I pay attention to details • I get chores done right away • I carry out my plans • I make plans and stick to them • I waste my time • I find it difficult to get down to work • I do just enough work to get by • I shirk my duties • I don't see things through	

Understanding your personality

Please use the rating scale below to describe how accurately each statement describes you.

Questions (randomised order)	Response options
• I am the type of person who really enjoys the uncertainty of everyday life • Everywhere I go, I am out looking for new things or experiences • I view challenging situations as an opportunity to grow and learn • I am always looking for experiences that challenge how I think about myself and the world • I prefer jobs that are excitingly unpredictable • I frequently seek out opportunities to challenge myself and grow as a person • If I see something I don't like, I fix it • No matter what the odds, if I believe in something, I will make it happen • I love being a champion for my ideas, even against others' opposition • I excel at identifying opportunities • I am always looking for better ways to do things • If I believe in an idea, no obstacle will prevent me from making it happen • I want to participate in employee development activities • I would like to engage in activities that will improve my job skills or knowledge • I am motivated to participate in employee development activities	**Response options for each statement of:** • Strongly disagree • Disagree • Slightly disagree • Neither agree nor disagree • Slightly agree • Agree • Strongly agree

Your current job role

Please use the rating scale below to describe how accurately each statement describes your current job role. To what extent does your current job...

Questions (randomised order)	Response options
• Give you a chance to use your personal initiative or judgement in carrying out your work • Allow you to make a lot of decisions on your own • Provide you with significant autonomy in making decisions • Give you considerable opportunity for independence and freedom in how you do your work • Allow you to make decisions about what methods you use to complete your work • Allow you to decide on your own how to go about doing your work • Allow you to make your own decisions about how to schedule your work • Allow you to decide on the order in which things are done on the job • Allow you to plan how you do your work	**Response options for each statement of:** • Strongly disagree • Disagree • Neither agree nor disagree • Agree • Strongly agree

Please use the rating scale below to describe how accurately each statement describes your time and workload in your current job role.

Questions (randomised order)	Response options
• I don't have time in my job to try and strengthen my skill weaknesses • My workload makes it difficult to try and use new knowledge and skills • On the job I have so much work to do that it makes it difficult for me to participate in learning and development opportunities • Once my daily work is complete, I still have the energy to focus on myself and my development needs	**Response options for each statement of:** • Strongly disagree • Disagree • Neither agree nor disagree • Agree • Strongly agree

Your participation in learning and development activities

Thinking of the past year, how frequently have you participated in each of the following activities so as to improve your job performance or career?

To improve your job performance or career, how frequently have you:

Questions (randomised order)	Response options
• Read professional magazines or newspapers • Searched the Internet to help solve job-relevant problems • Watched a video (e.g. on YouTube, a TED talk) • Read a book relevant to my work • Read online articles or blogs • Reflected about how to improve your performance • Experimented with new ways of performing your work • Used trial and error strategies to learn and better perform in your job • Asked your manager for feedback • Asked a coworker or direct report for feedback • Asked your clients, or other recipients of your work, for feedback • Spent time giving serious consideration to your own strengths and weaknesses • Applied for a job or secondment in order to receive feedback on your skills and employability • Taken on work projects, assignments or tasks • Swapped or rotated assignments with other employees • Expanded the breadth of your work role by taking on new responsibilities • Taken a transfer, promotion or other job change • Had a conversation with a mentor or coach • Asked a more experienced employee to share knowledge or procedures • Worked alongside or shadowed a supervisor or coworker • "Networked" and made efforts to meet people in the organisation	**Response options for each statement of:** • More than once per day • About once per day • A few times per week • About once per week • A few times per month • About once per month • About once every two or three months • About two or three times per year • About once a year
• Participated in training courses or workshops • Studied for a professional or educational qualification • Attended professional conferences, meeting or seminars	**Response options for each statement of:** • Never • Once • Twice • Three times • Four times

	• Five times • Six times • Seven times or more

Support for learning and development

Please use the rating scale below to describe how accurately each statement describes the support you receive for your learning and development.

Questions (randomised order)	Response options
• Members of my family are supportive of me learning new things and improving career skills • Friends outside of work are supportive of my efforts to improve my career skills • Individuals I spend time with after work are supportive of my efforts to improve and develop my skills • My coworkers believe that learning and development activities are important • People I work with are supportive of my efforts to improve my career skills • My coworkers encourage me to believe that I can learn and improve at work • My line manager is supportive of my efforts to improve my work skills • My line manager provides adequate time for me to participate in learning and development activities • My line manager encourages me to participate in activities which promote skill improvement • There are learning and development resources available to me through my employer than help me improve my career skills • The policies and work rules where I am employed make it possible to participate in learning and development activities • Our company places much value on employee learning and development activities	**Response options for each statement of:** • Strongly disagree • Disagree • Neither agree nor disagree • Agree • Strongly agree

About you

- When did you first start working at [organisation]? [Drop downs of months Jan-Dec and years 1960-2015]
- When did you start in your current job role? [Drop downs of months Jan-Dec and years 1960-2015]
- In which year were you born? [Drop down of 1930-2010]
- Your gender: [Radio buttons for ‘Male’, ‘Female’, and ‘I prefer to identify a different way’
- Your [work area]: [Drop down of all work areas within the organisation]
- Your job grade: [Drop down of all job grades at the organisation]
- Your work country: [Drop down of all countries]
- Are you a homeworker? [Drop down of yes/no] (Question added later to the survey)
- How do you prefer to learn and develop? [Multi-line free text box] (Question added later to the survey)
- What, if anything, limits your ability to participate in informal learning activities? Informal learning activities are activities that are self-directed and take place outside of training or classroom environments. [Multi-line free text box] (Question added later to the survey)

Appendix 5

Sample ‘Learning Insights’ report

Learning Insights

Your ID:

xx 00135

This report is **CONFIDENTIAL**. It is only intended for the survey respondent and any colleagues with whom they choose to share their report.

About this report

What does this report cover?

This report provides feedback on five core personality traits and your benchmarked participation in six groups of learning activities.

How we calculate your scores

We asked exactly the same questions to around 2,000 people working in [org]. These people were broadly representative of the organisation and included a wide mix of people in terms of their gender, age, job role, and time working at [org].

We compared your responses with everybody else's responses. Your scores show how different your responses were to the average person in this comparison group.

Interpreting your results

For each personality trait or learning activity, we provide a number out of ten. This number indicates how your responses compare to those given by others in the comparison group. The average person has a number of 5 or 6.

Some points to remember

- Our feedback is based on the responses you gave, so your results will reflect your self-perceptions. This may not necessarily reflect how others see you.
- Your personality and learning participation may change over time. This report is likely to remain valid for 12 to 18 months, or less if you face major changes in your work or life circumstances.
- There are no absolute rights or wrongs. Each personality style will have its advantages and disadvantages.
- We have not measured your ability, skills or competence. These results are merely indications of your preferences and typical styles of behaviour, as reported by you.

Thank you!

Thank you for taking the time to complete our learning survey in Summer 2015.

The questionnaire that you completed is part of my doctoral research project at the University of Sheffield - and without you giving up your time, I would not have been able to write a thesis!

I hope that you find your individualised feedback report useful and that it fuels many future learning adventures.

Academy

Make sure to visit the Academy to explore all the learning available to you at [org], including ways to develop your career and connect with colleagues in your profession around the world.

You can also check out Learning Home to see what courses are available to help with your development, and look at the Continuous Development site to see other ways to get support with L&D.

Finding out more

There are a number of avenues for you to explore your personality or learning preferences in greater depth. This short survey and feedback report can only scratch the surface.

1. Psychometric questionnaires

There are different types of assessments available to assess your personality, ability and work-related competencies such as leadership or team-working. For more information about psychometrics, visit www.psychtesting.org.uk.

2. Coaching and counselling

A psychologist, coach or counsellor can talk through and guide you on your personality, learning and career. To find a Chartered Psychologist, visit www.bps.org.uk.

Your personality

Psychologists find that people's personalities can be summed up in five dimensions. These five dimensions (or personality *traits*) are known as the '**Big Five**'.

The Big Five have been extensively studied and researched over the last 80 years, and behavioural scientists have used these traits to predict individuals' behaviours, time and time again.

Each of these traits are measured along a continuum. Your scores below indicate where you lie along this continuum for each of the five traits. There is no right or wrong side to each continuum.

Personality can vary under different circumstances. Think about how your personality manifests itself in your daily life and how this may differ across contexts.

Extroversion

Extroversion describes how much we enjoy the company of others. The trait refers to the levels of energy and motivation we spend in developing and maintaining social relationships and interactions.

Your score indicates that you are more extroverted than most.

Conscientiousness

Conscientiousness describes the tendency to be organised, disciplined and thorough; as opposed to being more easy-going, impulsive and open to a lack of direction.

Your score indicates that you are typical of the average person in terms of your conscientiousness.

Neuroticism

Neuroticism is the extent to which we experience unpleasant emotions easily. Some individuals are more susceptible than others to feeling tense, irritable, malcontent or vulnerable.

Your score indicates that you are typical of the average person in terms of your neuroticism.

Openness to Experience

Openness to experience reflects our innate curiosity, creativity and preference for novelty. It can reflect a preference for participating in a wide range of new activities, as opposed to having a more strict routine.

Your score indicates that you are more open to experiences than most.

Agreeableness

Agreeableness describes how we interact with and relate to other people: whether we are compassionate and trusting of others, or more suspicious or stubborn with them.

Your score indicates that you are typical of the average person in terms of your agreeableness.

Your learning participation

Learning is key to developing our careers and helping us perform the best we can - both as an individual and as a business. It is vital for innovation, growth and development.

We often think of training courses and qualifications, but there are many different ways to learn in the workplace. It is thought that only 10% of our work-related learning comes from formal courses; with 20% from social learning; and 70% from our experiences.

This is known as the **70:20:10 model.**

We all use a number of different ways to learn, and the method we choose will depend on what we're trying to learn and what opportunities are available to us at the time. We may also have our own personal preferences and needs, and so different people may prefer to learn in different ways.

The number shown by each learning activity group below indicates how frequently you participate in these activities compared to our comparison group. Scores towards 10 indicate more frequent participation than average; and scores towards 1 indicate less frequent.

Learning by yourself

There are plentiful opportunities to learn in your own company: picking up a book or magazine; or just taking a few minutes each day to self-reflect and ponder.

The Internet offers a host of learning opportunities: you can search for the answers to your questions at the exact moment you're stuck; and there are plenty of YouTube tutorials and inspirational TED Talks.

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Learning by trial and error

Trial and error can be a powerful way to learn - they say you never make the same mistake twice! Active experimentation helps you innovate new ways of working and gain deeper understanding of systems and situations.

It's important to find a safe space when learning this way, and it may not be an appropriate learning strategy in safety-critical or regulated work areas.

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Learning through experiences

Stretching yourself out of your comfort zone can be daunting; but it's a great way to learn something new.

Take on new projects or responsibilities when opportunities arise - or discuss with your manager about how you can craft developmental experiences into your job. In the longer term, consider how a secondment or a change of job role could help you develop.

7

Learning from others

Your colleagues can be a valuable source of learning, as can friends and family outside work. They can offer other perspectives, experiences or useful knowledge.

Typical activities include: coaching, mentoring, shadowing a colleague, asking for help or advice, action learning sets, and online communities of practice.

5

Formal learning and training

Training courses and classroom learning are one of the most commonly thought of ways to learn. Outside of work, professional society events and conferences can also be ways to learn in a formal setting.

Training courses tend to offer a space away from daily workplace distractions, demands and risks; and can be great ways to learn important information quickly.

3

Learning from feedback

Feedback helps us understand our strengths and areas for improvement, and can often spur on other learning activities. Try and build opportunities for feedback into your projects and your daily work.

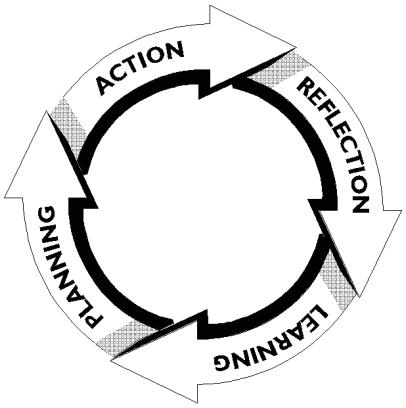
Feedback doesn't just have to come from your manager; your colleagues, clients, direct reports, suppliers or contractors can also have useful things to say.

7

Reflection questions

Reflection is a key stage in the learning process. Whenever you try something new, gather some new information or receive a piece of feedback, you need to make the time to reflect and consider how you can best use (or not use!) that information and learn from it.

These pages will guide you through reflection and planning activities, so that you can make the most of your personality and learning insights report.



You don't have to reflect alone!

Self-reflection is a useful starting step when trying to interpret and analyse your behaviours - but many other people in your work and personal life will also have useful insights to add and they may ask questions that challenge your thinking. Why not ask your line manager or colleagues, a coach, or your friends and family for their thoughts on your report?

Your personality

Your reactions: Do your scores match your expectations? What surprises you? Why?

Come up with examples: For each of the five personality traits, write down examples of when you display behaviours at either end of the continuum.

How do others see you? How might others describe your personality?

How do your personality traits link with your work? What aspects of your personality style are advantageous for your job? Are there any traits that may cause problems? How can you monitor and compensate for these behaviours?

How might your personality affect your learning? Do you prefer to learn in any particular ways?

Your learning participation

Your reactions: Do your scores match your expectations? What surprises you? Why?

For each of the learning activity groups:

- What knowledge and skills do you prefer to learn this way? Why?
- Can you give examples of times when you've learned this way? What did you learn? Why did you choose that particular method of learning?
- What opportunities do you have to learn this way? How can you make the most of these?
- What barriers for learning do you have? How can you overcome these?

What types of learning are important in your current job role? How can learning help you excel in your work? How can you build learning activities into your working week?

Thinking of the future: What is it important that you learn over the next three months? How about over the next year? Which types of activities can you use to accomplish this learning?

Your next steps

Now that you've worked through your report, is there anything you'd like to change or work on?

Changing your behaviours can be challenging, but you can make it easier by planning a series of smaller goals. Your goals need to be **SMART**: specific, measurable, achievable, relevant, and time-bound. Use the table below to help you. You should also consider including informal learning activities in your *personal development plan* (PDP).

Goal What do you want to achieve?	**Goal number 1:**	**Goal number 2:**	**Goal number 3:**
Reason Why is this goal important?			
Actions What are you going to do to achieve your goal? Be specific and break your actions down into steps.			
Opportunities and obstacles What or who may be able to help you achieve your goal? What might stop you? How can you overcome these obstacles?			
Timeline When do you aim to have achieved your goal?			
Success criteria How will you know when you have achieved your goal?			