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‘Flying the nest’: An analysis of the development of self-regulated learning during the transition to Higher Education

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CONTENTS

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'Declaration: I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.'

Stephen Rutherford

“Education is not the learning of facts, it’s rather the training of the mind to think.”

Albert Einstein

ABSTRACT

The transition to University is challenging, and requires change from a teacher-centred (pedagogic) to student-centred (andragogic) learning environments. Fundamental to an effective transition is the capability for learners to be self-regulated. 'Self-Regulated Learning' requires coordinated academic skills and attributes that need to develop over time. A common perception across the HE sector is that students entering University lack ability as self-regulated learners. This study aims to evaluate the extent to which university students are self-regulated, and what factors promote or inhibit self-regulation. This study uses a qualitative methodology, to investigate the experiences of first year students. 24 first year undergraduate students, from science and humanities disciplines, were interviewed three times each, over the course of their first academic year. Interview data were analysed using Constructivist Grounded Theory and Situational Analysis. Findings suggest that the participants in the study had already developed extensive 'Personal Learning Strategies' before they arrived at University. Participants displayed clear characteristics of self-regulated learners, however their personal learning strategies needed to be adapted to align with the academic expectations of Higher Education. Development of effective self-regulation involved extensive interactions with a supportive 'Personal Learning Network' of other people. Transition to university also required the learner to learn the conventions of the social and academic communities in which they were embedded. Interactions with others and the discipline impacted upon the development of agentic identity. This study suggests that students need to be supported to adapt during the transition process, but do not require remedial support. The extent to which participants were agentic mediators of a range of different factors and social interactions suggests that self-regulation may be too restrictive a concept, and that 'Student-Mediated Learning' might be more appropriate. Implications for learning and teaching practice, and the support of new students, are discussed.

Keywords

Self-regulated learning; Andragogy; Grounded Theory; Self-regulation; Peer-supported learning; Independent learning; Transition; Personal learning network; Identity.

Abbreviations

CGTh = Constructivist Grounded Theory

CoP = Community of Practice

GTh = Grounded Theory

HE = Higher Education

PLN = Personal Learning Network

PLS = Personal Learning Strategy

QAA = Quality Assurance Agency

SA = Situational Analysis

SDL = Self-directed learning

SML = Student-mediated learning

SRL = Self-regulated learning

Chapter 1

INTRODUCTION

1.0 Introduction

This study focuses on the development of self-regulated strategies for learning in university students as they transition from school to Higher Education (HE). The study seeks to highlight the key factors and influences on SRL that impact upon students during this process. The aim of this research is to identify potential mechanisms of support that could be offered within courses to better support students' development as independent, agentic learners.

1.1 The importance of independent learning in HE

The development of independent, lifelong learners is fundamental to HE, and the way in which educational practitioners in HE support this development is of importance. The Quality Assurance Agency (QAA) Benchmark statements for UK HE have the following core expectation at their heart:

> "Higher education providers, working with their staff, students and other stakeholders, articulate and systematically review and enhance the provision of learning opportunities and teaching practices, so that every student is enabled to develop as an independent learner, study their chosen subject(s) in depth and enhance their capacity for analytical, critical and creative thinking."
>
> (QAA, 2018, p. 8)

The ability to function as an independent learner is core to the mission of HE within the UK framework, and is common across the sector worldwide (Biggs & Tang, 2011; Daily & Landis, 2014).

Learning outside of formal structured teaching is challenging. There is little or no scaffolding to the activity (Bruner, 1978) within this 'third space' environment (Cuenca, Schmeichel, Butler, Dinkelman, & Nichols, 2011; Moje et al., 2004), the space outside of formal teaching. Without a formal structure placed on them by the teacher, the learner needs to be more agentic in the management of their learning. This level of agency in the planning and execution of learning, which is fundamental to HE, is characteristic of an 'andragogic' ('adult learning'), compared to a 'pedagogic' ('child learning'), environment (Knowles, 1990).

One of the major challenges in progressing through the educational system, is managing pedagogic-andragogic progression, so that the learner develops the skills required for independence. The

pedagogy-andragogy transition is gradual, and requires a revision of learning approaches, academic literacies, world view and a re-evaluation of the learner's roles and responsibilities in the learning process (Daily & Landis, 2014). The successful progress from pedagogy to andragogy requires substantial change on the part of the learner. Mapping this change, how it occurs, and what support is required for different learners, are key priorities for supporting secondary and tertiary education.

This requirement to take ownership of the learning experience and drive one's own personal development is core to the concept of 'self-regulated learning' (SRL; Bjork, Dunlosky, & Kornell, 2013; Zimmerman, 1989a). Self-regulation features prominently in the QAA benchmark statements (QAA, 2018), which emphasise several aspects of education that drive effective learning when students are empowered to undertake certain key activities. These include: Engaging actively in learning and participating in learning opportunities; understanding their learning environment; embracing the aims and expectations of their course of study; recognising and building-upon their existing knowledge and skills; making effective use of feedback and advice; utilising opportunities to acquire and develop learning skills; understanding academic practice; contextualising their knowledge; planning the use of resources available; and working together in informal as well as formal learning environments. Indeed, all of the suggested opportunities for students in the QAA benchmarks relate to independent learning and being self-reflective about the learning environment and personal learning development. Self-regulation is therefore at the very core of activity in HE.

1.2 The importance of self-regulation during independent learning in HE

Effective SRL provides the potential to manage and effectively direct one's own learning without the direct guidance of a teacher (Boekaerts, 1997; Boyer, Edmondson, Artis, & Fleming, 2013; Cassidy, 2011). An effective self-regulated learner is able to manage their ideal strategies for acquiring and understanding knowledge, critically appraising it, and using it for assessment or problem-solving (Boyer et al., 2013; Doyle, 2011; Nicol & McFarlane-Dick, 2006). In this independent learning environment, the learner themselves needs to take responsibility for their learning, to identify their learning needs, and the most effective means of achieving both (Zimmerman, 2002). A lack of SRL skills is often associated with students who withdraw from university prematurely, or who fail to progress through their studies (McGuire, 2015; Tinto, 2012). Effective SRL is fundamental to success as a student in HE, and therefore supporting students in becoming effective self-regulated learners is a priority for the HE sector.

1.3 The extent of collaboration during independent learning in HE

Another of the key expectations for students within the QAA guidance is that students should "work together in an informal environment as well as in formal learning sessions" (QAA, 2018, p. 9). This expectation emphasises that collaborative and team-based activity is fundamental to the HE learning environment, both within and outside the classroom. SRL is often expected to contain an element of communal activity (Järvelä & Järvenoja, 2011). However, evidence suggests that undergraduate students rarely adopt communal study approaches outside of class, or do so to a limited extent (preferentially working alone, in pairs or in threes; Scott, Mistry, Moxham, & Rutherford, 2014). The lack of collaboration is surprising, given the extent to which collaboration is a fundamental aspect of the contemporary world, through active interactions between individuals *via* social media and Web 2.0 collaborative technologies (Dabbagh & Kitsantas, 2012). It would be useful to academic practice in HE to identify the extent to which students collaborate in their SRL, the rationale for their behaviour, and the best means of supporting collaboration, if it occurs. One of the key aims of this thesis is to evaluate the impact of collaboration on the development of SRL, and the extent to which SRL is seen by students a solitary or collaborative process.

1.4 Context of the researcher, and rationale for research aims

The principal driver for this research project comes from my own experience as a bioscience educator in HE. The delivery of our curriculum is reliant on students being effective independent, self-directed learners, especially in the later years of their degree course. In particular, I have developed an interest in the strategies students use for independent study outside of a structured classroom environment.

Over several years of supporting undergraduate students through their development towards being independent learners, I had identified a clear progression in the SRL capabilities of most students. However, I had also observed several students who struggled to study effectively during their degree. This observation aligned with what I experienced to be a widely-accepted belief among colleagues of all disciplines, that contemporary undergraduate students are 'incapable' of SRL upon arrival at university. The perception that new undergraduate students lack SRL skills is echoed across the sector (Bjork, 2011; Bjork et al., 2013; Doyle, 2011; Reeves & Stich, 2011). As a consequence, there is also a widely-held belief that we need to teach new undergraduates how to be self-regulated learners to help them succeed (McGuire, 2015).

Concern over the extent of students' abilities with SRL has led to study skills training being a common activity during the latter years of school and the early years of university. However, it is not always clear whether these study skills activities are effective. I designed and delivered a programme of

workshops for new undergraduate students in my School, to support their transition to University and introduce them to SRL. However, through these workshops I began to suspect that perhaps there were more-effective means of supporting students – especially in the area of SRL. Part of the reason for this might be that the perceptions and expectations of us as educators do not necessarily align with the expectations and perspectives of our learners. Engagement with study skills activities tended to be low, and the concern then was that students might progress to subsequent levels of study poorly prepared for the intellectual activity they would require.

One key barrier faced in my own teaching practice is the prevalent perception, among both students and colleagues, that the primary activity in the degree should be the teaching of content, rather than the higher-order critical and analytical skills that are important for HE graduates (Holmes, Wieman, & Bonn, 2015; Krathwohl, 2002). This perception is pervasive within the sector; for example, an interview-based study at the University of Helsinki exemplified this issue, highlighting that both Year 1 students and academic staff viewed the teaching of content to be more central and important to Bioscience education at university than more-generic skills (Virtanen & Lindblom-Ylänne, 2009). There was also the finding in this study that both students and staff expected the learning to be teacher-centred (i.e. didactically taught) rather than student-centred (i.e. self-taught). There is therefore a challenge to the development of SRL that is endemic in the core perceptions of the stakeholders, that accumulation of content is the desired outcome, rather than the development of skills.

A major potential limitation to my attempts at supporting students was that the recommendations given were based upon my own experiences and approaches towards SRL. I am very mindful of Bruner's concept of 'folk pedagogies' (Bruner, 1996), the concept that we tend to teach based on our own experiences of being taught. The danger as educators, therefore, being that we might view good practice in teaching as being methods that we ourselves experienced, or found useful. In order to deliver more-effective support to students, it is necessary to develop better understanding the diversity of study strategies, and the factors that either support or inhibit the development of those strategies. The primary aim of this project, therefore, is to investigate the factors involved in the development of SRL during the pedagogy-andragogy transition, seen from the perspectives of the learners themselves.

1.5 Objectives for the study

The objective for this study is to investigate the factors that impact upon the effective development of SRL during the pedagogy-andragogy transition. In particular, the strategies adopted by the learners, and how or why they choose these strategies. This study also aims to investigate the extent

to which learners interact with others as part of their SRL, and the impact that others have on the SRL activities, and their development as the learner moves from a pedagogic to andragogic environment.

This study is focused around **four** research questions addressing the development of SRL during the transition from a pedagogic to andragogic learning: Firstly, '***What self-regulated learning activities do Year 1 undergraduate students undertake, and why?***' aimed to identify specific methods adopted for studying and revising, and the rationale behind their use. The second question, '***To what extent do Year 1 students interact with others as part of their self-regulated learning, and what factors affect this, and why?***' addressed the extent to which SRL is a solitary or communal activity. The third question, '***What are the perceptions of Year 1 undergraduate students regarding the extent of their agency and responsibilities within the HE setting?***' evaluated the extent to which students are aware of the pedagogy-andragogy transition itself. Finally, '***What social, situational, or environmental factors contribute to the student's progression towards being an independent learner, and how?***' aimed to identify key drivers or barriers to students developing as independent learners.

In addition to the aims related to my teaching practice, an additional personal learning objective for this research was the development of my own qualitative research skills. As a scientist, with several years of training and professional practice in quantitative research methods, a key aim for my own learning experience in the Ed.D was to step away from a quantitative paradigm. This personal learning objective strongly influenced my choice of area of research and subsequent methodology, but also aligned with my own epistemic and ontological views that knowledge and truth are personally-derived constructs, and will vary between individuals. As a result, I was less concerned with identifying prevalent cohort-level behaviours of students than investigating the rationales and decisions that underlay those behaviours. A key feature of this Ed.D is therefore the adaptation of a quantitative researcher to a qualitative paradigm, and to reflect upon the influence my quantitative background might have upon a qualitative analysis and interpretation of data.

1.6 Conclusion: Overview of the thesis

This thesis is subdivided into nine chapters. **Chapter 2** presents a review of the literature surrounding self-regulated, independent, and collaborative learning. **Chapter 3** focuses upon the methodology of the research project, and introduces the data generation and qualitative analysis methodologies adopted. In particular, Chapter 3 introduces the two analytical paradigms adopted for the project – Constructivist Grounded Theory, and Situational Analysis. **Chapter 4** summarises the outcomes of the analyses, and outlines the key themes identified.

The four themes from Chapter 4 are each then addressed individually in the four subsequent chapters. **Chapter 5** addresses the theme of students' selection and adoption of 'personal learning strategies' in their learning. **Chapter 6** evaluates the extent to which undergraduate students involve other people in their learning through the inclusion of them into a 'personal learning network'. **Chapter 7** focuses on the development of students' understandings of the conventions of their discipline, and their inclusion in the communities of their discipline and of university life. **Chapter 8** focuses on the role of personal identity in the development of SRL. Finally, **Chapter 9** discusses these themes, highlights implications for professional practice, and suggests potential approaches to address the issues raised in this research.

The research presented in this thesis suggests several outcomes. Firstly, despite the prevalent view in the sector to the contrary, the undergraduates involved in this study were each already highly-effective self-regulated learners. However, their SRL approaches (their 'personal learning strategies') were not necessarily aligned with the requirements of university study. In order to better align their SRL activities, there was a need for the students to develop an understanding of the expectations laid on them as members of the university learning community, and members of their individual subject disciplines. Key factors in addressing these challenges were the development of an agentic identity, and the involvement of others in the learning and development processes. Students framed their independent learning through their interactions with other people (their 'personal learning network') and this interaction was fundamental to effective learning. The ubiquity of the interactions with others – ether individuals, groups, or organisations – leads to this thesis positing that we should revise our terminology of self-regulated learning to include this social component. This thesis proposes that we consider re-evaluating self-regulated learning as '**student-mediated learning**'. Student-mediated learning would reposition the student from primarily regulating their own activity, to additionally managing a complex network of influencing and mutualistic relationships that support and develop their learning.

Chapter 2
LITERATURE REVIEW

2.0 Introduction

In order to address the issue of the development of self-regulated learning during transition, it was first necessary to investigate the current understanding of transition to university, self-regulation in learning, and the concept of andragogy. This chapter summarises the findings of a literature review of these areas, highlighting the gaps in our understanding of the development of student-led learning outside of the classroom, and the influences upon its development.

2.1 The transition to University

2.1.1 The Academy, and the Learning Community of Higher Education

The HE sector is strongly focused around the notion of The Academy, and the community of academia (Gayá & Brydon-Miller, 2017; Serrat & Rubio, 2012). Universities are built around communities of academics – of varying disciplines – who share common principles of valuing evidence-based research, independence of thought, developing new ideas and approaches, and reshaping conventional thinking about a variety of subjects (Henkel, 2000). Entry into the academy is typically a step-wise process of becoming embedded in the discipline . The process begins with learning about the discipline in increasing detail as a student, which continues, but also includes activity in information generation for the discipline, as a postgraduate, post-doctoral fellow, and then a member of faculty (with progression from local, to national, to international recognition). This transition process is typically a long one and contains several landmark stages (entry to university, graduation, postgraduate study, independence). An undergraduate student is therefore typically at the very periphery of The Academy.

Whilst The Academy is a term that is often used in the literature, there is no clear definition of what 'The Academy' is, and whom it involves. There is a general acceptance that it involves titled academics in universities and institutes (Gayá & Brydon-Miller, 2017), but as one moves increasingly towards the periphery, the boundaries of the academy become increasingly vague, and so it is difficult to identify where the community begins, and whom it includes or excludes. In particular it has been suggested that the traditional notion of The Academy excludes those from minority groups (Allen, 2015; Hutcheson, Gasman, & Sanders-McMurtry, 2011; Serrat & Rubio, 2012) or individuals with learning disabilities (Boxall, Carson, & Docherty, 2004). Inclusion in the community of HE begins with the undergraduate student's transition to and through the university.

2.1.2 Challenges for the transition to university

The transition to university is a complex process (Briggs, Clark, & Hall, 2012). Gale and Parker (2014) suggest three core concepts in transition: induction (settling-in); development (formation of an identity as a student); and becoming (fitting-in to university life). While Lizzio (2011) described a four-stage student life-cycle containing four transition periods: Transition towards university (pre-university study and preparation for HE); into university (joining the University and negotiating the early stages); through university (successfully proceeding through the degree); and either up from, out of, or back to university (graduation, movement onto a higher degree, or return to university at a later date). Transition to University is not a single event, but rather a process of several independent, but linked, transitions. Transition to university also features a range of challenges to the student (Matheson, 2018), and these challenges are not necessarily restricted to only the first year of the course (Maunder, Cunliffe, Galvin, Mjali, & Rogers, 2013). The challenges are frequently social in nature, but are influenced by changes in environment, identity and preparedness for study at the HE level (Dennis, Bailey, & Abbott, 2018; Matheson, 2018).

The initial challenges of settling-in and surviving the first weeks or months of the experience are key to a successful transition. Various models have been proposed to account for this (Aljohani, 2016; Spady, 1971; Tinto, 1975, 2012). These models integrate social, personal and academic factors, mostly based around interactions with others and the development of a sense of belonging in the new environment (Maunder et al., 2013). Ludtke, Roberts, Trautwein, and Nagy (2011) describe this process as a series of life events that build into an overall path for the transitioning individual, but that these pathways are specific to each individual based on their personality traits. There is no single pathway towards successful transition to university, though there are common factors identified.

Transition to university typically involves moving to a new location from the family home. Moving to a new location disrupts the individual's sense of place identity and place attachment (Chow & Healey, 2008), and requires the breaking of social links with both people and places. Loneliness and feeling homesick are key factors (Fisher & Hood, 1987), as the students are often away from the security of the family environment for the first time. Fisher and Hood's study suggested no particular difference in this regard between students living at home or away from home, but did observe that students who reported feeling homesick were less able to adapt academically than those who did not feel homesick, suggesting that separation anxiety was possibly more of a factor than distance.

The extent to which students are prepared for going to university is a key factor for the transition from school (Clarke & Boyle, 2005; Dennis et al., 2018; Maunder et al., 2013; McMillan, 2013). In many cases students enter HE unprepared, either academically, socially or in terms of expectations (Leese, 2010; Newman-Ford, 2018; Selesho, 2012), and this can also have an impact on their success in the early parts of their course (Brown, 2018; Stoten, 2015b). Although many students feel that they

will not be ready for the transition, the majority cope well and settle in to their new environment well. In a study by Lowe and Cook (2003), over two thirds of students settled in well. However, the remaining students reported struggling with the academic expectations of the course – primarily the workload and the need to adapt to a more-independent way of learning. Leese (2010) found that students often did not have a clear idea of what to expect when they came to university, and that their expectations did not match the lived reality of their course. McMillan's (2013) interview-based study also highlighted that having realistic expectations of the university environment, and something familiar in the environment, were important to students settling-in. Clark and Boyle (2005) also found that students with prior knowledge of their subject (in this case, computing) settled in faster than those without.

Challenges with the social aspects of transition are exacerbated by the loss of knowledge between pre-university courses and the start of the degree. Jones et al. (2014) highlighted that significant areas of knowledge and understanding were absent from new students' previous knowledge-base at school, when they began their degree course, even in high-achieving students. Whilst the cause of this deficiency was unclear, these authors suggest that its cause was the predominantly superficial or short-term approaches undertaken by students in their secondary school examinations. Knowledge retention is a particular problematic issue, as without a sound basis in the jargon and core foundation of the subject, the learner is already at a disadvantage. Developing effective strategies for processing knowledge and understanding are fundamental to student success (Lowe and Cook, 2003). Moreover, the strategies will need to meet the requirements of university learning, where there is a strong focus on independent study (Brown, 2018).

While most students are prepared for university, a significant minority (c.20% in Lowe and Cook's 2003 study) did not have the necessary academic or social skills. Anxiety about coping as an independent person in an unfamiliar environment compounds this feeling of isolation, and can lead to significant issues of anxiety, stress and mental health problems (McMillan, 2013). Similarly, moving from a social environment where one was a high achiever in a small group - the 'big fish in a little pond effect' (MacNamara & Collins, 2010) – may be a particular challenge, especially for higher-attaining students. The unsettling impact of this effect, plus anxiety, unfamiliarity with the environment, all detract from the necessary academic adjustment to the university environment.

The development of an agentic identity is often identified as key to successful transition (Briggs et al., 2012; Chemers, Hu, & Garcia, 2001; Christie, Tett, Cree, & McCune, 2016). Briggs *et al.* suggest that this identity needs to begin its development in school, so that the student sees themselves as someone progressing to university from an early point, and that this identity is nurtured and transition is seen as a positive step. Harnisch and Taylor-Murison (2012) observed that students exposed to a blended learning resource to support university study skill development at school

showed better outcomes during transition to university. Busseri et al. (2011) undertook a quantitative analysis of Canadian students, and found that those students who were more engaged with activities in school, were typically more successful at interpersonal and academic functioning during the transition to university. An agentic and proactive approach as a learner appears to be a major factor for successful transition.

A study by Chemers et al. (2001) suggested that positive mental attitudes, such as optimism and self-efficacy, correlated with successful adjustment to university, although the interactions were complex and reliant on more-subtle actions, such as the ability to challenge perceived threats and expectations of academic success. Psychological factors such as goal-setting, positive imagery, motivation and determination were seen by MacNamara and Collins (2010) to correlate with successful transition in elite athlete students, characteristics which were the same as those the students adopted as they became more successful in sport. Pampaka, Williams, and Hutcheson (2012) also reported psychological positions that associate with successful transition, such as a developing disposition to complete their chosen course, and a view that the transition to university was a stage in an ongoing life pathway. Perera and DiGiacomo (2015) evaluated the impact of 'trait emotional intelligence' - characteristics which comprise the affective aspects of personality - on academic success during the transition period, noting positive correlations with academic and psychological adjustment. An analysis of a student transition intervention by Hughes and Smail (2014) strongly suggested that social integration was perceived by students to be a more effective priority than academic integration for successful transition to HE. This study proposed that psychological disposition was a major impact on the student's transition, and that social support enabled this factor to equilibrate more-rapidly.

Rapid social adjustment is facilitated by developing a sense of belonging (Palmer, O'Kane, & Owens, 2009; Thomas, 2012). Belonging is important in reshaping success and agency in learning (Matheson & Sutcliffe, 2018), and developing a sense of belonging is easier if one is able to place oneself easily within a community. A sense of 'in-between-ness' (Palmer et al., 2009), being neither within the old social group or the new, can lead to considerable anxiety, and so establishing social connections quickly is important. Making friends quickly is reported as a key factor (Wilcox, Winn, & Fyvie-Gauld, 2005), and is a major fear of many new students as they arrive at University. For most, making friends occurs rapidly, although these friendship groups form out of social necessity, are superficial, and often do not last beyond the first few weeks (Wilcox et al., 2005). Being unable to form these friendships has the potential to be a limitation to transition, so certain demographics of students are particularly vulnerable in this regard. Students who live at home, and are not part of the social groupings in halls of residence, may be particularly vulnerable to isolation, and face challenges making friends (Kodama, 2002; Pokorny, Holley, & Kane, 2015). Similarly, students who might be isolated socially may also face increased challenges during transition. Examples include black and minority ethnic students (Singh, 2009), students with disabilities (for example, Autism Spectrum

Disorder, Shattuck et al., 2012), or students from disadvantaged backgrounds (Bannerjee, 2018). Two other demographics that have been studied in depth are students from working class backgrounds, and 'mature' or 'non-traditional' students (older students who have taken a break in their education).

Class has been suggested to impact on transition (Reay, 2002). Reay argues that university, by nature of its focus on professional outcomes and graduate prospects, may be perceived as a middle-class institution. Transition for students who perceive themselves as working class, not only involves the change from one educational system to another, but often also a change from one class to another. This may feel unsettling, particularly for mature students (Reay, 2002), with students expressing concern that there was 'no way back' for them after this transition. A meta-analysis by Rubin (2012) suggested that working class students felt less of a sense of belonging to their institution, and were less able to integrate socially. Class divides may be more pronounced with mature students, with mature students needing to balance the risk of a challenge of a degree against the change of personal identity that results from a perceived change of class environment (Reay, 2002).

Mature students face particular additional challenges during the transition to university. The return to full-time study after a period of absence is a particular problem (Hardin, 2008) with mature students often struggling to understanding the jargon of the subject, to adapt to academic study, and also to balance work and home/family commitments. Motivations for studying can also impact mature students (Hardin, 2008), and there are typically gender-based trends to mature student motivations for further study (Reay, 2002), with women focusing more often on personal development and men on professional improvement. These gendered motivations may also be aligned with differences in self-confidence or reflexivity (Britton & Baxter, 1999), with women typically exhibiting less confidence and less positivity in self-reflective analysis. In particular, social integration is challenging for mature students (Mallman & Lee, 2016), with mature students often feeling anxious about integrating into university culture, or the 'community of practice' of HE (O'Donnell & Tobbell, 2016). Mature students may feel marginalised or detached from social groups (Christie et al., 2016), although Rubin and Wright (2014) suggested that social class had more impact on friendship-making than age. A study using video diaries by Kahu, Stephens, Zepke, and Leach (2014) showed that emotion is particularly important for mature students, and has a strong influence on engagement. Identity is also a significant issue for mature students transitioning to university. Mature students may struggle to maintain a stable, authentic identity as they become a student (Baxter & Britton, 2001), in particular related to their relationships to family and friends, and a fear of being perceived as thinking themselves superior to individuals in these groups. Baxter and Britton's study highlighted the significant disruption to the family and social environment for mature students, many of whom have families of their own, and stablished social groups in work or home life. This environment is typically less well-established and more fluid for students transitioning from school.

Supporting the transition to university is therefore a major concern for faculties. Fisher, Cavanagh and Bowles (2011) presented evidence to suggest that feedback on academic work within the first few weeks of the course had a positive impact on student transition. Early academic integration and exposure to the milieu of academia may therefore be an effective mediator for transition (Briggs et al., 2012; O'Donnell & Tobbell, 2016; Wilcox et al., 2005). However, there are subtleties to this support, and there may be cultural and gendered perceptions of the value and benefit of support offered for academic, social or psychological adjustment (Yau, Sun, & Lai Fong Cheng, 2013). Krause and Coates (2008) also argued that support for students transitioning to University needs to be adaptive, and that the needs of students adapt and change through the first year. These authors suggested that the support for transition needs to actively engage the students in reflecting on their progress as they adapt and develop. The move towards independence is central to this transitional process (Leese, 2010), either as an independent individual, or as a learner, and the two aspects are interconnected. As suggested by Wingate's (2007) proposed 'Learning to Learn' structure, transition needs to be supported by all staff involved in the teaching process, and the aim for this process needs to be to guide the learner from a dependent position, where they require the intervention of teachers, to a point where their learning is independent and self-driven.

2.2 The transition from pedagogic to andragogic learning

2.2.1 Pedagogy versus Andragogy

As highlighted in section 1.1, for most disciplines, and increasingly as the student progresses through their degree, university education is heavily reliant on students learning in an independent and self-directed manner (Daily & Landis, 2014). This learner-led education may be defined as an andragogic, rather than pedagogic, learning approach (Knowles, 1990). Andragogy was used by Knowles (1983) to describe self-motivated learning (rather than merely as a term to denote learning in adults). Knowles (1990) suggested that, as they develop, all learners tend to move towards an independent, self-directed learning strategy.

> "…as an individual matures, his need and capacity to be self-directing, to utilize his experience in learning, to identify his own readinesses to learn, and to organize his learning around life problems, increases steadily from infancy to pre-adolescence, and then increasingly rapidly during adolescence."
>
> (Knowles, 1990, p. 43)

An Andragogic learning environment therefore does not necessarily have to focus around adult learners (who would typically be returning to learning either for work-related upskilling, or motives

of general interest; Knowles, 1990) but can also involve younger learners who have reached the developmental stage where independent learning is the logical next intellectual step. Knowles (1990) suggests that there is a natural maturation toward self-direction in learning, based on six key factors: 1) *The need to know,* which increases as an individual becomes more independent within the world and needs to find solutions to ongoing problems of their own accord; 2) *Changes in self-concept*, where the developing individual naturally moves from a state of dependence on an adult to a state where they are developing their own ideas and solving their own problems; 3) *The role of experience*, that the developing learner is gaining a critical mass of experiences from the previous interactions and knowledge base they have already accumulated; 4) *Readiness to learn*, that as someone matures, their need to learn is based less on biological development or pressure from others, and more as a result of situations and developing social roles; 5) *Orientation to learning*, which changes from a child's 'subject-centred' orientation towards learning, where they adopt a postponed application approach, learning information and content which they can then later apply, rather than an adult's 'problem-centred' approach which is focused around finding solutions to unexpected problems using background knowledge and experience; 6) *Motivation*, the driving force behind learning being one from following the directions or requirements of an adult or superior, to one where one has the self-awareness and ability to future plan, and so the learner has the motivation to gain knowledge and skills to actively better one's own self. An independent learner therefore needs to master a range of competencies, and this may take some time and require considerable support.

There is a development gap that needs to be filled by adopting andragogic educational approaches and encouraging students to be independent and self-motivated. Andragogic approaches are exemplified in the guidance of Daily and Landis (2014) towards encouraging independent learning in Medical students. This guidance highlights the importance of a reflective and critical mindset, and the attitude that one should never be content with what one knows, but should always challenge and critique the extent of one's own knowledge.

The concept of Andragogy has been challenged in recent years (for example, Sandlin, 2005). In particular, there is no evidence that there is a distinct and definable transition from pedagogy to andragogy. The pedagogy/andragogy divide is not a binary state but rather a continuum from dependent to independent learning, with no clear point dividing one state from the other. Similarly, the implicit assumption that pedagogy is found in children's learning, while andragogy is exhibited by adults, is also pejorative. There is considerable debate as to whether or not children and adults do, actually, learn differently, and certainly children are capable of learning independently, while adults often engage in teacher-led learning (Davenport & Davenport, 1985; McGrath, 2009). Instead, Delahaye, Limerick, and Hearn (1994) suggest that there is a continuum between pedagogic and andragogic learning (see the model proposed by Delahaye et al*.,* 1994, in figure 2.1), following a 4-step progress. The initial state is one of *high pedagogy/low andragogy*, where the learner is highly

dependent on their teacher for driving learning. The next state is a *high pedagogy/high andragogy*, where the learner is independent in their learning but still requires scaffolding of activities from the teacher. Third comes a *low pedagogy/high andragogy* state, where the learner displays extensive independence from the teacher. Finally Delahaye et al. (1994) propose a *low pedagogy/low andragogy* state of 'autodidaxy', where the learner is fully independent, completely self-directed in their learning activity, and learns what they need to learn, when they wish to learn it, dependent on their own self-determined needs. This final state has both low pedagogy *and* low andragogy because the learning process is typically informal - *ad hoc* and unstructured, and so does not fit either the pedagogic or andragogic format where learning is typically either directed by another, or has a clear end point.

Figure 2.1

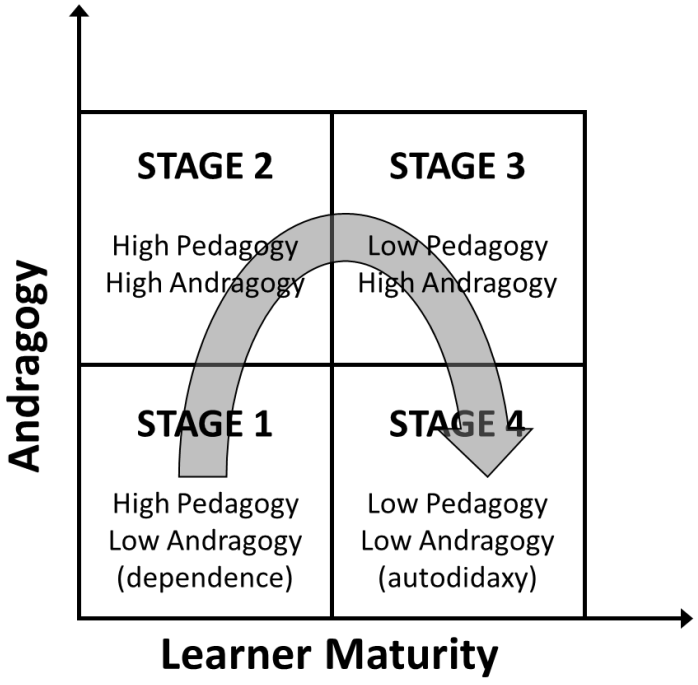

Figure 2.1 – Progression from pedagogic learning to andragogic learning (adapted from Delahaye et al., 1994). As a learner matures they typically move from a highly dependent state (high pedagogy, low andragogy) to a state of autodidaxy (where they decide their own learning needs and learning is primarily informal learning).

Other critiques of andragogy focus on the limiting implications of the term as well as the concept. For example, the implicit gender bias of the term 'Andragogy' (derived from *Andros,* the Greek word for an adult male), which implicitly excludes other-gendered perspectives on learning (Sandlin, 2005). Another challenge is the assumed focus on European/Western models of lifelong learning, which espouse critical thinking and independence, but are not necessarily in tune with traditional norms in Asian or African educational cultures (Henschke, 2009). However, despite these challenges, the concept at least of andragogy as a goal for lifelong learners, and especially learners in HE, remains a potent concept.

2.2.2 Andragogic Learning in Higher Education

Andragogic and self-directed learning can have significant benefits. A meta-analysis of a broad range of literature relating to student-led learning in HE by Boyer et al. (2013) revealed a positive correlation between self-directed learning and increased motivation, confidence and a feeling of control over one's own progress. Another meta-analysis, this time specifically of medical education literature (Murad, Coto-Yglesias, Varkey, Prokop, & Murad, 2010), found that student-led learning was as effective as traditional didactic teaching methods, especially when the learners are able to identify their own learning resources to use.

The degree to which teaching approaches are pedagogic or andragogic in HE varies considerably, based on the personal attitudes of the teacher towards learning and teaching (Samuelowicz & Bain, 2001, 2002). Ironically for a sector which espouses independence and self-direction in learning, much of the academic activities in HE tend towards being teacher-centred didactic teaching, but this practice is changing (Wright, 2011). However, student-centred learning is seen as important for the development of agency and independence in learning (Boyer et al., 2013; O'Shea, 2003) as well as metacognitive and critical skills, and skills of synthesis of information (Bannert, Sonnenberg, Mengelkamp, & Pieger, 2015). Similarly, andragogic learning can be encouraged by good assessment and feedback practices, for example, by encouraging students to provide feedback on their own work, and critique the work of others (Nicol & McFarlane-Dick, 2006). However, scaffolding of the learning experience is important for successful outcomes, and without a form of structure around the student-led activities the outcomes can be less effective than active teaching, or even detrimental (Lefroy, Brosnan, & Creavin, 2011; Mahler, Wolcott, Swoboda, Wang, & Arnold, 2011). There, therefore, needs to be considerable care taken in the development of students as independent and self-managed learners, and the transition from pedagogic to andragogic learning is potentially a seismic shift in an individual's approach to learning.

2.2.3 Models of andragogic learning in Higher Education

Developing and enhancing learning to develop deep learning approaches, whereby the learner understands the subject holistically, rather than merely memorising factual content (Entwhistle & Peterson, 2004; McCune & Entwhistle, 2011), requires more than just listening and reading (Nilson, 2013). Effective andragogic learning requires the setting of goals, the planning of the work and how to go about the task effectively, and then summary and reinforcement the subject material. These approaches can be supplemented to a lesser or greater extent by the teacher and the classroom activities designed with the learning environment. However, the development of deep and lasting learning requires independent activity on the part of the learner. Students working outside of the classroom can be described in several different ways as undertaking either independent, informal, ubiquitous, self-directed or self-regulated learning. Each of these terms has a subtly different meaning or inference:

Informal Learning, also known as *Incidental* learning, typically has an emphasis on the experiential learning undertaken as part of everyday experience (Marsick & Watkins, 1990, 2001; Marsick, Watkins, Callahan, & Volpe, 2008). For example, the adoption of certain life skills and language from those within the immediate vicinity of the learner (parents, siblings, family members and societal peers), or on-the-job learning of skills through repetition. Informal learning can either take place outside of the classroom in the absence of the teacher (Cox, 2013) or within classroom as an unintended result of participating in other learning activities (Lee, Tsai, Chai, & Koh, 2014). Informal learning is typically difficult to categorise, due to its very nature as an unintended and passive learning experience. Informal learning typically has no defined goals or end-point (Boekaerts & Minnaert, 1999; Greenhow & Lewin, 2016), and proceeds over an extended period of time. In many cases the learner is unaware of the progress they have made as they may be learning in many ways of which they are personally unaware.

Ubiquitous Learning is a development of informal learning, which encompasses the social dimension of learning by interacting with a variety of sources of information, including recent advances in information technology which allow access of information at all times and through a variety of media, such as smartphones, peer-networks and learning services (García-Sánchez, 2012). Ubiquitous learning is typically intuitive on the part of the learner (Yang, 2006) in how they identify the right sources of information, or collaborators, based on their immediate environment, available facilities, and/or social context. The development of a ubiquitous learning environment, whereby the learner has access to a range of different options for information acquisition, and a network of peers who can support and reinforce learning, can lead to positive learning outcomes (Garcia-Sanchez, 2017) and increased self-confidence and agency on the part of the learner.

Self-Directed Learning (SDL) is usually focused around the undertaking of learning activities that have been designed and/or set by the teacher, such as homework or directed reading (Boyer et al., 2013; Lai, Shum, & Tian, 2014; Mazmanian & Feldman, 2011). In SDL the learner controls the environment in which they learn, and are responsible for ensuring that they achieve the requirements of the overall learning situation. However, the emphasis is typically on the learner fulfilling a specific requirement for the course of study, such as a guided study task or a set of required reading for a face-to-face contact activity (Kohns & Ponton, 2006). Due to its requirement for self-motivation and self-assessment of learning, SDL is a common requirement of HE learning (Boyer et al., 2013; Mazmanian & Feldman, 2011), especially in subjects such as Literature, which require extensive amounts of reading of texts. Typically, as a degree course progresses, more SDL is expected of the student (Daily & Landis, 2014; Premkumar et al., 2013), to supplement the material delivered in class with additional reading, often with an emphasis that this should follow the student's own particular interests. For SDL to be maximally-effective, however, it does require structure to be put in place by the teacher (Dynan, Cate, & Rhee, 2008). The majority of research on SDL describes structured or semi-structured teacher-designed tasks within the curriculum (for example, Moos & Ringdal, 2012; Murad et al., 2010; O'Shea, 2003), rather than investigating student-led study behaviour to expand or develop learning. This need for an imposed structure has significant implications for the efficacy of SDL.

Self-Regulated Learning (SRL) is often used interchangeably with SDL, but has a subtle greater emphasis on the student as the manager of the learning experience (Boekaerts, 1997, 1999). In SRL there is more emphasis on the learner as the active (or proactive) party in the planning and development of the learning process. The learner adopts the key role in setting their own goals and learning outcomes, assessing their own progress in their learning or understanding, managing the environment in which they study. SRL is sometimes conflated with the concept of *metacognition*, the awareness and knowledge of one's own thinking or action (Zimmerman, 2002). Metacognition can have an aspect of reflecting on one's own skill levels and providing self-feedback on one's own learning levels (Nilson, 2013), but SRL has a greater emphasis on the student regulating the process (aims, progress, methodology and environment) of learning, rather than just the cognitive process itself. As the approach of SRL has the most active student input into the management and progress of the learning experience, and therefore the most relevance to the scope of this EdD project, it is worthwhile focusing on this aspect in more depth.

2.3 Self-Regulated Learning

2.3.1 Models of Self-Regulated Learning

Zimmerman (1989a, 1989b, 1990) highlights several key aspects of SRL, which emphasise the impact of cognitive, situational, environmental, and motivational factors on the learning process, and which can be built into functional models. According to the model by Zimmerman and Campillo (Zimmerman & Campillo, 2003; also summarised in Zimmerman, 2002; 2008), SRL passes through three cyclic phases: (1) The *Precreational* or *Forethought Phase*, in which goals are set and strategic planning ensues; this phase is strongly affected by self-motivational beliefs, such as self-efficacy, goal orientation and expectations of outcomes. (2) The *Actional* or *Performance Phase*, the actual learning phase where the learner instructs themself, developing strategies for completing tasks, self-monitoring of knowledge and understanding gains. This phase involves self-observation as a key strategy, requiring metacognitive monitoring and self-recording of learning gains and understanding. Finally (3) The *Postactional* or *Self-Reflective* phase where the learner evaluates their status, applying self-judgement to evaluate their capabilities and knowledge/ understanding level, and identifies how they achieved that understanding by use of metacognitive strategies. This phase requires the learner to adopt self-reactive strategies that assess the efficacy of their learning methodologies and provides either positive or negative feedback on their actions.

Zimmerman's three phases are aligned closely to a similar three-phase 'regulatory checklist' by Schraw (1998) for understanding metacognition: Planning, monitoring, and evaluating. Planning involves the learner asking what is the nature of the task, their goal, and the strategies and resources required to achieve success. Monitoring involves verifying a clear understanding of the task required, whether it makes sense, are the goals being reached, and if not, what changes are needed to remedy this deficiency? Finally, evaluating reflects on whether the goal was reached, what did and did not work, and what should be done differently in the future? Each of these stages is self-reflective and self-regulatory, empowering the learner to assess their own goals, capabilities and progress. The key focus of this checklist is in monitoring attainment and progress through self-reflection.

Both of the above models rely on a pre-, during- and post-activity reflective process. Effective SRL is therefore reliant on the self-reflective ability of the learner, a process outlined by the model developed by Lehmann, Hähnlein, and Ifenthaler (2014; summarised in Table 2.1). Lehmann et al. describe three dimensions of mental processing: Cognitive, metacognitive and motivational. Each of these dimensions has both a *Structural* component (stable, habitual, intuitive behaviours) and a *Processual* component (spontaneous, impulsive, or instantaneous behaviours or activities). The *Cognitive* dimension, addressing the internal processing of information, requires domain-specific knowledge and strategic knowledge, and the processing of information and setting of goals. The *Metacognitive* dimension, involving the ability to regulate the mental processing activities and

Table 2.1 - Summary of the self-regulated learning model proposed in Lehmann et al. (2014), highlighting three dimensions of self-regulated learning, each with a structural and processual component.

	Cognitive Dimension	**Metacognitive Dimension**	**Motivational Dimension**
Structural Component	• Knowledge of the specific subject domain • Strategic knowledge of the learning activity	• Knowledge of the cognitive process • Knowledge of the task being undertaken	• Interest in the subject of the activity • Personal beliefs and perspectives • Competence in the subject
Processual Component	• Cognitive information processing • Setting of the target goals of the learning activity	• Planning of the task • Monitoring of progress • Evaluation of the outcomes	• Affective processes that support and promote learning • Strategies directed by personal will

evaluate their efficacy requires knowledge of cognition and understanding of the tasks involved in learning. This aspect requires planning, monitoring and constant re-evaluation of the learning processes. Finally, the *Motivational* dimension, which includes factors which influence behaviour and goal-setting activities, requires the learner to balance their interests, beliefs and competences, and develop approaches that enable the learner to affect their own activity.

The interaction of cognitive processing modes and processual actions are also featured prominently in another model of SRL, proposed by Boekaerts (1999), highlights the iterative nature of SRL, emphasising that SRL is a series of processes – both cognitive and affective – which continually shape and reshape each other in the development of understanding. Boekaerts conceives this model as a series of three concentric rings (see Figure 2.2). The outer ring relates to processes of self-regulation and the choice of goals and resources. The middle layer is concerned with the regulation of learning as a process, and the use of metacognitive skills and knowledge by the learner to direct their own learning activities. Finally, the inside layer is focused around the regulation of modes of processing of information, and the choice of cognitive methods and strategies involved in this. It is important for these layers to interact iteratively with each other as the learner gains new experiences, and develops new strategies. Too much external influence can be limiting (Weinert, Schrader, & Helmke, 1989) as it limits development if it replaces metacognitive awareness or planning on the part of the learner. Boekaerts's concentric model implies that each aspect of SRL is co-dependent on the other, and this

Figure 2.2

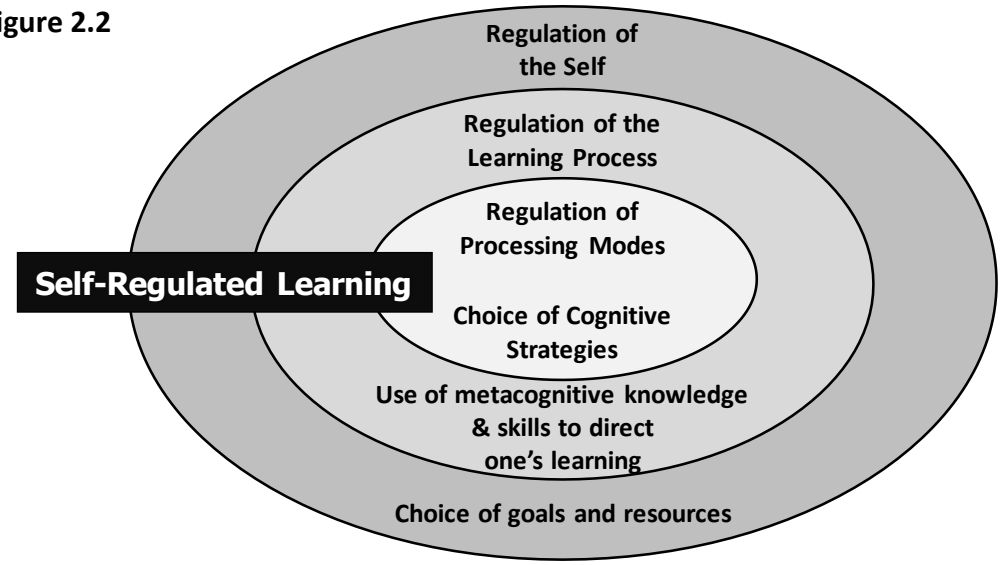

Figure 2.2 – The concentric model of self-regulated learning, showing the three levels of regulation and the strategies required for these (Boekaerts, 1999).

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has considerable validity based on evidence of student learning, and the nature of the difficulties encountered by students who struggle at SRL (Doyle, 2011; McGuire, 2015). Boekaerts's concentric ring model will be revisited later in the conclusion of this thesis (section 9.3).

Davis (2003), and Lehmann et al. (2014), highlight the importance of 'prompts' in SRL, which support the metacognitive learning strategies (critical thinking, elaboration, mental stimulation and motivation) of the learner. Prompts are typically words, short sentences, questions, images, pictures, or fragments from multimedia sources, which induce a memory or metacognitive response. Prompts can either be *generic*, which involve the learner thinking and reflecting broadly, and which are developed intuitively by the learner themselves; or *directed* prompts which elicit thought about a specific fact or concept, or guide the use of a particular solution when generic reflection is insufficient to the needs of the situation. Davis (2003) summarises these as "Stop and Think" and "Stop and Think About…" respectively. Davis's findings suggested that students adopting a generic prompt were able to develop deeper understanding of a subject or project, and that these prompts were more typical of students with greater autonomy and an ability to think broadly about a concept. The students adopting directed prompts were typically more-limited in the scope of their understanding and less able to apply their knowledge and understanding towards problem solving, or in unfamiliar situations.

The commonality between all of the models of SRL is that they each feature the active use of metacognitive strategies in order for the learner to manage their learning effectively. Therefore, a key area of analysis for SRL is to evaluate the methodologies adopted by learners themselves to learn independently outside of the classroom. An understanding of how students adopt these methodologies, and why, would illustrate the metacognitive processes behind their development of SRL, and the decision-making processes involved.

2.3.2 Factors influencing the development of SRL

There are several quantitative means of evaluating a student's capabilities with SRL, the two most commonly-used being the motivated strategies for learning questionnaire (Pintrich & De Groot, 1990) and the self-regulated online learning questionnaire (Jansen, Leeuwen, Janssen, Kester, & Kalz, 2017). Researchers have used these measures to quantify the SRL-readiness of students, with inconclusive results. A questionnaire-based study comparing the perceptions of 73 First Year bioscience students and 47 of their tutors, did not reveal any reproducible demographic bias regarding SRL efficacy regarding gender, ethnicity, or discipline of study (Virtanen & Nevgi, 2010). This study did find some correlations between demographics and disciplines, but these were very specific (e.g. females in behavioural sciences were more adept at SRL, males in technology were less adept). There is perhaps a combinatory effect of discipline and other factors, although this may equally be a bias in recruitment into the disciplines as effect of the discipline itself. In a survey-based study of metacognitive, cognitive, and behavioural strategies in 828 final year students in Hong Kong, common traits aligned with effective SRL, such as motivation, positive attitude, academic attainment and self-awareness (Ning & Downing, 2015), as well as less evident anxiety under exam conditions. However it was not clear whether these factors are contributory factors towards effective SRL, or the effects of it.

It is common for learners and teachers alike to misunderstand SRL, and the visible impacts of effective and non-effective self-regulation (Bjork et al., 2013). Students can often confuse academic ability with the efficacy of SRL, or assume that SRL is itself straightforward. In a positional article, based on a review of the key components of successful SRL reported in the literature, Cassidy (2011) suggests that there is a complex interplay of factors that influences the development of SRL – efficacy of student self-evaluation, their preference for learning approaches, and the extent to which they feel they are independent or controlled by others in their learning. Motivation is a particularly significant factor, both the commitment to study, and the expected outcome can influence the efficacy of SRL. An evaluation of SRL activity related to a 'massive open online course' (MOOC; Littlejohn, Hood, Milligan, & Mustain, 2015) highlighted that differing motivations of students on the course impacted on their study approaches and the efficacy of these. In addition, in a survey-based study of the epistemological beliefs and motivational learning strategies of 502 students by Paulsen and Feldman (2005), students' epistemological beliefs about the role and stability of knowledge, and the student's own perceived ability to learn, were both found to influence SRL approaches.

Several methodologies have been proposed to enhance SRL. Self-reflective portfolios appear to have positive effects on SRL (Lam, 2013). Students' use of collaborative technologies also correlates with effective SRL (Yot-Domínguez & Marcelo, 2017). A combination of both of these factors is effective for encouraging self-reflection and discussion of the SRL process (Cheng & Chau, 2013). However, a longitudinal study of post-graduate teachers across a year of study in fact found that despite training

in SRL, students did not become any more self-regulated during their course (Endedijk, Vermunt, Meijer, & Brekelmans, 2014). These authors posit several explanations for this finding, including the possibility that as they become more effective as teachers, and confident in their teaching skills, the students need to focus less on actively changing their own learning approaches. Another suggestion is that, for the students, the year of study is primarily one of consolidation, and real progressive learning takes place only after they enter the workplace. Development of SRL appears to require both the investment of the learner, and the correct drivers for development to need to occur. Furthermore, on a programme of study that includes teacher training, the focus is perhaps more on how student teachers can drive the learning of others, and less on themselves as learners.

Despite the importance of SRL, there is little in the literature that addresses students' perceptions of SRL and how their own self-regulated approaches develop. Based on their review of the literature around SRL beliefs and perceptions, Bjork et al. (2013) suggest that both students and academic staff have considerable misconceptions about students' use of SRL, and so it is important to hear these perceptions from the learners themselves, and identify the core factors driving and supporting development from their own experiences. A common thread in the development of effective SRL appears to be the importance of the ability to discuss and compare experiences and strategies. This finding aligns with models that place social interaction at the centre of the learning process.

2.4 Social interactions in learning

2.4.1 Sociocultural models of learning – Apprenticeship models

Socio-cultural models of learning emphasise that learning is a social and collaborative activity undertaken by interaction with the person, or at least outputs, of others (Bruner, 1996). As a result of being situated in a social environment, or set of social interactions, effective learning requires the complex interactions of the learner with knowledgeable others. These might be peers, with whom the learner is able to discuss their understanding and join in developing ideas. Alternatively, more-experienced others, such as a teacher, elder, parent or more-experienced colleague, whom the learner can observe, participate in the activities of, and/or follow instructions/guidance from.

Many sociocultural theorists have defined this learning interaction between individuals. The majority of these theorists highlight the interaction between a learner and a more-experienced other who is senior to them in either experience, status or knowledge base. Under Vygotsky's (1978) model of learning, the relationship between a learner and an expert is key to the learning. The knowledge gap between the learner and the more-expert other is the 'Zone of Proximal Development' (ZPD; Vygotsky, 1978). Through interactions such as observing, discussing, and participating in increasingly-

complex tasks, the learner develops insights and experience from the expert, narrowing the ZPD as the learner becomes increasingly adept. The expert drives this relationship by presenting the learner with tasks that place him/her outside of their comfort zone, into situations where learning can occur.

Rogoff (2003) also framed the collaborative learning activity in terms of the social interaction between an expert (e.g. a parent) and a novice (e.g. a child), which follows an apprenticeship framework, where in early years the child follows the parent, observing their actions, learning language and social norms from their guidance. As part of the learning relationship, the adult imparts guidance to the child as they perform everyday tasks through 'guided participation' (Rogoff, 2003; Rogoff & Lave, 1984). Dialogue between the adult and the child is key in this interaction (Rogoff & Lave, 1984), and the role of the adult is to involve the child in increasingly more-complex tasks as the child gains confidence and expertise. Interaction and dialogue between an expert and a learner therefore form the basis of these methods of learning. Even though many of these models are based on a parent-child relationship, they are still relevant to learning interactions between older participants. An example of this adult-centred interaction is the learner teacher and experienced teacher interaction described by Rogoff, Turkanis, and Bartlett (2001). The similar principle of guided participation worked equally in this apprentice-like relationship.

These apprenticeship models have strong parallels with Lave and Wenger's (1991) model of Legitimate Peripheral Participation (LPP) within a Community of Practice (CoP), through which a naïve learner, who is initially on the periphery of a CoP becomes increasingly encultured within that CoP by increasingly complex interactions. Initially the interaction, similar to Rogoff's model, is one of observation and simple tasks, but then as the learner becomes more central to the CoP, the direction of learning changes from one where the support for learning is primarily received, to one where it is primarily imparted to others. Again, interaction and dialogue are fundamental to this process (Lave & Wenger, 1991; Tusting, 2005), so that the learner develops a negotiated understanding of their environment and utilises the experience of the expert to modify their own behaviour. There are strong parallels between the model of a CoP and the structure of higher education. There is a divide between a novice (undergraduate student) and expert (lecturers/tutors), and an instructional relationship between them, whereby the novice party is anticipated to become more like the more-expert party. However, there are several areas in which the HE sector does not follow the CoP model. Firstly CoPs were initially proposed to be spontaneous and to grow from small communities, but be limited in larger groups (Roberts, 2006) so the development of a CoP may be limited in large university classes or large schools/departments. Arthur (2016) argues that further differences are that Universities are primarily focused on the production of knowledge, often in a decontextualized way, rather than the development of skills more typical of a CoP. However, Arthur also notes that the shift in importance within the HE sector away from abstract knowledge, and towards the of academic and transferable skills, means that this difference is diminishing. Arthur also argues that the structure of

a university, and/or a school/department within that university, are looser structures than the close-knit communities described by Lave and Wenger in their original proposals of the CoP model.

2.4.2 Sociocultural models of learning – Peer-based models

The models described above each suggest a learning relationship between an expert and a novice. The expert directs the learning of the novice, and the novice experiences the learning gains. However, some models of collaborative learning emphasise that learning is rarely unidirectional, but shared. Mercer's revision of Vygotsky's ZPD as the 'Intermental Development Zone' (IDZ; Mercer, 1996; Mercer & Littleton, 2006) emphasises that, even in an expert-novice relationship, learning occurs for both parties. The IDZ is the gap in knowledge between the individuals of a learning group or partnership, and is revealed, explored and narrowed by the members of the group questioning each other, and debating ideas and concepts through discussion. As a result of this exploratory discussion, the group participants challenge each other's assumptions and fill-in their own gaps in knowledge, understanding or perception with those of their peers (Gillies, 2014). By engaging in discourse with each other, individuals are able to 'think together' to develop the important shared understanding based on their differential experiences (Mercer, 1995, 2002). An important factor of the IDZ is that it is a knowledge space that may be shared between learners of equal, or near-equal, experience. It is not necessarily the case that the more-capable or knowledgeable learners drive the learning or contribute most. A study of school children working collaboratively to read and understand a graphic novel (Jakubik & Hmelo-Silver, 2014), revealed a situation where the less-capable children in a group of learners were able to support the learning of the more-academic member of the group, who misunderstood the task in question by over-thinking it. This study suggests that the less-capable or more-naïve individuals who provide the richest insights. Peer-led or peer-supported learning is therefore a powerful learning activity, and partners with a range of knowledge, experiences and academic abilities can contribute to the learning experience.

2.4.3 Peer-led and peer-supported Learning

There are various forms of peer-focused learning, each with nuanced differences. Most commonly-used are collaborative learning and co-operative learning (Dillenbourg, 1999; Dillenbourg, Baker, Blaye, & O'Malley, 1996). *Co-operative learning* is where individuals work as a group, but divide the task into manageable packages that individuals undertake, before combining the outputs of these packages to solve the task as a whole. *Collaborative learning* differs by not subdividing the task between individuals. Instead, all individuals contribute equally to each aspect of the task and develop a shared understanding, informed by various perspectives. (Dillenbourg, 1999; Dooly, 2008;

McWhaw, Schnackenberg, Sclater, & Abrami, 2003). Both co-operative and collaborative learning are typically task-focused and usually highly structured activities, usually requiring 'scaffolding' put in place by the teacher (Bruner, 1978). Scaffolding may be the setting of specific tasks, the formation of collaborative groups, or the mediation of group difficulties as they arise. This scaffolding, however, is generally set in place by the teacher, and as such imposes an implicit structure, i.e. the participants in formal collaborative learning will tend to undertake what they perceive as the wishes of the teacher, rather than exploring their own path (Hubscher-Younger & Narayanan, 2003). True collaborative and co-operative learning can occur outside of formal learning environments, but this is rare (Scott, Mistry, et al., 2014; Scott, Moxham, & Rutherford, 2014).

A less-structured form of group-based learning is *peer-led learning*, where a group of academic peers drive their own studying and learning regime (Preszler, 2009). This might involve peer-teaching of a subject by one individual to their colleagues; or peer-driven study groups which develop their own curriculum and share knowledge. Peer-led learning is still typically directed towards a goal, such as an assignment or revision, or completion of a task. *Peer-supported* learning is where peers and other acquaintances provide reinforcement, advice, moral support, the answers to specific questions, or act as 'sounding boards' for ideas. In this environment, the peer is acting in a supporting role (either an active or passive one), rather than as an active co-participant in the same learning activity. In peer-supported learning, the other person does not necessarily have a personal stake in the learning activity itself. The other person may be an outsider (e.g. someone not taking that class or course), or someone within the class who is not actively collaborating on the output of the activity (i.e. not answering the same essay, or not part of the same group activity). Interactions of peer-supported learning can be diverse, involve a range of participants, and include both uni- and bi-directional interactions. An example of this diversity of interactions was found in an evaluation of a microbiology course by Trempy, Skinner, and Siebold (2002), who found that collaborative and cooperative activities promoted problem-solving, critical skills, team-work, and communication skills.

2.4.4 Impact of peer-supported learning on learning approaches

Attitudes and approaches towards to learning can have a significant impact on learning behaviours. The adoption of 'deep learning' strategies is often seen as important to HE study, where the student undertakes a holistic review of the subject area, rather than learning key or specific facts by rote (Entwhistle & Peterson, 2004; McCune & Entwhistle, 2011). A deep approach to learning typically involves additional reading, reflection on the subject and problem-solving methodologies. This approach aligns with the paradigm for much of HE learning and teaching, although deep learners are not necessarily a majority in undergraduate populations (Entwhistle & McCune, 2004). Peer-supported learning has the potential to enhance deep learning strategies and their development. A

key requirement of deep learning is the development of a degree of self-reflection and self-awareness in the learner (McCune & Entwhistle, 2011). This self-awareness enables the learner to develop skills of 'supercomplexity', the ability to deal with multi-level challenges and conflicting complex situations (Barnett, 2000, 2007). Through engagement with dialogue, a collaborative learner is becoming self-reflective and more aware of their own competencies and limitations (Perumal, 2008). Devolder, van Braak, and Tondeur (2012) suggest that self-regulated learners are more likely to also be deep learners as they may appreciate the broader context of a subject over the surface learner approach of focusing on key required information, regardless of context. Peer-based activities require the development of a 'self-authoring mind' (Coughlin, 2015), the ability to construct and curate knowledge independent of and external authority, which in turn is fundamental to both SRL and deep learning (Iborra, Garcia, Margalef, & Pérez, 2010). Interactions with peers can enrich the opportunities for learning for an individual, both through discussion of differing points of view, and through the increased resources for information and support. The development of these learning support networks, a Personal Learning Network (PLN), is important to the development of SRL.

2.4.5 Personal Learning Networks

Forming learning networks, where peers can support each other, has the potential to greatly enhance learning. Peer-based communities of learners can develop their own scaffolding for learning. Järvelä, Näykki, Laru, and Luokkanen (2007) showed positive effects of encouraging peers to co-develop their learning approaches by explaining and visualising material to peers in collaborative online media. Scott et al. (2014) also found that by encouraging students to collaborate, and share their resources using collaborative online media, learners felt that their learning was made more-effective.

Lee et al. (2014) suggested that peer-interactions and SRL may be mutually supportive, as both potentially develop deep learning strategies and encourage independence and self-criticism. Working collaboratively will enable learners to become aware of the gaps in their own knowledge by comparing their own understanding with the perceptions of their peers. A combination of peer-interaction and SRL can support the development of 'epistemic agency' (the ability of learning how to learn), a key factor in the development of learners structuring and supporting their own learning. However, there is limited research into the process and development of collaboration in SRL.

For peer-supported learning activities to be effective, they require considerable 'buy-in' by participants (Lent, Schmidt, & Schmidt, 2006), and for true collaborative learning to function efficiently, it requires high levels of student participation (Perumal, 2008). A perceived lack of direct personal gain from a collaborative or peer-based experience can also limit the participant's engagement with the learning process (Gillet, El Helou, Yu, & Salzmann, 2008), often leading to

resentment that others might be taking advantage of their effort to 'learn for free' (Perumal, 2008). The change in power relationships in a collaborative learning environment may cause uncertainty among the learners (Ares, 2008), and personal politics or even problems with management of the group can lead to some learners being excluded from learning group and therefore the learning experience as a whole when the activities are collaborative in nature.

Personality is clearly a significant impact on the success of peer-based interactions, especially outside of the structure of the classroom. Some students lack sufficient confidence to contribute to group discussions effectively (Wang & Lin, 2007) or under-rate their own knowledge base or ability. Students can exhibit reluctance to share their expertise or effort with peers who are less-engaged or less-able than themselves (Gillet et al., 2008). Introverts may also eschew collaborative interactions (Cain, 2013). Some students find the lack of a formal structure to the learning activities disconcerting (Ares, 2008; Hubscher-Younger & Narayanan, 2003), as the collaborative learning environment by default is learner-led rather than teacher-led. Each of these concerns is a barrier to collaboration having an effective impact and being stably-integrated within SRL. It is therefore important to understand the extent to which scaffolding is required by students in undertaking SRL collaboratively.

Regardless of its perceived effectiveness, all learners develop a 'Personal Learning Network' (PLN, Richardson & Mancabelli, 2011) with which they support their learning. A PLN is the totality of support resources that an individual has to draw on for learning in their professional (or everyday) life. A PLN will typically include: People the individual knows, or has contact with; social groups the individual is part of; technologies (such as online resources, as well as non-digital sources of information) that are accessible; actions, choices, and behaviours the individual undertakes; and set activities that are part of their professional or domestic life.

PLNs can exist as part of a broader structure of a 'Personal Learning Environment' (see Figure 2.3, Wheeler, 2010) which takes in broader experiences and informal learning experiences through the media and everyday interactions. Intersecting both of these spaces is the individual's engagement with their 'Personal Web Tools' and 'Cloud Learning Environment', which are technology-focused spaces that provide the learner with online sources of information, or connections and collaborations with individuals who can provide support.

The fundamental aspect of a PLN is the co-construction of the network and its reciprocity. Human members of the PLN (be they face-to-face collaborators or online connections) provide each other with support, but also obtain support from each other. There is therefore a two-way flow of social and digital capital from each part of the network, such as providing support to others, answering questions, providing technical support, or sharing references, ideas and/or online resources. An interview based study by (Rajagopal, Brinke, Bruggen, & Sloep, 2012) highlighted the importance of reciprocity, with 'benevolence' (trustworthiness and goodwill) of the collaborating partner, and the

Figure 2.3

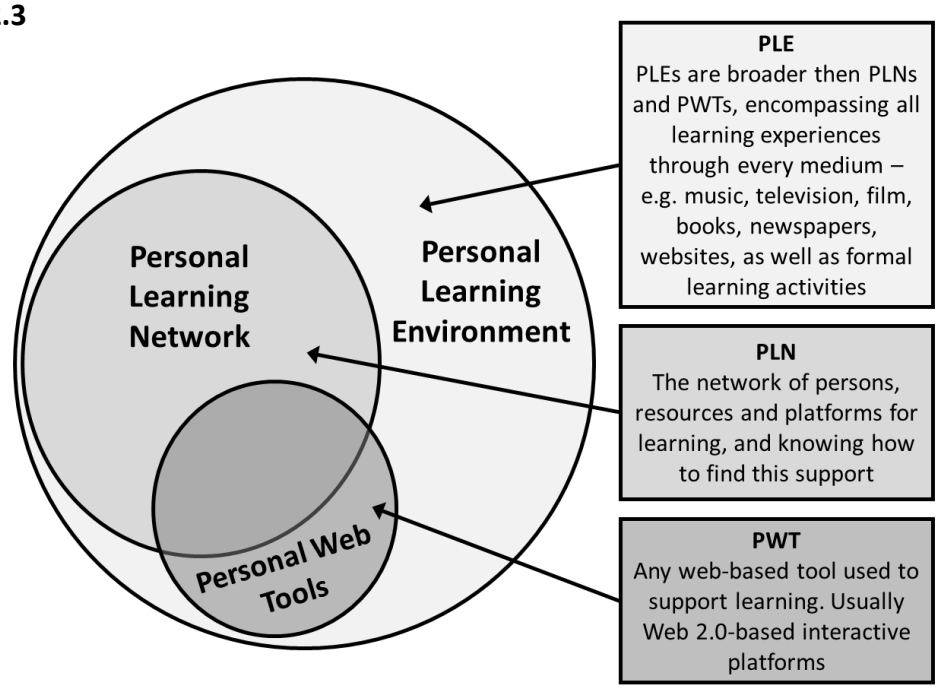

Figure 2.3 – Interactions between the Personal Learning Environment (PLE), Personal Learning Network (PLN) and suite of Personal Web Tools (PWT). There is overlap between PLN and PWT, however both are constituents of the PLE. Adapted from Wheeler, 2010.

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real potential for collaboration (the potential to share information) being core themes from the analysis. This element of reciprocity is of significant importance and is needed in order for the PLN to be self-sustaining.

PLNs are self-organising and self-developing, so when the individual changes their environment, or focus for learning, the PLN will – out of necessity – also change, as new social and academic groups are formed, and contacts from the old network disappear. Individuals may not always be fully aware of the extent of their PLN, and so may not appreciate the extent to which they rely on others. A key factor, therefore, is what PLN forms around a particular individual, and how is it constituted. Each PLN will be unique to the individual, and will involve both subject specialists and generalists, technologies and groups/communities. The factors that influence the PLN are fundamental to its efficacy, and the efficacy of the individual's ability to undertake SRL.

Given the significance of communal learning and PLNs, a key question is what is the role of these social groups, communities and networks in the development of a student's SRL? To what extent do the social interactions in which a learner engages help or hinder the development of their strategies, and to what extent to learners rely on others, learn from them, or include them in this development. Similarly, to what extent does the support of others facilitate the reinforcement of understanding, and the development of learning strategies in the learner?

2.4.6 Models of peer-interactions during transition to university

The importance of others in learning is at the core of proposals for moving away from didactic teaching in HE, championed by Bligh (Bligh, 1971, 1990a), which emphasise the significance of discussion in learning. Bligh's suggestion that it is actively beneficial to encourage students to disagree with the teacher, and/or each other, is reliant on those parties talking to each other, sharing ideas, sharing differences of opinion, and using those to come to further understanding of the subject (Bligh, 1990b). The need for including others in the learning activity is therefore core to active learning approaches and encouraging students to be self-regulated and independent learners.

There are several models of social interaction in either higher or further education. Many of these models focus around the issue of retention and student withdrawal from the course, rather than the development of study skills, but they do highlight the significance of interactions with others. One of the classic models of social interaction and the impact upon student success was proposed by Tinto (1975), who sought to model factors that influenced student decisions to drop out of University. The model proposed an interaction between social and academic factors. Key to the persistence of a student at University were social integration with their peers and University life, and academic integration into the culture of the discipline. Critiques of Tinto's model (reviewed extensively in Aljohani, 2016), generally suggest that the model is too simplistic and does not take individual factors into account. Tinto himself revised his model (Tinto, 1982) to include individual drivers, such as the student's intentions, goal/institutional commitments and quality of effort. Tucker (1999) further developed Tinto's model, emphasising factors such as the student's future vision (future career and life plans, and a steady guide through transitions), and sense of community (anything that gave the student a sense of belonging to a group). These two factors are mutually-independent, and a healthy future vision encourages confidence and a sense of wellbeing, this makes the person more socially attractive, and therefore reinforces sense of community. Tucker also suggests that a healthy sense of community can help reinforce the person's confidence in their future vision. In Tinto's models, as well as Tucker's model, interaction with either a social group or discipline-specific group of colleagues is vital, and the interplay between those group interactions and individual characteristics or perspectives of the student are key.

Tinto's model was focused primarily on student success and retention. Other models take a broader view of student engagement, focusing on motivation and student responses to failure or success. Weiner (2000) proposed two models: An intrapersonal model of motivation (which highlighted personal responses to success or failure), and an interpersonal model of motivation (which highlighted the impact of others' perceptions, and their resultant actions, on a learner's motivation). Weiner's models were focused around the notion of agency regarding an event or outcome – such as a failed exam. Attitudes of others, and motivations of the student, differ dependent on whether the failure was due to factors that were or were not within the student's control. Factors that would have

been under the student's control (such as effort) elicited shame/guilt from the student, and derision/scorn from the observer; factors that were outside of the student's control (such as problems with the teaching, lack of feedback, timetabling errors or administrative problems) elicited anger and frustration from the student, but pity and sympathy from the observer. The combination of these intra- and interpersonal factors would encourage or inhibit motivation on the part of the student. This model reinforces the importance of the communal environment in which the student works.

2.4.7 Learning Communities

There is evidence to suggest that collectives of students form learning communities (reviewed by West & Williams, 2017). However, defining these is often challenging and open to misinterpretation. In an extensive discussion of learning communities and their interactions, Lenning, Hill, Saunders, Stokes, and Solan (2013) identify three interconnected learning communities, as shown in Figure 2.4: The student learning community (SLC), the professional learning community (PLC), and the learning organisation (LO). The SLC intersects with both of the others, and contains student-student, student-faculty, and student-curriculum interactions within it. Again in these models, interaction and interplay between the participants is important, and this interaction can be either face-to-face, virtual, or a mixture of both. Lenning *et* al. (2013) stress that powerful learning communities can enable students to excel over and above what they could achieve in isolation. The structure of learning communities is also described in detail by Lenning and Ebbers (1999), who identify that learning communities can be located both within the course of study and discipline, but also within social structures such as residential groups, hobbies and personal friendship circles. Effective learning communities can both support students to excel, but also support students who are underachieving, or have personal or emotional problems. The potential impact of an effective and established learning community is therefore significant, and can impact upon the student's transition, confidence and development of a positive identity.

Learning communities can also be ineffective (West & Williams, 2017). A focus group study of First Year student learning collaborations by Lichtenstein (2005) suggested that ineffective learning communities were those where there was a larger student group, with a lack of a sense of community. The study also suggested that a lack of coordination between teaching staff was detrimental to a learning community. The enthusiasm and personal engagement of the instructor was key to inspiring the same in the students.

Figure 2.4

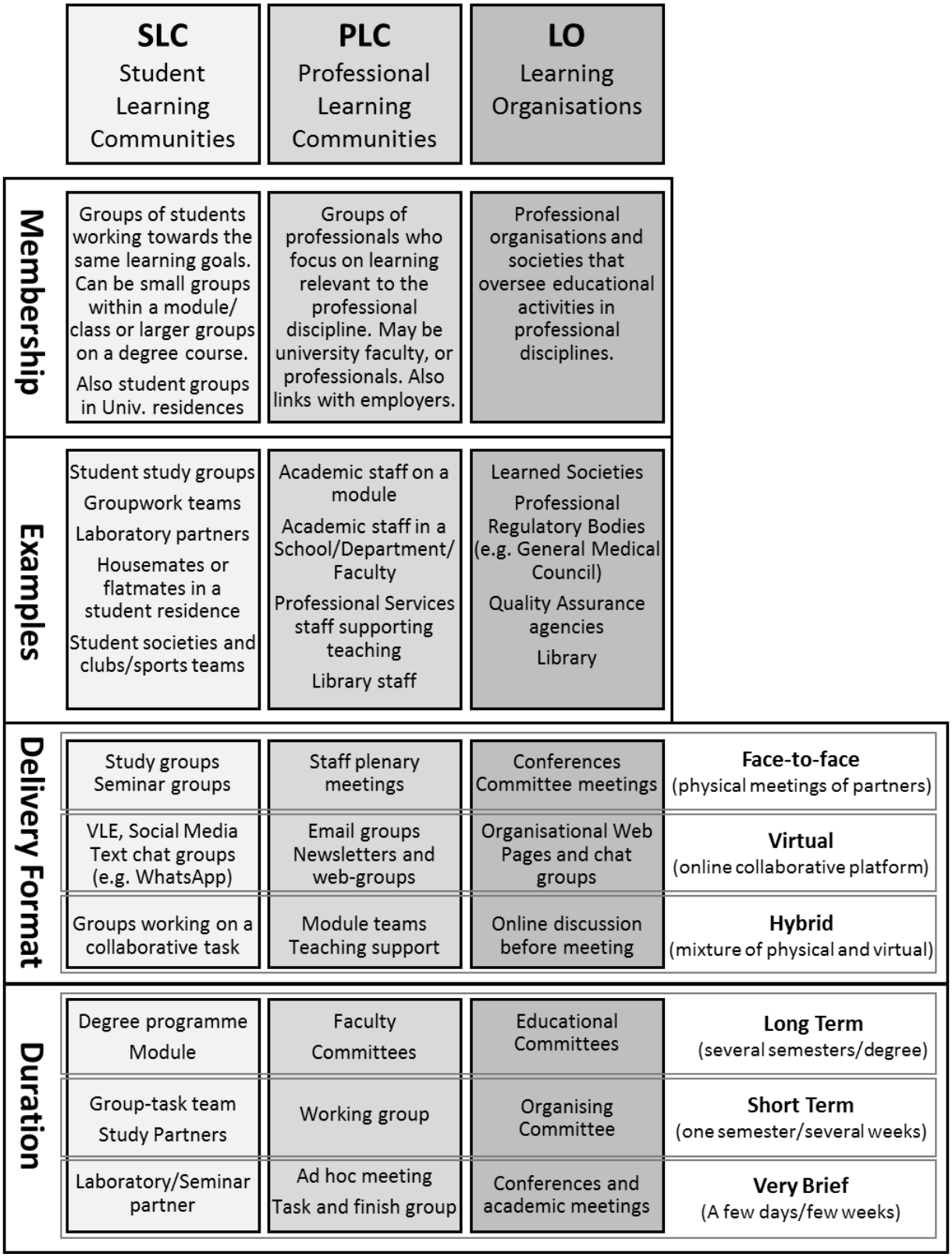

Figure 2.4 – Three forms of Learning Communities proposed by Lenning et al. (2013). Each form of learning community can be codified by its membership, delivery format, and duration. Delivery format and duration can be further divided into three aspects per parameter.

2.5 Developing agency and identity

2.5.1 Identity

A significant factor in the success of a learner is their own perceptions of self and their developing identity. Wortham (2006) described an 'ontological approach to learning', whereby learning changes the identity of the learner. The learner not only changes what they know, or how they know it, but also their self-view of who they are. As perceptions of self are strongly centred around an individual's perception of their environment and their place within it, models of the development of a learner's identity are strongly influenced by symbolic interactionism (Ashwin, 2012), the development of our perceptions of the world based on our experiences with that world. Ashwin argues that identity is a dynamic concept, and develops according to the influences of the environment, peers, gender expectations, social interactions and personal expectations (and whether or not these are realistic and/or met). The learner's identity, as it forms, also helps inform their place in society as a whole (Jarvis, 2009), a characteristic more prevalent in older learners rather than young children. As a learner's identity develops and relates to a broader context, they gain a better ability to reflect on their own capabilities or deficiencies (Schraw, 1998), and become more metacognitive in their approaches to study.

2.5.2 Development of an agentic identity

Our identity constantly changes as we learn, and different experiences and different trajectories shape these identities as we progress. Identity is strongly linked to agency (Krotosky & Hammersley, 2015; Schwartz, Côté, & Arnett, 2016), and an agentic identity is where the individual perceives themselves as capable of change and/or controlling their own future development. The perceptions that the individual is both capable and responsible for their own development are core to this identity (Billett, 2006; Schwartz et al., 2016). Development of agentic student identity is discussed at length by Wenger (1998), who describes identity as a pivot between the social and the individual. Building identity involves negotiation of a range of experiences within different communities. Identity is a negotiated experience, and part of an overall trajectory of learning. Individuals will perceive themselves as agentic, or not, depending on their experiences and their expectations of themselves. High levels of agency are related to flexibility and openness to change (Schwartz et al., 2016). Identity can also vary between situations, for example in Dweck's mindset model of identity (Dweck, 2006). Dweck proposes two states of self-perception regarding learning: Open Mindset (where the learner sees themselves as competent, and/or capable of improvement and further development), and Closed Mindset (where the learner perceives that they are incompetent, and/or unable to develop, improve or progress). Dweck suggests that a learner can have a closed-mindset regarding one subject,

whilst maintaining an open-mindset for another. For example seeing themselves as capable in history or languages, but that they 'cannot do maths'. Self-perceptions have potentially significant impacts on the learner's self-image, and therefore identity is strongly based on experience and social interpretations, both real and perceived (Wenger, 1998).

With the development of an agentic identity being central to the learning experience, student, identity is therefore a potential driver of student behaviour in learning. Identity, and perceptions of agency, may therefore impact significantly on the development of a student's SRL.

2.6 Conclusions and research objectives

The key observations from this literature review are that SRL is a fundamental skill for university learners, but is not necessarily something which is easily attained or developed. In order to become proficient at SRL, the learner requires metacognitive ability of several aspects of themselves and how they interact with others (Schraw, 1998). Interactions with peers, teachers, and social groups also appear to be significant to the development of SRL, and so the nature of these interactions is important to investigate. Similarly, there are several factors which impact both upon the development of study approaches, the development of self-regulation, and the interactions an individual has with the larger learning community around them.

Key objectives for this study were to identify the extent to which students exhibit characteristics of SRL, and to what extent these are effective to support their learning. There is a potential change in educational outlook moving from a teacher-centred (pedagogic) to a learner-centred (andragogic) learning environment during transition to university. It is important to map how learning approaches, and perceptions of the learning environment, change during the transition to and through university. It is anticipated that a range of factors will act either as drivers or barriers to effective development of SRL. The objective of this research is to identify those factors, to suggest potential approaches to address them, and better-support students as they progress into this new educational environment.

Chapter 3

METHODOLOGY

3.0 Introduction

This chapter outlines the epistemological and ontological frameworks for the study, as well as the methodological approaches for data generation and analysis. The study was wholly qualitative in the data generation and analysis, using Constructivist Grounded Theory (Charmaz, 2014) as an analytical paradigm. In addition, the social interactions between the participants and their peers were further scrutinised using another analytical approach, Situational Analysis (Clarke, 2003, 2005). The rationale for the research design and methodology, relative to the research aims of the study, are discussed.

3.1 Scope of the study and Research Questions

3.1.1 Scope of the study

The change from a pedagogic to andragogic learning environment is a gradual one that occurs over many years of study and development. However, a baseline is needed for such an expansive analysis, and therefore a discrete period was chosen. Year 1 of the degree was selected as a focus for the analysis, as it was potentially the most significant nexus of change. This period was identified in the review of the literature on transition to university, development of self-regulation, and retention at university as being highly significant for student development, and in which there were likely to be challenges experienced by the learner. Transition to Year 1 included several changes: from secondary to tertiary education; expectations upon the learner; institution of learning; social environment for the learner (and typically geographical location as well); and teaching methods. As a result, the SRL approach of the learner was likely to undergo considerable change during this period. Participants were therefore engaged in the study across the first year of their University course. The choice of this time-point would enable the participants to reflect on their school experience at the beginning, as well as to be followed through their formative development as an undergraduate.

3.1.2 The research questions

The research questions arose from the literature review, and further subsidiary questions were appended to them as possible areas to address within the interview process (summarised on Figure 3.1). The research questions and in particular, the subsidiary questions, were used as guides to the development of interview questions, and to help inform incidental the follow-up questions during the interview.

Figure 3.1

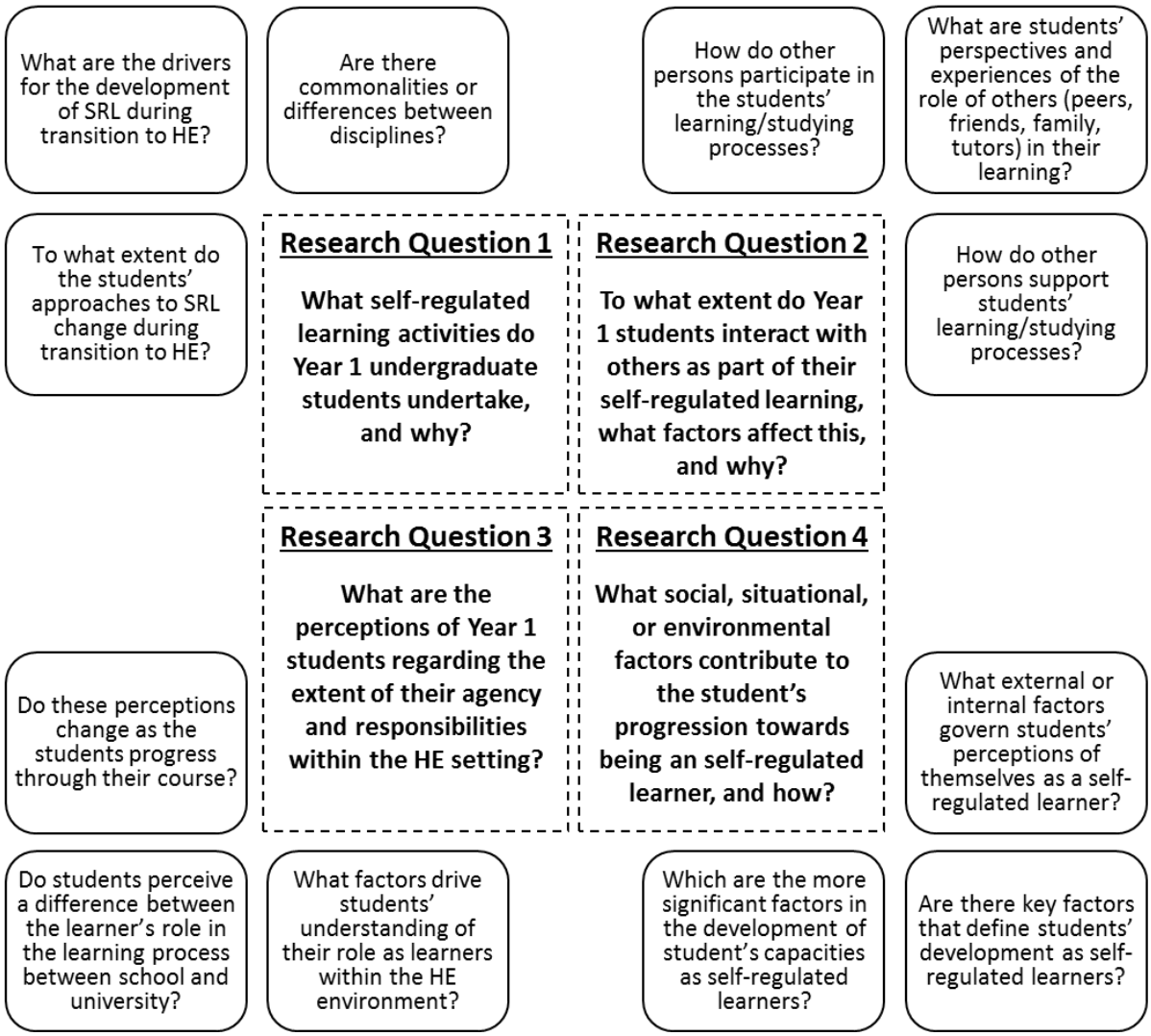

Figure 3.1 – Summary of the research questions and subsidiary questions. Each research question (dotted-line boxes) had three sub-questions aligned to it, each of which was aims to develop the lines of questioning in that general area. The sub-questions helped guide the development of the interview schedule, and follow-up questions.

3.2 Ontological and Epistemological frameworks

3.2.1 Research paradigm and ontological framework

As a researcher, I align strongly with the Interpretive paradigm of Burrell and Morgan (1979), in which the researcher aims to explain social behaviour from the individuals' viewpoint, identifying how those individuals make sense of their position within an externally-defined society, or social world. Fundamental to this paradigm is the notion that the lived realities of sentient individuals are created by their own experiences of their social and physical environment, and how they perceive and react to those experiences (Morrison, 2012a). I strongly believe that even objectively real constructs may be interpreted differently by individuals, based on their own experiences. For example, words, which can be codified to have specific meanings; or organisations which may have a clearly-defined and widely-accepted role, may be perceived differently by different individuals, based on their own experiences or world views (Brinkmann & Kvale, 2015; Charmaz, 2014). An umbrella, for example, may be perceived as having a different primary role for an individual raised in a country where rain is common (i.e. it is used to prevent yourself becoming wet in the rain), compared to an individual raised in a desert environment (where it would primarily be used as a sun-shade). Even though there is clearly objective reality around us (for example, there is a widely-shared concept of an institution such as a University), the subtle interpretations of that reality will differ between individuals (a first year student's perception of the University will differ from that of an experienced professor). The approach taken in this research was therefore aligned with this interpretivist paradigm.

The design of the methodology for this research is therefore based on a nominalist, constructivist ontology - that reality is highly personal and contextualised, and cannot be codified within a single, externally-applied truth (Robson, 2002). Each individual in a study of social behaviour will have their own perceptions of reality and their own personal truths. Therefore, an individual's lived experience of the transition to University will be subject to their own personal aspirations, their perceptions of the role of a university education, and their expectations of university life. Similarly, the experience of developing SRL is fundamentally personal, and unique to each learner, and each individual will perceive the same approach in different ways.

3.2.2 Epistemological Framework

Aligning with the nominalist ontology underlying this research, the epistemological framework for the study is strongly interpretivist and non-foundationalist. An interpretivist epistemology posits that knowledge is based on experiences and perceptions, and so is subject to the bespoke experiences of the individual in constructing that knowledge (Cohen, Manion, & Morrison, 2011; Morrison, 2012b). A non-foundationalist epistemology embeds knowledge within the participants' own beliefs and

views, which do not necessarily align with observable truths or shared beliefs (Phillips, 1993). This epistemological framework impacts both the participants' own interpretations of the world around them, and also my observations as a researcher. An interpretivist epistemological framework positions my findings as interpretations of the activities being observed, rather than proofs of a theory or verifiable truths.

This epistemological position aligns closely to my own adherence to the situated nature of knowledge (Bruner, 1996), and sociocultural models of learning (see section 2.3), where knowledge is co-constructed in a social world. If an individual's learning is situated within their social and cultural environment, then each individual's perspective is highly personalised to their own experiences and how those experiences have shaped their perceptions (Brinkmann & Kvale, 2015). The data generated from recollections and reported actions of the participants are therefore, by definition, interpretations of those situations by those individuals. In turn, my own analysis of these recollections as a researcher is subject to my own interpretation of the participants' meanings. I will be placing emphasis on different aspects of their recollections, based on my own point of view and the research questions of the project. Such highly-personalised factors cannot be addressed within a positivist framework (the verification of a hypothesised truth or fact), as we are dealing with individuals' subjective views of the reality around them (Robson, 2002).

Individuals generate their own versions of reality, based on their own life history, interactions with their environment and people around them, and their interpretation of the meanings of those interactions (Dunne, Pryor, & Yates, 2005). Therefore, as students develop as individuals, each of them will construct their own perceptions and versions of what is real, or significant, within their own very personal context. Each student's 'learning journey' is therefore unique, and the product of a variety of interacting experiences, influences and personal choices, and the impact of each of these is highly dependent on the individual. It would not be ideal, therefore, to approach this research area from a positivist perspective. Likewise, my own interpretation of the participants' experiences cannot be entirely objective (Brinkmann & Kvale, 2015), as I am interpreting the meaning in their reported activities, a process which is intensely personal, no matter how much care is taken to be objective as a researcher. The choice of a qualitative study, analysed using Grounded Theory (Glaser & Strauss, 1967), was therefore informed by this interpretivist epistemology.

Given that this study is evaluating novice students' experiences of an established and well-defined educational institution, one could arguably adopt a 'Constructivist Realism' approach (Cupchik, 2001) to the methodology, which seeks to align positivist perceptions of established frameworks with constructivist observations of the students' subjective personal experiences. However, this study focuses more on understanding the participants' own experiences of their learning journey - and draw conclusions from these experiences - rather than aiming to place those experiences within an

established framework, to prove or disprove an existing hypothesis. However, this methodological approach was useful in determining the implications of this research for professional practice.

3.2.3 Rationale for qualitative research paradigm

In order to fully assess this highly subjective and nuanced experience, a qualitative research paradigm was deemed to be most appropriate (Silverman, 2011). In order to open a window into the rationales, insights and perspectives that shape the ongoing educational development of the participants, what is needed are deep, rich data from which nuances of perceptions, emotions, interactions and experiences could emerge (Saldana, 2016). Furthermore, as new perceptions build on older experiences, it was important to see how these perceptions changed over time with the same individuals. So, a longitudinal, rather than cross-sectional, design was adopted for the study. While a quantitative approach could have identified broad themes across a large cohort, the essential nuances of individual experiences necessary to understand the motivations and rationales for the participants' behaviours and choices would potentially have been obscured in a quantitative analysis (Hennink, Hutter, & Bailey, 2011).

Another key factor in the determination of the choice for an approach to study of individuals' personal experiences of learning development was the importance of being able to reveal the participants' own voices. Dunne et al. (2005) highlight the importance of enabling the nuance and context of the participants' experiences to add depth to the analysis. The impact of this use of personalised experiences is exemplified particularly in Charmaz's investigation of the lived experiences of patients with chronic, painful, and terminal illnesses (Charmaz, 1993). Indeed, the very title of Charmaz's book, 'Good days and bad days', emerged from the words of her research participants themselves, who emphasised the changing nature of their daily lives that the illnesses caused. A qualitative methodology would enable the study to investigate how the participants' own personalities, character traits, social interactions and personal experiences influenced their decision-making processes and how they determined which approaches were effective and which motivating factors had the greatest impacts. The relative impact of different factors would most likely be different between individuals, based on the personality, experience, confidence levels and independence of each person. Some of the influences on the student's choices of study approach, and approach to learning in general, would be intrinsic (such as self-determined approaches, methods adopted by observing others, or discovery through trial and error) and others extrinsic (such as advice and guidance from parents, teachers, siblings, friends and course mates). Indeed intrinsic factors may have been induced by extrinsic factors in the past, just as extrinsic factors may be more or less impactful, based on the individual's own intrinsic perceptions and biases. In order to unpack these characteristics and factors it was necessary to gain detailed responses from the participants.

A key focus for the study was that of identifying the rationales behind decision-making when developing study skills and SRL approaches. Therefore it was important to interrogate the drivers behind any choices made, and to encourage the participants to reveal their own conclusions and interpretations, as each would likely be different based on their own world view. This approach also fits with the overall ontological framework, as decisions are made based on one's own understanding of a situation. Sometimes the decisions made are ill-informed or unwise, but even so these are based on individual experiences, rather than a single shared perception of reality. Therefore an approach that identified the underlying assumptions behind the participants' reported views and actions was necessary, which led to the adoption of an open intensive interview process (Charmaz, 2014), using semi-structured interviews. Semi-structured interviews had a very loose pre-defined framework, and could be modified in content or order according to the flow of the interview discussion (Robson, 2002). By using this approach it would be possible to encourage the participants to voice their own opinions and ideas, and to take the discussion in the necessary direction to fully explain their perspectives. At the same time, the participants could be guided to discuss their perceptions in the areas required for the analysis, but not be guided artificially by the researcher. It was important for the researcher not to direct the discussion too strongly, and risk confirmation bias, with the participant saying what they thought the researcher wanted to hear.

An additional factor in the choice of this methodology was my own wish to develop my personal skills and experience in qualitative research and interviewing. As a trained quantitative researcher, it was important for me to experience a fully-qualitative study. The methodology was therefore chosen in part to address this professional development requirement.

3.3 Recruitment of Participants

3.3.1 Rationale for participant sample populations

As this was a qualitative methodology, large numbers of participants would neither be necessary, desirable, nor manageable (Brinkmann & Kvale, 2015; Morrison, 2012b). As the aim of the research methodology was to generate deep, rich data, the length, detail and overall quality of the interviews was more important than having a large number of participants (Charmaz, 2014). A sample that was representative of the typical UK student demographic (including such variable factors such as gender, native language, ethnicity, socioeconomic background, sexuality, attainment range, disability, type of school) would be necessary for a quantitative analysis, but these were too many factors to be able to accommodate within a sample size appropriate for qualitative analysis. Also, the potential number of variables between excessive numbers of participants in a qualitative analysis was likely to be more

than could be accommodated in the analytical process (Silverman, 2011), and so ensuring a comprehensive coverage of all demographics was rejected as a major consideration. Demographic balance would only become a factor if the number of volunteers for the study was excessive. Trying to accommodate for all variables to a representative sample for the population of potential participants was not in keeping with the rationale of the project, to focus on individuals' experiences.

It was decided to focus the variation in the sample population on only one broad differential: the potential difference between study approaches between disciplines. A comparison of the QAA benchmark statements for the sciences and humanities (for example, QAA, 2014a; QAA, 2014c) highlights that in a scientific discipline the overriding paradigm is on use of objective data derived from experimental analyses; in a humanities discipline the paradigm is more focused towards interpretation of existing materials and the development of argument. This difference in pedagogic focus would potentially be the most likely to elicit differences in study approaches and SRL in students. In addition there was a variation in contact time that was typical of either discipline, and therefore, by inference, the degree of independent study expected. For example, the average contact hours per week for year 1 and year 2 Physical Sciences students is almost twice the average for History students (Buckley, 2014). A science discipline will typically have a high lecture load with large class sizes, supported by laboratory-based contact time in Year 1; whereas humanities disciplines typically focus more on discursive seminars, with fewer lectures, and more emphasis on self-directed reading. The Physical Sciences in UK HE Institutions have three quarters the number of small (15 students or fewer) classes than Humanities subjects, but on average twice the number of classes between 16-50 students, and six times as many classes of over 50 students (Buckley, Soilemetzidis, & Hillman, 2015). The proportion of small group to large group teaching is therefore greater in the humanities, potentially leading to greater opportunities for collaboration and discussion.

3.3.2 Recruitment of participants

The Schools of Chemistry and History were chosen as target Schools to approach for permission to recruit volunteers for the study. Each of these Schools had a sizeable intake number into Year 1 to potentially enable the project to recruit a sufficient number of participants. Although 6 participants from each School would have been sufficient for the analysis, it was decided to aim to recruit approximately 9-10 individuals from each discipline, where possible. This number was intended to allow for potential withdrawal of participants over the course of the project, as there was no tangible incentive or imperative keeping the participants within the project.

Volunteers were recruited from the whole Year 1 student cohort of the target Schools. Directors of Learning and Teaching for those Schools were approached as Gatekeepers (Hennink et al., 2011) for

permission to recruit from their student cohorts, and provided with full information sheets outlining the study. Participants were recruited directly from Year 1 core module classes of each discipline during the first two teaching weeks of the autumn semester. Students were introduced to the project by my addressing the whole year cohort at the start of a lecture. Information sheets were circulated to potential participants prior to the class (see Appendix A3 for a copy). In order to provide informed consent of the participants (following BERA ethical guidelines, BERA, 2011), students were given a copy of the information sheet. each at the start of the lecture session, which had a 'expression of interest' form attached (see Appendix A4 for a copy), asking for limited background details (e.g. A-level subjects and grades, gender, age) from volunteers, which could help inform the choice of a balanced cohort of participants, if more than the required number volunteered. Volunteers were asked either to leave their completed forms in a box as they exited the lecture theatre, to return them by internal mail, or make contact *via* email to an address provided.

Selection criteria for participants (if volunteers numbered over 10 in either School) were outlined in the information sheet, and would be done on the basis of the data supplied in the expression of interest form, so that a balance of genders, ethnicities, ages and educational backgrounds (pre-university qualification types, levels of attainment in A-Level, or equivalent) could be achieved if possible. If the number of volunteers still exceeded the maximum number for the study, then names would randomly be drawn out of a hat.

The initial recruitment strategy did not yield appropriate numbers of participants for the long-term progress of the project to be robust. Only between half and a quarter of individuals who volunteered responded to subsequent attempts to arrange an initial interview. 8 students were recruited to interview from Chemistry, which was sufficient, but only 1 from History. The search was then broadened to Ancient History, which provided 3 more volunteers who arranged an interview. As this was still too small a number for the humanities group in the study, English Literature students were recruited as well. As attrition rates were so high in the other subject groups, all 25 volunteers were approached without following the planned selection process for large numbers. 12 English Literature students arranged interviews. Although this resulted in more humanities students than was ideal (and an overall interview group of 24 individuals) no further selection was undertaken, based on the assumption that some participants would withdraw after the first or second interviews.

In order to preserve anonymity, each participant was allocated a pseudonym (Brinkmann & Kvale, 2015). Although participants were offered the opportunity to select their own pseudonym, none opted to do so. Therefore, each participant was allocated an appropriate pseudonym. The pseudonyms were chosen to begin with a key letter depending on the participant group, to facilitate identification of the cohort of the participant in the analysis and discussion of the data: English Literature Students: Letters **A-L**; History Students: Letters **M-P**; Chemistry Students: Letters **Q-Z**.

3.3.3 Summary of participants

There were 24 participants in the initial interview cycle. Of these, 13 were female and 11 male. The genders, pre-university qualification, home environment, school type, and age at the outset of the study, as well as further pertinent details of the individual participants, are presented in Table 3.1.

All but 4 participants studied A-Levels as their pre-university qualification. Camille studied the French Baccalaureate, and Grace studied the International Baccalaureate. Raashid took the Indian TBSE in his home country, followed by a year studying an International Foundation Programme at a UK university. Zach took the USA High School APA Exams. Camille, Grace, Raashid and Zach were international students who had been educated to age 18 overseas.

The gender balance in the participants was not equal, with more women in the History and English groups, and more men in the Chemistry group, although this did reflect (although not in a direct proportion) the gender bias within the undergraduate population for those subjects at the target institution. Ursula's withdrawal from the university meant that the participants from Chemistry were exclusively male from the second interview cycle onwards. All participants had come to university directly after school, with the exception of Lucy, who had come to University 5 years after leaving school.

In interview cycle 2 there were 19 participants, as David, Isla, Orla, and Quentin did not respond, and Ursula had left the University. For interview cycle 3 there were 15 participants, as Hannah did not respond, and Emily, Lucy and Will were unavailable. The interviews of those who did not complete the full cycle of three interviews were still included in the analysis, as they contained valuable data about the experience of the participants at each individual time point in which they were included. The interviews of those participants who only interviewed once or twice were still valid data for a cross-sectional consideration of the data. The interviews lasted between 23 and 78 minutes, the exact duration of each interview is shown on Table 3.1. The average interview length for each cycle was 37'20", 36'40" and 42'20" respectively. The interviews were of sufficient length to obtain deep, rich data for later coding analysis.

Table 3.1. Summary of participants (following 3 pages). Participation in each interview cycle is identified by recording the duration of each interview. Age of each participant at the start of the study is indicated. Where known, the domestic environment of the participants and their school environment prior to coming to university is included. The last qualification attempted prior to university is shown for each participant. Any specific notes that have potential significance to the analysis are included.

Table 3.1

Discipline	Participation in Interview Cycle			Pseudonym	Gender	Age	Family Background	Previous Educational Institution	Pre-University Qualification	Notes
	1	2	3							
English Literature	40”15’	37’07”	47’24”	**Andrew**	Male	18	Lived with parents; two older siblings attended university but withdrew.	Large School with small 6th Form attached	A-Level	First generation university student
	29’30”	26’06”	40’02”	**Bryn**	Male	18	Lived with parents; small rural Welsh-speaking community	Small rural school with Welsh-medium teaching	A-Level	School was primarily Welsh-medium, but studied Biology in English. Welsh is native language.
	50’02”	37’24”	37.02”	**Camille**	Female	19	Boarding School at first, then lived in apartment with sister during term time	French School, studied in optional International Section	French Baccalaureate	Joint Honours students (English and Journalism). Taught through medium of English in school. Friend from school studying Journalism. First language is French.
	38’52”			**David**	Male	18	Lived with parents	Small state school with 6th Form	A-Level	Disruption to History teaching due to staff absence at school
	40’25”	23’14”		**Emily**	Female	19	Lived with parents and two siblings. Strong faith tradition in family.	Medium-sized school in local town. Small classes during A-Level	A-Level	Older brother studying the same degree course (2 years senior). Commuted to/from school with parents (shop owners)
	24’41”	42’02”	36’11”	**Ffion**	Female	19	Lives with parents and daughter	FE College (no local 6th form)	A-Level	First generation University student. Single mother of a daughter, born during final year of A-Levels. Lived at home during Year 1
	47’22”	42’06”	49’10”	**Grace**	Female	19	Lived with parents	Small International School n Germany	International Baccalaureate	Overseas student; grew up in international community in Germany

English Literature	41’10”	41’17”		**Hannah**	Female	18	Lived with parents and two siblings	CofE Academy, followed by Catholic 6th Form College	A-Level	Wasn’t interested in English until late at school; strong interest in creative arts.
	34’36”			**Isla**	Female	18	Lived with parents	Large 6th Form College (2000 students)	A-Level	
	35’16”	34’14”	39’41”	**Jane**	Female	19	Lived with parents	Medium-sized state school with 6th Form	A-Level	Studied a year of another degree at another University prior to starting the English course
	42’59”	55’13”	77’37”	**Kate**	Female	18	Lived with parents and younger sister	Large comprehensive, good reputation	A-Level	First generation university student. Teaching at school was poor, required extensive SRL
	52’20”	29’59”		**Lucy**	Female	23	Lived with parents; parents were teachers	Boarding school, brief attendance at Drama course (6 months)	A-Level	Left school at 18, worked in a bar for 4 years after school
History	48’05”	39’12”	53’21”	**Mary**	Female	18	Lived with parents; parents are both teachers; two younger siblings	Medium-sized state school followed by 6th Form College for A-Level	A-Level	Joint Honours student: Ancient History and Religious Studies. Undertook an Extended Project Qualification (EPQ). Strongly religious household.
	28’35”	29’00”	34’12”	**Nick**	Male	18	Lived with parents	6th Form College	A-Level	Joint Honours Student: Ancient History and Archaeology. Lived at home during Year 1.
	33’32”			**Orla**	Female	19	Lived with mother from age 16, after parental divorce and moved to new area.	Large state school with 6th Form, then Smaller FE College for repeat year.	A-Level	Moved to large school late, after small private school environment. Suffered mental health issues at school, repeated a year at school
	36’04”	35’31”	38’56”	**Penny**	Female	19	Lived with parents and one sister	Medium-sized school with 6th Form; high pressure school environment	A-Level	Strong determination to become a teacher after University. Took a gap-year prior to University.

Chemistry	23’13”			**Quentin**	Male	20	Lived with parents on rural smallholding	Medium-sized comprehensive state school with 6th Form	A-Level	Late diagnosis of severe dyslexia at school. Limited support for dyslexia during A-Levels
	30’06”	36’22”	60’46”	**Raashid**	Male	20	Lived with parents in middle-east, prior to coming to UK	Overseas school, followed by International Foundation Programme at UK University	Indian TBSE, International Foundation Programme	First generation university student. Studied International Foundation Programme at another University prior to starting degree course. English is second language.
	36’20”	42’42”	54’29”	**Simon**	Male	21	Lived with parents and identical twin brother	Good-reputation (competitive entry) comprehensive school followed by FE College	A-Level	Identical twin studying at a different university, but maintain daily contact
	32’45”	35’10”	48’53”	**Tony**	Male	18	Lived with parents and younger brother	Large state Upper School with 6th Form (c.2000 pupils)	A-Level	First generation university student
	33’14”			**Ursula**	Female	18	No information	Small rural secondary school	A-Level	Disliked school experience prior to A-Level. Withdrew from University before second interview cycle
	30’45”	23’02”	27’10”	**Vic**	Male	18	Lived with parents	Small private school with 6th Form	A-Level	Initial interest in drama as a career
	29’06”	40’24”		**Will**	Male	20	Lived with parents	Medium sized state school with 6th Form	A-Level	Took a year out working and travelling in SE Asia and Australia before University
	33’51”	42’46”	43’51”	**Zach**	Male	18	Lived with parents	Large International School in Germany	American High School Diploma (APA Exams)	Born in USA, moved between Germany and USA during school years. Studied A-Levels in Germany.

3.4 Analytical framework for the data

3.4.1 Adoption of Constructivist Grounded Theory as an analytical methodology

The research questions for this study aimed to identify the approaches and experiences that the participants' found to be most effective or significant in their journey as learners. As a higher education professional, and a former student myself, a key consideration of the project was to minimise the extent to which the project data generation was limited by my own preconceived notions. Although it was important to use prior knowledge to inform the rationale of the project, there was a clear risk of missing novel perspectives from the participants if the analytical methodology was a positivist one. There would potentially be unexpected features that would remain unexplored or un-revealed. The methodology chosen, therefore, needed to be strongly interpretivist, avoiding a positivist approach of testing pre-formed hypotheses.

Grounded Theory (GTh; Glaser & Strauss, 1967) was identified as being the most appropriate analytical framework for the requirements of this project, due to its strong potential for identifying key themes that emerged from the data, rather than being aligned to previously-formed theories or hypotheses. The central dogma of GTh is that the theory is generated from the data (Glaser & Strauss, 1967; Strauss & Corbin, 1990), rather than the research being approached with clearly-defined positivist hypotheses to test. Although the precise nature of the theory generated in GTh, what emerges from the data, and the extent to which the approach is positivistic or otherwise (for example, are there hidden truths within the data, to be revealed from the analysis?) are highly-contested issues (Böhm, 2004; Charmaz, 2014; Kelle, 2005). The choice of which paradigm within GTh to follow was important to consider during the initial planning stage of the research.

After the initial publication of their work in 1967, the originators of GTh, Glaser and Strauss each developed the theory along contrasting paradigms. Glaser's approach to GTh specifically avoids the use of GTh in devising explanations or determining models from the data, preferring to focus instead on 'coding families' (Glaser, 1978). Coding families aim to support and heighten theoretical sensitivity, the ability of the researcher to identify relevant data (Glaser, 1978; Glaser & Strauss, 1967), but not to impose external structures on the data.

The other philosophy of GTh, developed by Strauss and Corbin (1990), was less positivistic, and does facilitate the development of theories and models from the data, thus enabling the researcher to use the data to theorise explanations to research questions. Key tenets of Strauss and Corbin's philosophy of GTh (Strauss and Corbin, 1990), included the following: Data could be used for generation of hypotheses as well as verification of them; theories emerge from the data that may challenge preconceived assumptions; constant comparison of data leads to robustness of interpretations; categories of description can be generated from the coding of data; theoretical sensitivity is required

to remain open to possible emergent themes from the data. Strauss and Corbin strongly advocated that the researcher distances themselves from the data, and approaches the analysis from a position of 'theoretical agnosticism' (Strauss and Corbin, 1990). Thus, the researcher can approach the analysis without any preconceived assumptions from the previous research literature. Strauss and Corbin's approach also posited that there are verifiable 'truths' that should emerge out of the data, and the coding approach aims to reveal these truths.

Charmaz's refinement of Strauss and Corbin's method, 'Constructivist Grounded Theory' (CGTh; Charmaz, 2014) differed in two aspects that were important to my study. Charmaz refuted the concept of theoretical agnosticism, acknowledging that it is a relative impossibility to approach a subject without the influence of any biases or preconceptions. Charmaz advises the researcher to recognise their prior knowledge and involvement with the subject matter of the research and actively bring these to the analytical process. Charmaz's approach actively involves the co-construction of data between the participant and the researcher, and the co-construction of meaning between the data and the researcher during the analysis. By integrating their own experiences into their analysis, the researcher gains a richer interpretation of the data generated. Charmaz also emphasises that the findings of the coding – as a consequence of being co-constructed by the researcher and participant – are highly interpretivist, and cannot reveal a single set of 'truths' hidden within the data. The main critique of CGTh has come from Glaser himself (Glaser, 2002), who argues that GTh cannot be constructivist in nature, and that Charmaz's approach lacks the objectivity that his own form of GTh provides. Glaser argues that objectivity can still be maintained alongside recognising the impact of the researcher, stating that "researcher impact on data is just one more variable to consider whenever it emerges as relevant". However, I myself would challenge this position, and suggest that, in an interview situation, the researcher impacts on *all* of the data generated, and this impact cannot be narrowed down to only a few instances in each interview. Charmaz's paradigm therefore aligned best with my own epistemic framework as a researcher.

Charmaz's analytical framework aligned best with all aspects of the aims and research questions of the project, as well as the situation of myself as a practitioner as well as a researcher. So CGTh was adopted as the main analytical framework for the study. In addition, key factors of Glaser and Strauss's approaches made them less-desirable. It was important not to confine the analysis to pre-determined classes of codes, such as would be the case using Glaser's coding families. Additionally, as a higher education professional, and a former/current student myself, it was unrealistic to assume that I could be effectively naïve to theories behind the research, as Strauss and Corbin espoused. Indeed the converse was true, and as someone experienced in the subject area being researcher, I would be able to interpret the reported experiences of the participants through a lens of practical experience and a career of observing students developing as learners.

Charmaz's approach also aligned closely to my own ontological and epistemological positions. I expected that my research could be used to develop theory and models, but I did not anticipate being able to reveal clear truths from the data, as each individual participant's experiences would be fundamentally situated within their own highly-subjective personal experiences, as well as my own. Charmaz's approach of framing the analysis within the perspectives of my own professional experience aligned closely to the expectations of my own research paradigm.

3.4.2 Situational Analysis of social interactions

One of the key findings from the pilot study and the coding of the first cycle of interviews (see below), was that the development of SRL strategies was heavily dependent upon social interactions and external factors. An analytical approach was therefore adopted to enable me to interrogate the data with a particular focus towards social interactions between individuals, communities of practice and institutional practices. Situational Analysis (SA) (Clarke, 2003; 2005; Clarke, Friese & Washburn, 2013), was identified as a theoretical approach which could assist in highlighting these interactions.

SA is a development of GTh, which aims particularly to highlight social interactions and influences (e.g. influences of peers, teachers, family members, educational institutions, support networks; Clarke, 2013; Clarke et al., 2013) as they emerge from the coding. In her writings, Clarke is clear to emphasise that SA is a heuristic device, designed to assist in theorising and generating avenues of analysis, rather than as an alternative analytical framework in itself (Clarke, 2005). Therefore, SA was adopted as an additional tool to the CGTh analysis, along with standard coding and theoretical sampling techniques. The combined use of CGTh and SA to study student transition to university does not appear to have been adopted before, so this was a novel approach to the study of this subject.

3.5 Data Generation

3.5.1 Data generation, aligned to a Constructivist Grounded Theory framework

Constructivist Grounded Theory advocates co-construction of the data through a discursive relationship between the researcher and the participant. This framework of co-construction informed the design of the data generation methodology as well as the iterative nature of the analysis and subsequent cycles of data generation.

It is important, at this point, to provide a rationale for my use of the term data *generation* rather than data *collection*, as it is fundamental to the philosophy behind the methodology of this study. The concept of data construction is fundamental to the GTh and CGTh frameworks (Charmaz, 2014).

Charmaz's emphasis on the importance of embracing the notion of the researcher and participant co-constructing the data, is fundamental to the methodology of this study. In order to reveal the rich data required for this analysis, and to sustain the study over a long period of repeated interactions with the participants, it was important to develop a relationship with the participants, so that they would be comfortable sharing personal experiences in an honest and frank manner. Similarly, the iterative nature of the CGTh approach meant that interactions with the participants needed to be fluid and not highly-scripted, with questions being developed on an *ad hoc* basis to adapt to the direction in which the participants chose to describe their experiences. It was important therefore to approach the participants with a mindset that we would explore their experiences together, rather than one whereby the participants were a pre-formed resource that could be harvested and collected by observation or interrogation of specific questions. Similarly, the role of the researcher in developing and uncovering the data needed to be remembered (and indeed embraced) during the analytical process. Therefore it was again important to use a terminology which embraced and codified this co-construction of data. Therefore, it is important to conceptualise the process as being one of mutual data generation, rather than collection.

In GTh (and especially CGTh), emerging theories are part of an iterative approach to data generation. The data, as they are analysed, shape the ongoing research process. This approach required an ongoing process of cycles of data generation, followed by analysis which was then used to inform the next stage of data generation. This iterative approach enabled the data generation process itself, as well as the analysis, to take the research down paths that were not necessarily initially intended, but which were clearly of significance to the participants and the participants' stories.

3.5.2 Data generation using Open Intensive Interviews

Since the aims identified in the research questions were to investigate individual experiences and perceptions, individual interviews were adopted for data generation as it was felt that this approach would best facilitate the development of deep rich data about individual experiences, perceptions, and emotions. As the focus for the research was the individual study activities outside of formal teaching, an observational approach was not possible. Group-based interview approaches, such as focus groups, were dismissed as data sources, as they would not have provided the level of individualistic experience necessary to address the research questions. Documentary analyses (such as reflective diaries) were considered as a data generation methodology. However, this approach, whilst being 'of the moment' and situated within the everyday experience of the participant, would not have enabled the researcher to delve deeper into the rationale behind the decisions made by participants. Conversely, the use of periodic interviews would enable the participants to reflect on their experiences as a whole, and situate individual events within a broader context.

The interview methodology adopted was that of open intensive interviews (Charmaz, 2014). In the open intensive interviews, the semi-structured interview schedule was designed around open discursive questions that aimed to encourage the interviewee to provide detailed and expansive answers with only limited input from the researcher. Just as important as what is said by participants in their interviews, is what is *not* said, and so it was important that the participants should not be guided too strongly in their answers. The open questions also allowed for the use of additional *ad hoc* prompts and follow-up questions to the participant, based on their evolving narrative. This open approach facilitated the detailed exploration of areas of the participant's ongoing and developing story that seemed to be important to that individual's situation, as reported in the moment (Charmaz, 2014). It was important to devise interview questions that did not constrain the interviewee's responses. Questions were phrased as an invitation to discuss key areas (e.g. "I wonder if you could tell me about…", or "Could you give an example of…") to encourage open discussion and a relaxed dialogue.

The schedule for each interview consisted of 8-10 questions (see Appendix A1). Each interview was designed to last between 30-60 minutes. The interview questions were designed to prompt discussion that would be pertinent to the research questions. The aim was to ensure (as much as possible) that whilst keeping the 'open questioning' format, there was a strong chance the participants would address the subjects on which the research questions focused. Where possible the open question format of "Can you tell me about…?" was adopted, but in two cases a more direct question was asked, although each of these two questions were designed to elicit a discursive response from the participant. The language in the interview questions was piloted through the Pilot Study, and the phrasing of the questions (but not the substantive content) was modified as required, based on experience of any ambiguity revealed in the pilot interviews. The interview process was an iterative one, the analysis of each cycle of interviews informing the next, in accordance with the ideals of GTh and CGTh (Charmaz, 2014; Strauss & Corbin, 1990). Each interview was recorded, with the permission of the participant, and then transcribed into a written document and anonymised prior to analysis.

3.5.4 The timing of interviews

The decision was made to interview participants at three points within a single academic year. There were two reasons for adopting this pattern: Firstly, it was important to allow each participant time to find their own path and gain experiences in-between data generation points. To sample too frequently might restrict the impact of substantial changes that came from experiences during the academic year. Conversely, it would have been too blunt an analysis simply to have two points of contact at the beginning and end of the academic year, as this would omit the opportunity for the

participant to reflect on their progress as they developed. The second consideration was purely logistical, that the time taken to undertake and transcribe each set of interviews, and to analyse them substantially prior to the next set of interviews, prohibited interviews being closer than two or three months apart (Saldana, 2016). The use of three sampling points was therefore adopted as a compromise that could accommodate all of these considerations appropriately.

The timing of the interviews placed the first interview as close to the beginning of the academic year as possible, in order to gain insights into the participants' experiences whilst they were still naïve to the university experience, and whilst their memories of their experiences in school or college were still fresh. The focus for the first interview set was as a retrospective review of their studying activities at school or college, and an investigation of their expectations of their university degree. The third sample point was set at the end of the academic year, after the conclusion of teaching and examinations, in order to facilitate a full reflection on the participants' experience during the year as a whole. The mid-point interview cycle was more difficult to position, as the discussion with students around the mid-point of the year would potentially be influenced either by participants' preparation for, or experience of, mid-year examinations. It was decided to hold the second cycle of interviews immediately after the examination period (in the first two weeks of the spring semester), before the participants had received their exam results. This timing would enable the interviews to focus on reflection of the previous semester and the exams themselves, without the participants' perspectives being impacted by exam results that they found either encouraging or upsetting. The question set for the second and third interviews therefore reflected the significance of the examinations, but also aimed to high

3.6 Ethical Considerations

The interviews were designed and conducted following the BERA ethical guidelines for interviews (BERA, 2011), and as summarised by Brinkmann and Kvale (2015) and Busher and James (2012). Ethical approval was obtained from the Research Ethics Committee of the Institute of Education, University of Reading, prior to commencement of the pilot study. Table 3.1 summarises the key ethical implications, and how they were addressed. More details of the mitgations undertaken to address potential ethical issues are detailed in Appendix A5. All participants completed a Consent Form (see Appendix A6 for a blank copy) prior to the start of the first interview.

Table 3.1 – Summary of ethical considerations and approaches taken to address these

Ethical Consideration	Reference	Approaches taken to address ethical issues
Informed Consent	BERA (2011); Brinkmann and Kvale, (2015)	Provision of information sheet prior to recruitment, repeated prior to interview. Potential participants informed of the potential benefits of participation. Participants briefed prior to the interview. Participants asked to sign consent forms prior to the first interview. Participants asked to provide consent for the interviews to be recorded.
Confidentiality and Anonymity	BERA (2011); Brinkmann and Kvale, (2015)	Audio recordings of interviews kept secure, until anonymised transcript was created. Files kept in a password-secured folder, identified by pseudonym only. Transcripts identified by pseudonym. All names of persons or places in transcript anonymised. Participants informed of data handling and information security procedures.
Avoidance of coercion and power differential	Dunne et al. (2005); Morrison (2012b)	Participants for the main study were recruited from other Schools to avoid power differential possible from my role as a manager of learning & teaching in my home School.
Opportunity to withdraw from study	BERA (2011);	Opportunities for withdrawal from the study made clear to participants. Participants informed that they could decline to answer, or withdraw from the study at any time without a reason. No participant withdrew from the study during an interview. Only Ursula withdrew formally from the study, due to her leaving the university. Other participants in the first or second interview cycles withdrew *de facto* by not responding to requests for an interview. Interviews were held in neutral, pre-agreed venue (typically a classroom in their home School building) to facilitate participants leaving if they wished to withdraw. Participation in the study was not conditional to any reciprocal or financial arrangement.
Improvement of situation investigated	BERA (2011); Brinkmann and Kvale, (2015)	**It was emphasised** to prospective participants, that the reflective process endemic to interviews would potentially be beneficial when considering their study approaches. 15 of the participants noted informally, after the final interview, that the process had been beneficial to their ongoing development, due to the potential to discuss their practice with another person.

Ethical Consideration	Reference	Approaches taken to address ethical issues
Avoidance of harm to participants	BERA (2011); Brinkmann and Kvale, (2015)	Although there was no danger of physical harm, there was a possibility of a participant becoming upset by a question, or something they had revealed. It was made clear to participants during the pre-interview briefing that they did not have to answer the questions asked, and merely needed to decline to answer (and were told that no further explanation would be asked for their motive). No participant declined to answer a question. Participants were also told in the pre-interview briefing that they could review the transcript of the interview by contacting me, and/or redact information after the interview if they wished. No participant requested this. In cases where I had a duty of care to provide advice as a member of staff of the institution, this was undertaken after the interview had concluded and the recording had been stopped. This only happened with two participants, once after interview cycle 2, and once after interview cycle 3

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3.7 The Pilot Study

3.7.1 Pilot study

Prior to the commencement of the main cycle of data generation, the first round of interview questions was piloted with a pilot study group of interviewees. The subsequent cycles of interview questions could not be piloted due to the short timescale between analysis of previous data, devising the new questions, and scheduling the next cycle of iinterviews. In addition, many of the questions in interview cycles 2 and 3 asked the participants to reflect on their experiences during the previous semesters, and so this would have required a pilot group to have been reconstituted at each interview point, which was not possible logistically. The pilot participants were 6 students recruited from my own academic School. The students recruited were finishing their first year of studies on a Bioscience degree (due to the time in the academic year at which this point of the study preparation was reached). As the Pilot Study students were from my own academic School, where I am a prominent member of staff involved in teaching and the management of students, there was a potential conflict for ethics as well as validity of the students' responses. It was therefore important to emphasise to the participants (in the pre-interview briefing) that this study was unrelated to their degree course, that anything they revealed would be treated in strictest confidence, and that their comments would not impact upon them or their studies in any way.

The piloting of the interviews, and subsequent analysis, identified a series of key findings, which informed the later main cycle of data generation. Examples of these include the complexity of learning strategies, the importance of peers and family members in the learning activities, and the observation that participants each developed their own approach to their learning, which suited their individual needs. The pilot study also provided insight into the interview approach. Firstly, the pilot proved that the question set and open-intensive-interview process generated sufficient deep rich data for a robust analysis, and the duration of the interviews was between 35 and 75 minutes. Secondly, the question order needed revising, with questions about social interactions being better later in the interview (it made sense to question the involvement of others in studying after the participants had discussed their own study strategies in full). It was clear that the order of questions needed to be flexible, so that the questions could follow the flow of the conversation (Brinkmann & Kvale, 2015). It was observed that participants typically focused their answers on study approaches used when studying for exams, rather than course-based materials. This was possibly due to the pilot participants' own recent experience of exams and exam revision. However, since the pilot participants also focused very much on their A-Level exam revision strategies, prompts were prepared for the main interviews, to ensure that participants also discussed their learning outside of examination revision.

Most significant was the finding that social interactions seemed to be highly significant to the development of learners and their SRL activities. Therefore I decided that there would need to be a further layer of analysis applied to the main interviews to identify social influences and interactions. This last observation gave rise to the inclusion of a 'situational analysis' approach (Clarke, 2003; 2005; Clarke et al., 2013) in the analytical cycle (see section 3.9).

3.8 Data Analysis - Coding the Data

3.8.1 Coding of transcripts

The coding approach was undertaken in accordance with the process advised by Charmaz (2014), in order to provide data that would be of use for a constructivist grounded theory analytical approach. The coding was undertaken in four stages (see below for more details): *(i)* Line-by-line coding; *(ii)* incident-with-incident coding; *(iii)* focused coding; and *(iv)* axial coding. Figure 3.2 illustrates the coding process for the project, and Appendices B1-B4 present examples of the coding process for each stage. After each interview, initial coding (Charmaz, 2014) was undertaken (line-by-line coding, followed by incident-with-incident coding), and then this was followed by a round of focused coding. Line-by-line coding was undertaken on hardcopies of the text; the remaining three coding approaches were coded using NVivo 11 coding software (Watling, James, & Briggs, 2012). After the initial coding

and first cycle of focused coding, the data were analysed and the concepts emerging from the data were used to develop the interview schedule for the subsequent round of interviews.

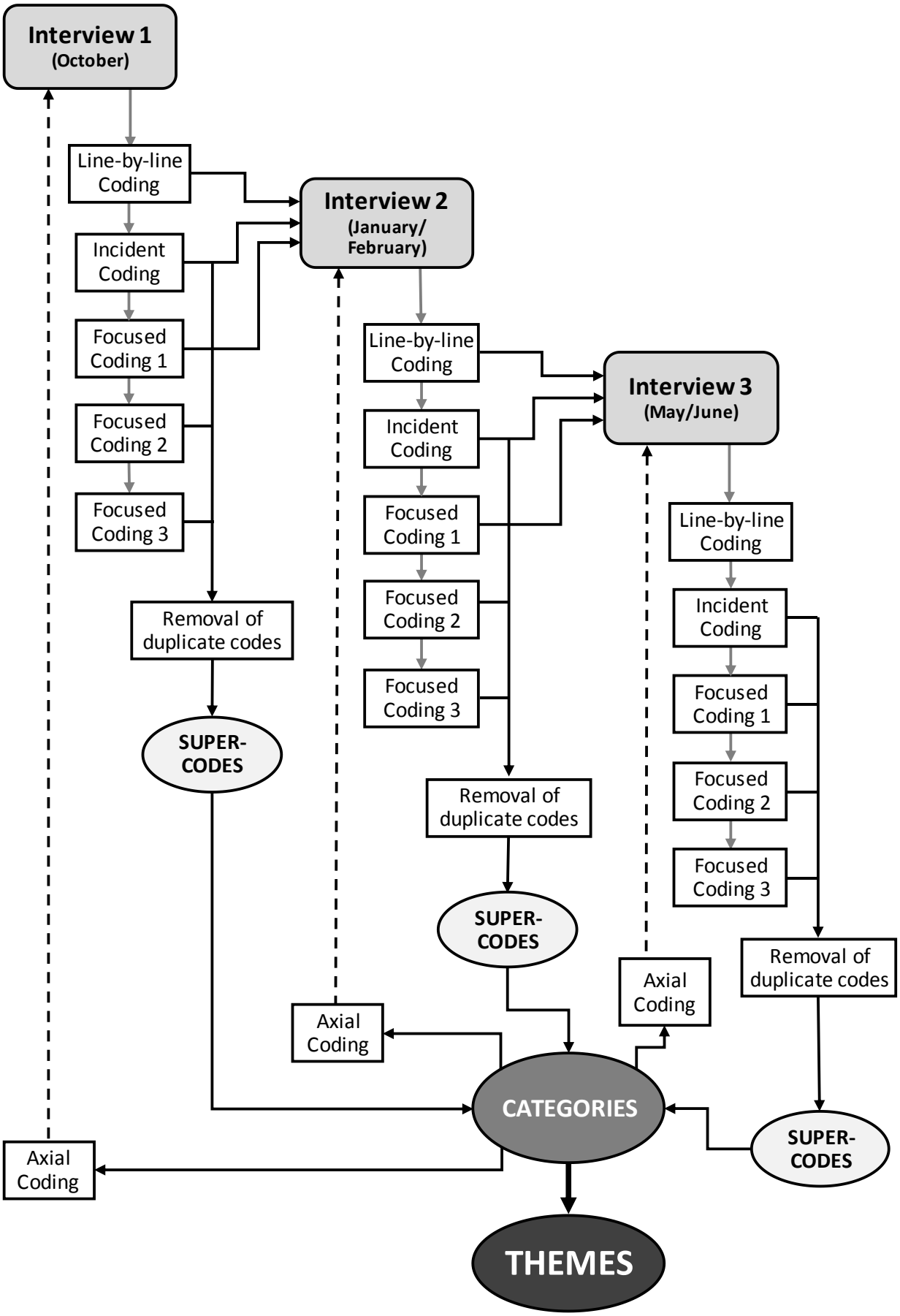
Following the approach of Grounded Theory (Strauss & Corbin, 1990; Charmaz, 2014), in all rounds except the axial coding cycle, the data were coded without reference to pre-selected criteria, categories, or hypotheses. This approach was deliberate, and designed to enable codes to emerge from the data themselves, and not be constrained by any of my own pre-conceived notions as the researcher. As Charmaz (2014) emphasises, it is not possible to be truly naïve during the coding process, and so it was important to recognise my part in the analytical process. All coding was undertaken by myself, but to minimise any potential error, omissions, or bias, Focused Coding was replicated 2-4 times independently, to provide opportunity to identify any less-obvious codes and achieve saturation (see section 3.8.2 for more detail). Furthermore, regular discussion with my supervisors about the codes emerging from the data supported validity in the findings.

(i) **Line-by-line coding.** The approach of line-by-line coding (Charmaz, 2014) aimed to identify codes in an objective manner, in order to gain an overall understanding of the data as a whole. For an example of line-by-line coding and a summary of the outcomes, see Appendix B1. Each transcript was printed with the text narrowed to approximately half the width of the page, then a code was applied to each line. By determining an arbitrary quantity of the text on which to apply a code, the approach gained an element of objectivity in this initial coding approach. Line-by-line coding was useful as a first-pass analysis, as it reduced the subjectivity of the coding process and allowed a broad overview of the data as a whole. The line-by-line coding approach facilitated a critical view of the data, to identify the important themes in the data, whilst simultaneously highlighting and examining one's own assumptions of the participants' responses.

Figure 3.2 – Overview of the coding process (overleaf)

The coding was in iterative process involving cycles of interviews, analysis of the data, which then informed the design of subsequent interviews. The three interview cycles are identified by light grey-shaded boxes. Coding cycles are shown by white boxes. Arrows indicate the sequence order of the activities. The data from Interview 1 were coded using line-by-line, incident-with-incident, and focused coding. These analyses were then used to determine the interview schedule for Interview 2. Further focused coding of the data set from Interview 1, followed by consolidation of the codes from all cycles of the coding (to remove duplicate codes) and then further consolidated into super-codes. This same process was repeated for Interviews 2 and 3. The super-codes were then consolidated into categories, and the categories grouped into themes. Once categories had been determined, each category was then used to further code the transcript data (shown by the dotted line) for that category.

Figure 3.2


Interview 1
(October)
Line-by-line Coding
Incident Coding
Focused Coding 1
Focused Coding 2
Focused Coding 3
Removal of duplicate codes
SUPER-CODES
Interview 2
(January/ February)
Line-by-line Coding
Incident Coding
Focused Coding 1
Focused Coding 2
Focused Coding 3
Removal of duplicate codes
SUPER-CODES
Interview 3
(May/June)
Line-by-line Coding
Incident Coding
Focused Coding 1
Focused Coding 2
Focused Coding 3
Removal of duplicate codes
SUPER-CODES
Axial Coding
Axial Coding
Axial Coding
CATEGORIES
THEMES

(ii) **Incident-with-incident coding.** The second round of coding was an 'incident-with-incident' coding (Charmaz, 2014) approach of the full transcript, which aimed to compare and contrast the key incidents or common factors that emerged from the line-by-line coding. These factors included events and actions, interactions with others, or approaches adopted by the participants (see Appendix B2 for an example). For example, the use of colour in study activities was noted for each participant, across an interview cycle. This approach was used to investigate common features, strategies, social drivers which impacted upon the participant's development of SRL, and the positive and negative factors or experiences which shaped their perceptions.

(iii) **Focused coding.** The third round of coding involved 'focused coding' of the full transcript (Charmaz, 2014), identifying key phrases, comments, experiences, perceptions, or actions, that seemed significant to the participant (see Appendix B3 for an example). This focused coding approach was undertaken *de novo*, a minimum of twice per transcript, and where necessary three times, in order to enhance objectivity and move towards saturation of the data (see section 3.8.2). Ideally, a second and/or third party would have been recruited to independently co-code the data, before discussing the core themes, but this was not practicable, and so the coding cycles were undertaken *de novo,* with no direct reference to previous cycles, at disparate time points (at least 3 weeks apart) by myself as the sole researcher. Once it was apparent that saturation had been achieved, the codes from all three focused coding rounds were consolidated to remove duplicates, and then clustered into 'super-codes' (see section 4.2.2 and Figure 4.1 for an example). These super-codes were then used to develop categories. A short summary of each super-category is included in Appendix C.

(iv) **Axial coding of categories.** The final round of coding was an axial coding approach (Strauss and Corbin, 1990; Charmaz, 2014) to re-code the data based on the categories that arose from the first three cycles of coding (see Appendix B4 for an example). This approach aimed to identify codes whilst viewing the data through a more-focused lens of a single category, one at a time. Each interview was coded for the single category, by highlighting all sections of text that could potentially be of relevance to that category. An example of text identified from a cycle of Axial Coding is included in Appendix A4. This final coding process was undertaken once all three rounds of interviews had been completed, transcribed, and subjected to the first three coding approaches.

3.8.2 Reaching saturation of the data

Focused coding of each individual transcript was repeated for each replicate coding cycle. Transcripts were coded as a collection in each coding cycle, so that code identities could be shared between transcripts within a cycle of coding. A new NVivo file was utilised for each cycle of focused coding, with new 'nodes' (codes) being named each time. Although this potentially replicated effort, the use

of novel files was important as it aimed to ensure that each coding cycle was original, and not simply re-populating previously defined codes in a previous cycle. When it was clear that no substantively original codes were being identified from the transcript, then it was assumed that sufficient saturation of the data had been reached.

Focused coding was repeated a second, and in most cases a third, time until no new codes were emerging from the data and therefore saturation of the data had been achieved. At each stage of coding, the collection of codes were consolidated to remove any codes which were obvious duplicates (i.e. identical concepts, but with subtly different names, see section 4.2.2 and Figure 4.1 for an example). Due to the high volume of codes from the extensive amount of data, the consolidated codes were again combined into a set of 'super-codes' for easier interpretation. These Super-codes were in turn consolidated into a smaller number of categories (Saldana, 2016). The categories were initially used to inform the development, then used for the final axial coding and to determine core themes arising from the study.

3.8.3 Memoing

A fundamental activity undertaken throughout all coding activities was the use of Memoing (Glaser and Strauss, 1967; Strauss and Corbin, 1990; Charmaz, 2014; Saldana, 2016). The writing of memos was essential to the analytical process, enabling concepts and important themes to be recorded as the coding process was taking place. Memos were written during the transcription of the interviews, and at each coding stage, and during the consolidation of codes and development of super-codes and categories. Memos were written by hand, as this was found to be the most efficient and least-invasive method of making notes whilst coding. An example of memos taken for the coding of one transcript is included in Appendix B3 (Figure B3.2). The consolidation of ideas enabled by the Memoing process facilitated the analysis of the data several times – during each round of coding, and when the coded text was being analysed. Memoing provided an opportunity to develop ideas during the coding.

3.8.4 Theoretical Sampling

Theoretical sampling (i.e. the examining of theories arising from the coding by comparing those outcomes to new data), was applied, where possible, through the iterative nature of the study having three time points for interviews. At each of the second and third interview cycles, key concepts that had arisen at previous stages were interrogated further, so that a wider picture of that concept could be developed. For example, the importance of identity emerged during interview cycle 1, and this was then further investigated during the second and last interview cycles. Similarly, the importance of colour to the studying process that was cited by many participants in their first interview, was

further discussed in later interview cycles. The impact of this theoretical sampling was evidenced by the reproducibility of the super-codes between interview cycles (see chapter 4). The commonality of super-codes between interviews was indicative of repeated revisiting of similar concepts throughout.

3.9 Data Analysis using Situational Analysis

The process of SA involves the development of three 'maps' of interactions (Clarke, 2005):
(i) Situational Maps, *(ii)* Social Worlds/Arenas maps, and *(iii)* Positional Maps.

3.9.1 Situational Mapping

Situational Maps aim to highlight the interactions between actors (individuals or collective groups) and actants (organisations, structures, systems and discourses) in a given situation (Clarke, 2005). The development of the situational map involved noting down, from the data, any potential actors/actants that appeared to impact upon (or be impacted upon) by the participants. This messy map was effectively a 'brainstorming' approach for the coding process. The features from the messy map were then transferred into an 'ordered map' (see Figure D1.1 in Appendix D1) which aligned these factors under a range of categories. In the construction of the ordered map Clarke advises that the researcher add any elements that they believe are missing from the data, which is in-keeping with the ethos of CGTh, in which the researcher is an integral part of the analytical process. The messy map could then be reconstituted and for each actor/actant lines were drawn to connect it with all other components of the map (see Appendix D1, Figures D1.2). The aim was to identify the key nexus points around which the majority of social interactions associate. The messy map was replicated numerous times, and each factor used as a focal point for a cycle of analysis. Lines were drawn between the factor and any other factor which influenced it (in a positive or negative manner). This mapping was undertaken for each element of the reconstituted messy map. For ease of use, those factors which did not impact strongly on the student, or impact reproducibly on other factors, were removed from the final map produced. The strength/significance of the impact, and whether it was a positive or negative impact, was identified on the final composite map (shown in Figure 6.4).

3.9.2 Mapping of Social Worlds/Arenas

Social Worlds/Arenas Maps illustrate the interactions between collective groups (Clarke, 2005). Social worlds are groups of actors, key nonhuman elements, collective social networks and 'sites of action', communities in which individuals act together. Examples of Social Worlds might include a degree course cohort, colleagues in a work environment, a social group of friends, or members of a religious

congregation. The Social Arena is a wider, more conceptual area of practice or endeavour, which contains numerous different social worlds, such as the university sector, or the educational sector. The aim of the Social Worlds/Arenas mapping process was to identify the ways in which these social worlds interacted, and the relationships between these social groupings and other social collectives and communities. The data were interrogated to identify (a) Social worlds of importance to the participants, and how (if at all) they interacted with each other; (b) Social Arenas in which the social worlds interacted, and the degree to which they were embedded; (c) interactions between each of these factors. Interactions were represented by interlinked spheres or ellipses, with overlaps showing the degree of interaction between social worlds (for examples, see Figures 6.5, 7.2, 7.3 and 7.4).

3.9.3 Positional Mapping

Positional Maps aim to identify links, differences and commonalities between the stated, and *un*stated, positions taken by individuals within the data (Clarke, 2005). The positional maps aimed to place personal positions that emerged from the interviews, relative to two axes of factors; for example, academic competence vs. degree of independence. By interrogating the data for discourses related to these two contrasting factors, one is able to populate the different sectors of the resulting graph between the two axes with different stated/unstated norms for collective groups who exemplify the varied levels of either axis. Positional Maps were useful is devising diagnostic charts for person 'types' that were representative of the different dimensions of the characteristics represented on the axes. In this way they are somewhat similar to a more-nuanced version of Strauss and Corbin's (1999) analytical 'dimensions'. Example Positional Maps are shown in Figures 8.3, 8.5 and 8.6.

3.10 Representations of the data, and validity of conclusions

3.10.1 Presentation of the data within the thesis

Data within the thesis will be presented either in the form of tables/charts of comparisons or by quotations. Tables and charts are compiled from generalisations within the responses from individual participants, either from a single time point or across all of their interviews (specified within the table/figure legend). Quotations are included to provide examples of rationales or experiences provided by the participants, or to display a concept most clearly or vividly. Maps resulting from the Situational Analysis are presented as diagrammatic derivations of the formats advised by Clarke (2005), and are devised from a broad comparison of individual participants across the study through incident-with-incident coding.

3.10.2 Internal validity

There were two potential concerns regarding internal validity of the data. Firstly that the interview questions might have been leading participants to provide specific answers. This concern was addressed by the use of open questions, asking participants to describe or explain experiences, rather than asking leading questions directed towards a specific answer. Secondly, the robustness of the coding approach needed to be considered, as coding is – by its very nature – subjective. This second concern was addressed by repeated coding of the data, followed by comparison of the codes revealed. This constant comparison approach, using four complementary coding approaches (line-by-line, incident-with-incident, focused and axial coding), was undertaken independently of previous data at each stage. The saturation of the data suggests that this analysis has been conducted as objectively as possible for a qualitative study and a single analyst. The codes, categories and themes that emerged from the data should therefore be considered robust and valid. However, there will, by default, be a level of subjectivity involved, as this is a constructivist analytical approach, and therefore my own experiences as a professional in the field being studied are an integral part of the analytical framework.

3.10.3 Reliability

A principal concern from an interview-based analysis is the reliability of the data generated. In particular, where questions are being asked regarding the efficacy of educational performance, there may be a potential for participants to elaborate upon their reports, so as to present an idealised face to the researcher. Charmaz (2014) addresses this concern by emphasising that even elaborated accounts provide important data about the participants. The questions were phrased to avoid this temptation, so that the participants were encouraged to reflect upon their experiences, and there was no value judgement placed upon their responses, other than those they vocalised themselves. There was therefore no reason to suspect that the reports of experiences vocalised by the participants were unreliable. However, this potential bias needs to be considered when evaluating the data. In this matter, the CGTh approach of actively positioning the researcher in the data analysis is useful, as it would be likely that I could identify reports of experiences that were elaborated or unsound, by virtue of my years of experience with students. No such observations were noted by me, and I was confident that the reported experiences were genuine.

3.10.4 Generalisability

This study identifies some key elements that are central to how SRL develops during the transition to university. These factors are likely to be generalisable across a range of other individual experiences, and so the insights gained here should be widely generalisable. However, as a qualitative study of 24 individuals at a single university, there are limitations to which the findings in this study can be applied to a general population of HE learners, as one cannot guarantee that all learners in HE across the globe have experienced the same events. However, generalising fully for a broad and diverse student population as a whole is, in itself, an impossibility, as each individual learner will have had their own unique experiences. These data do represent a snapshot of experience for a particular group of students, and as such has impact as a detailed case study when considering the diverse experiences of students as a whole. The findings of this study should therefore be possible to extrapolate from, if they are also moderated by the localised demographics of the population to which the data are being compared.

3.11 Conclusion

The qualitative methodology adopted enabled the study to investigate reports of the lived experience of the participants. The following chapter will highlight the outcomes from the coding approaches in broad terms. Then chapters 5-8 will each focus on one of the four major themes that arose from the coding. The implications of these themes are then discussed in Chapter 9, along with a discussion of the implications for practice of the findings.

Chapter 4

CONSTRUCTING CODES, SUPER-CODES, CATEGORIES AND THEMES FROM THE DATA

4.0 Context to the analysis

The cycles of initial coding (line-by-line and incident-with-incident coding) and focused coding represented an iterative process of mining the data, which aimed to facilitate emergence of categories and themes, in order to inform subsequent cycles of interviews. The situated analysis approach was combined with the CGTh to refine the insights that emerged from the codes, and facilitated the generation of theory. This chapter summarises emergent categories and themes that arose from the coding, as well as reflection on the impact of using situational analysis. This chapter will illustrate the contribution made by each stage of the coding, and describe how these led to the generation of multiple codes, which were consolidated into super-codes, which were consolidated in turn into categories, and then into the four themes. These themes are investigated in depth in chapters 5-8.

4.2 Findings from coding of interview data

4.2.1 Reaching saturation in the coding

Line-by-line coding: Line-by-line coding was useful as a heuristic device to gain a broad understanding of the data. Not all of the codes identified in the line-by-line coding were useful, and codes were very numerous and diverse (a result of forcibly assigning a code to each half-line of text). Line-by-line codes were useful in determining interview schedules for subsequent interview cycles, and for cross-referencing against outcomes of subsequent focused coding. For example the significance of negative self image emerged from the line-by-line coding. Negative self-references repeatedly emerged as codes in this process. A summary of the groups of codes that emerged from the line-by-line coding is included in B1.1.

Incident-with-incident coding: The incident-with-incident coding approach was an essential feature of the analytical process. As this study related primarily to the lived experiences of the participants, the process of comparison of the experiences of different participants, or the same participant over time, was an important activity. By focusing on an individual event, activity, or experience, incident-with-incident coding facilitated comparisons of data fragments and quotes for all the participants

together. Incident-with-incident coding facilitated comparisons such as the use of colour (detailed in section 5.2.2) and the engagement in peer-supported learning (detailed in section 6.2.3-4). An example of codes, and a summary of the concepts addressed using incident-with-incident coding are included in Appendix B2.

Focused coding: Transcripts were coded by highlighting words, phrases or sentences that appeared to be either of significance to the participant, related to emergent themes from the line-by-line coding, or significant to the research questions. Each code was given a descriptor using NVivo 11 software, and descriptors were used commonly for all transcripts in each cycle of focused coding. Each cycle of coding the transcripts were coded fresh, with new descriptors being created for each new code. An example of focused coding for the same section of text shown in Appendix B1, is shown in Appendix B3.

After each cycle of focused coding, the codes for each transcript were compared to those of the previous coding cycle and the themes that arose from line-by-line and incident-with-incident coding. When it was clear that no substantively original codes were being identified from a transcript, then it was assumed that sufficient saturation of the data had been reached. In the majority of cases this was after three cycles of focused coding, however in the case of Vic (interviews 1, 2 and 3), Quentin (Interview 1), Ursula (Interview 1) and Emily (Interview 2) only two cycles of coding were required. For Kate and Grace, each of their interviews required four cycles of focused coding, due to the complexity and length of their interview responses. The outcomes of the focused coding are discussed below, and form the basis for the majority of the discussion in chapters 5-8.

4.2.2 Consolidation of codes into super-codes, categories, and themes

Codes developed across the cycles of coding were consolidated to remove duplicates (due to the high volume of data, and gaps between coding cycles, some codes were either repeated unknowingly, or were subtle variants of the same core theme). After the removal of duplicate codes from across the replicate cycles of coding, the focused coding of the interview data produced 257, 230, and 194 individual codes for interview cycles 1, 2 and 3 respectively. Although the majority of these codes were shared between interview cycles, this number of codes was too great to be of use in any meaningful analysis of the data. The codes were therefore each combined with cognate codes into a series of ‘super-codes’. An example of the process that led to the formation of super-codes is illustrated in Appendix B5. Figure 4.1 shows the detailed make-up of one super-code (including duplicate codes). At this point of consolidating codes across the coding cycles, the opportunity was taken to standardise the names of the super-codes between the interview cycles, where appropriate.

Figure 4.1

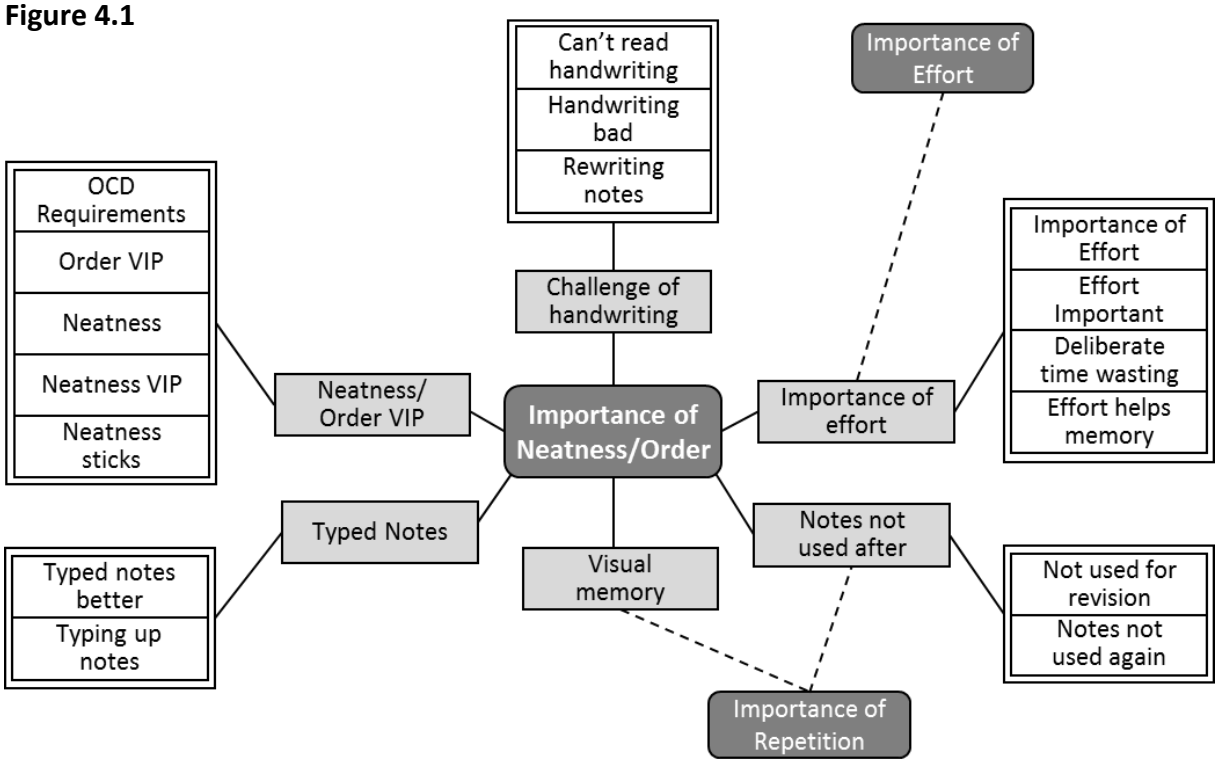


Figure 4.1 – Example of consolidating codes into a 'super-code' - Duplicated codes (white boxes) are combined together into a single composite code (light grey box). Composite codes are combined into a 'Super-code' (dark grey box). Some codes are also featured in other super-codes (identified by dotted lines). This super-code, 'Importance of Neatness/Order', is part of the '*Importance of Effort*' Category, which in turn is part of the '*Personal Learning Strategies*' Theme (see Figure 4.2).

A final total of 55 super-codes was created. These super-codes were then combined into 15 categories, which in turn were grouped into four themes. The categories comprising each theme are shown in figure 4.2. The distributions of the super-codes, and their alignment with the categories and themes, are shown in figures 5.1, 6.1, 7.1, and 8.1, in each subsequent chapter. As can be seen in figure 4.2, the four themes were each comprised of 3-5 categories. The super-codes that comprise one of these categories ('*Importance of Effort*') are shown as an example, which includes the super-code 'Importance of Neatness' illustrated in Figure 4.1. Each of the categories reflected complementary dimensions of the cognate theme. In order to ensure that the analysis had reached saturation of the data, a round of axial coding was undertaken for each category. There was a small number of new participant comments identified in the axial coding which could be allocated to existing codes. However, there were no new codes that emerged from the axial coding that had not already been identified in the previous rounds of focused coding. The lack of any substantially novel codes suggested that the previous coding had been effective at reaching saturation of the data.

Figure 4.2

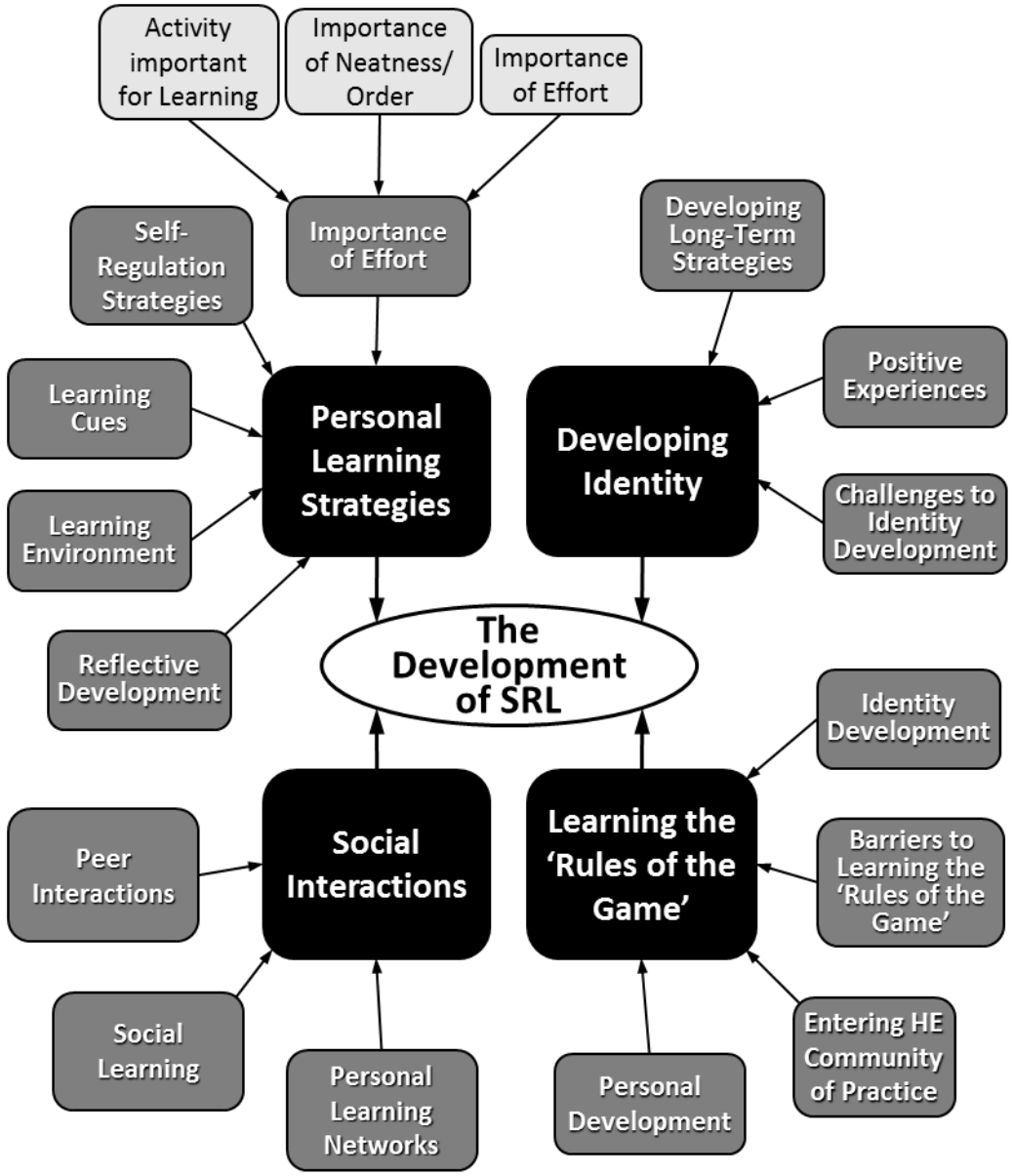


Figure 4.2 – Summary of super-codes aligned with categories and themes. The Categories (dark grey boxes) that emerged from the CGTh analysis are illustrated surrounding, and linked with arrows to, one of the four emergent Themes (black boxes). The super-codes (light grey boxes) that form one category, '*Importance of Effort*', are included as an example; for more detail of the super-codes that comprise each category, see Figures 5.1, 6.1, 7.1 and 8.1.

4.3 Emergent Themes from focused coding of data

4.3.1 Key findings of the identified Themes

The 55 super-codes were combined into 15 categories, which were combined into 4 themes. Each theme will be discussed in chapters 5-8 however the fundamental aspects of them were as follows:

The first theme, '**Developing Study Approaches**' focused around the learning strategies that the participants described. This theme identified strategies that worked effectively for the participants, and the categories comprising the theme focused on different aspects of these personal learning strategies: the importance of effort; visual cues to learning; the importance of the study environment; the role of reflection in developing learning strategies; and strategies for self-regulation. The analysis of these categories suggested insights into the way in which participants developed and refined their personal learning strategies.

The second theme, '**Social Interactions**' addressed the impact of others on the participants' social and academic development. The categories within this theme highlighted the impact of social learning, interactions with peers, and PLN development. The analysis of these categories, combined with the methodology of situational mapping of the data, revealed the nature and extent of the role of other people in the participants self-regulated learning activities.

The third theme, '**Learning the Rules of the Game**' was an emergent theme from the data, and not one that was necessarily expected to be a major factor prior to the analysis. The categories within this theme focused on the development of personal skills and competencies, the process of enculturation within the HE community, and the barriers to enculturation within the discipline. Through the use of social worlds/arenas mapping, the interactions and overlap between different groups (social worlds) was highlighted.

The fourth theme, '**Developing Identity**', clearly illustrated the potential of CGTh as an analytical tool, as the concept of identity development was not something explicitly built into the initial aims or research questions. Instead, this theme emerged as a significant factor from the analysis of the pilot interviews and interview cycle 1. Questions related to identity were then included in subsequent interview cycles. The categories that emerged from the data focused on the process of developing an identity, the challenges therein, the positive experiences that impact upon identity, and the development of longer-term goals and strategies. The use of positional Mapping - combined with the outputs of the incident-with-incident coding and focused coding - was particularly beneficial to the analysis within this theme. Positional maps enabled a comparison of stated perceptions and behaviours of the participants relative to different criteria (such as perceived academic ability, confidence, or investment in the subject).

4.4 Using Situational Analysis as an analytical tool - Insights from the combined use of Constructivist Grounded Theory and Situational Analysis

The Situational Analysis maps were extremely useful in developing theory from the coded data, and played an integral part in the development of categories and themes. Situational analysis was used to enhance theoretical sensitivity to the data, and provided an effective tool-kit for analysing the data and developing theory from the data. Situational Analysis was highly complementary to CGTh, and the two analytical approaches were used in parallel so that coded data was used to construct the various maps, and the maps then fed back into the consolidation of the codes and super-codes into categories and themes.. As Situational Analysis is firmly embedded within GTh as a methodology (Clarke, 2003, 2005; Clarke et al., 2013), the revelation of this complementarity is unsurprising. However, it was notable that the three types of maps used within situated analysis were each differentially suited to different themes. For example, Situational maps were highly effective in revealing the complexity of social interactions support learning (theme 2, chapter 6). Social worlds/Arenas maps were highly effective in mapping the interactions of larger groups and communities, and revealing how the participants fitted into these (theme 3, chapter 7). Finally, positional maps were ideally suited for highlighting characteristics related to personal identity (theme 4, chapter 8). The considerable power of combining CGTh and SA within an analytical framework was a major and novel methodological finding of this research, and this finding is discussed in chapter 9.

4.5 Conclusions

The four themes that arose from the coding are each discussed in turn in chapters 5-8. In Chapters 6-8 the co-ordinated use of CGTh and SA provided useful insights into the social nature of SRL in the participants. These chapters highlight that SRL is more collaborative in nature than previous models have suggested. This finding leads towards a discussion of this new perspective on SRL in Chapter 9, which proposes a reinterpretation of SRL as ‘Student-Mediated Learning”.

Chapter 5

IDENTIFYING AND REFINING WHAT WORKS: THE DEVELOPMENT OF 'PERSONAL LEARNING STRATEGIES'

5.0 Introduction and context to the analysis

The key aim of this aspect of the study was to address Research Question 1: 'W*hat self-regulated learning activities do Year 1 undergraduate students undertake, and why?'.* As a direct response to questions to highlight strategies that participants used for their studying, several codes emerged from the data focused on the strategies used by participants during their studying and revision. There were subtle differences between each individual, but also there were elements that were common to most SRL approaches adopted. These approaches, learned primarily through trial-and-error, suggest that the participants typically showed key traits of effective self-regulation. The adoption and development of these 'Personal Learning Strategies' (PLS) will also be discussed, using one particular PLS as a case study. The implications for the development of SRL during the pedagogy-andragogy transition of the way in which participants adopted a PLS will be discussed.

5.1 Overview of the super-codes and categories

The super-codes aligned with the theme of 'personal learning strategies' (see figure 5.1) each focus on either the type of study approaches adopted, or the rationale for their adoption. The super-codes focused into five categories. The first three categories focused around learning strategies themselves, which involved either (i) some form of additional effort (neatness, repetition, or creation of a learning resource); (ii) the visual cue to learning (for example the use of images, colour, or mind maps); or (iii) the physical learning environment in which the participants preferred to study. The final two categories focused on the logistical approaches to studying. The first category highlighted the reflective nature of participants' understanding of their own learning strategies. The remaining category highlighting the extent to which these strategies were self-regulated. Overall, the coding revealed that the participants were highly self-regulated in their learning, and had considerable amounts of awareness of the benefits, or otherwise, of the PLSs they chose to adopt.

Figure 5.1

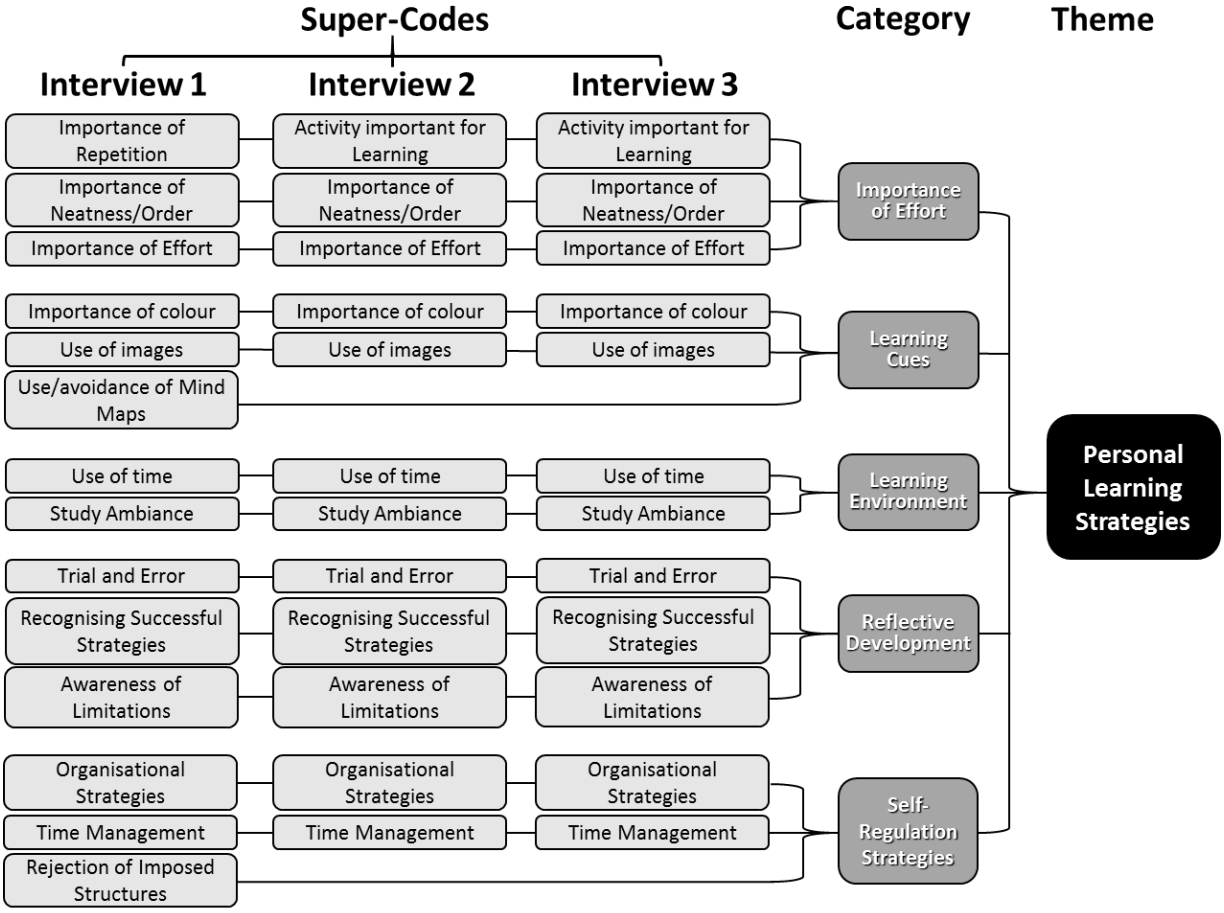


Figure 5.1 – Summary of the super-codes and categories the 'Personal Learning Strategies' theme. Identification of the super-codes determined from the CGTh analysis of each interview cycle, showing the categories into which they were consolidated. Super-codes (light grey boxes) are aligned with cognate Categories (dark grey boxes), which are combined to make the Theme. Lines show clustering of super-codes into categories, and categories into the theme.

5.2 Personal learning strategies

5.2.1 Summary of personal learning strategies

The study strategies adopted by the participants, although having many commonalities, were highly bespoke to each individual, and so could be considered 'Personal' learning strategies. The coding highlighted several common strategies and their impact on SRL. Table 5.1 summarises these common strategies. However, it in order to illustrate the extent to which the PLSs were developed through self-regulation, one PLS will be discussed as a case study in more depth. The use of colour in note-making and revision provides a rich example of a PLS that had both commonalities, but also considerable levels of personal preference. So, the use of colour in studying and revision will be presented as a case study to demonstrate the factors associated with the development of a PLS.

Table 5.1 - Summary of Personal Learning Strategies commonly adopted by participants. For each Personal Learning Strategy there is a summary of the key aspects of the approach.

Personal Learning Strategy	Summary
Effort has a positive impact on learning	Effort placed into the production of notes, or revision media was seen to be important. Even if the notes were never viewed further, the effort of producing them was seen as worthwhile. This approach was often modified or revised in response to workload issues.
Neatness has a positive impact on learning	Several participants found that neatness of study notes was important to their retaining (and especially visualising) information.
Use, and significance of, the physical learning space	The physical space around the participant was important, and part of the learning experience. Use of posters, post-it notes and whiteboards were common in surrounding the individual with information. These were less common at University.
Repetition of actions	Repeated performance of an activity was frequently seen as beneficial to its becoming embedded within the memory.
Visual summaries of information	Mind-maps and flashcards were commonly-used approached for reinforcing memory and defining concepts. Colour was often significant in these approaches.
Use of colour to reinforce information or themes	Colour was used extensively, and in varying ways, to reinforce core concepts or signify specific themes.
Teaching Others	Explaining or teaching others was very common. Explaining a concept to another reinforced concepts, and required good levels of understanding.

5.2.2 Example Personal Learning Strategy: Use of colour in study activities

The use of colour in the writing of both procedural notes and revision materials was extremely common, both in science and humanities students. There was sufficiently wide mention of colour to warrant its own super-code in the analysis. However, the role of colour varied between individuals, from having very specific meanings (such as individual colours being ascribed to specific themes, concepts or categories) to colour simply being used to highlight items of note.

Figure 5.2 summarises the outcomes of instant-with-incident coding of the use of colour by the participants. Only two participants (Quentin and Nick) avoided the use of colour. There were no clearly distinctive trends in the behaviours of participants from different disciplines, and there was a roughly equivalent distribution of participants from different disciplines in each sector of the table. It was noticeable that the only users of varied shades of the same colour were English Literature students, though the same size is too small to draw firm conclusions from this. There was a correlation between the complexity of the use of colour and the range of colours used. The more specific or

---

Figure 5.2

Range of colours used					
	Varied shades of each colour			Hannah	Jane
	Many colours *(wide range of coloured pens)*		Raashid Vic	Andrew Emily Grace Isla Mary Penny Simon Ursula	Ffion
	Very limited colour set *(e.g. red, blue, & green pens, or fluorescent highlighters)*		Bryn Camille Kate Will	David Tony	
	Black & White	Quentin Nick	Lucy Orla Zach		
		No use made	***Highlighting information of note***	***Highlighting key themes or subjects***	***Highlighting emotions or traits***
		Use of colour			

Figure 5.2 – The relationship between the purpose of use and the complexity of the colour palette. Participants are placed according to their preferred use (if any) of colour in note-making. To help highlight any potential disciplinary differences, the participant names are coloured blue (English Literature), green (History) or red (Chemistry).

nuanced the requirement for colour, the more shades of colour were required. When colours were used in a non-specific manner, such as to highlight words of importance, rather than themes or subject areas, a wider range of colours was used. In some cases (Lucy, Orla and Zach), participants highlighted important words or phrases by drawing a box around them, but not using colour to do so. For these individuals, the emphasis of the drawn box was sufficient to mark that word or phrase as significant, without necessarily needing a particular colour.

The use of colour also differed in a practical sense, with some using colour to highlight or underline key words, others to draw a box around a key word, section, or page, and others preferring to write in the relevant colour. In some cases different coloured paper was used, or post-it-notes, or coloured folders. Again, this was a highly-personal preference. The common theme was to make information more memorable by adding a visual cue. Vic adopted this approach after a positive experience trying the strategy. This approach of adopting a strategy based on trial-and-error was common.

> I always used to write up my notes in normal blue ink, and then I saw someone use highlighters, and so I said, "Oh, I'll use highlighters!". And then I remembered things much better. And pictures, they were initially just a doodle in the corners, and then I found I'd be able to read notes which had doodles more than ones that didn't, and so I try to put that into the actual notes.
>
> Vic (Interview 1)

Raashid also stumbled across the use of colour in remembering chemical equations and reactions, using a whiteboard and coloured pens to develop visual cues that were memorable.

> I decided to use a whiteboard to, and so I realised that it's much more helpful for me, especially in chemistry learning mechanisms, it was very easy to memorise using the whiteboard and different colours.
>
> Raashid (Interview 1)

Andrew's adoption of a strategy was based on advice from a school teacher, who suggested the use of colour in order to identify which learning outcomes or academic skills had been addressed in an essay. By colour coding the essay according to the purpose of the text being written, one could more-easily see if the required criteria had been met.

> … So, analysis would be in green, a quote would be in orange, and then segues would be grey, key titles would be blue, so, context red, and things like that and all the content areas would be filled in. So you could look and see if there was red, or blue … if you haven't done enough green, then you haven't done enough analysis. I don't highlight it so much anymore, because … after years of writing essays, I don't need it really.
>
> Andrew (Interview 3)

The significant point regarding Andrew's experience is that he eventually abandoned this strategy at University because he no longer needed that visual cue in order to be effective. Andrew's experience is typical, that he showed self-regulation by adopting a method which appeared to work for him after he had trialled it, but then abandoning it and he felt it was no longer necessary. This finding is discussed further in section 5.3 below.

The use of colour varied between the significance of the colour itself, and the use of the colour as either practical or conceptual. Figure 5.3 represents another interpretation of the incident-with-incident coding, showing the relationship between the personal significance of the colour used, and whether material highlighted was factual or conceptual in nature. For the most part, when individual words of importance were highlighted, the colour was of little importance, rather the use of a highlight was the key factor. For subjects and themes, skill types, or different chemical reactions, the participant usually ascribed a specific colour, but the exact colour was usually relatively arbitrary, and sometimes changed over time. Grace and Hannah, for example, would colour-code complete subject disciplines, while Mary would use colours to delineate categories of information, or for the same subject in her planner (figure 5.3).

> I have coloured notebooks for each subject, just to remind me what's what, but it's more just coloured within each individual subject. So I think I have to have a table of colours for each individual subject.
>
> Hannah (Interview 2)

> I use colours with themes. I have a code. So especially in history, I have one colour that dates go in, one colour that sources go in, one colour which is for evidence, or artefacts.
>
> Mary (Interview 3)

In the cases where colour was used extensively, the exact colour was important, usually consistent over a long period of time, and provided a conceptual link when using colour as a visual aid. The importance of colour in this context was as a visual cue to the memory. Participants recounted that when needing to recall information in an exam, the colour provided a tag that took the learner into a subject, or helped extract the relevant memory of a page or a diagram.

> It was, essentially, just a massive list, but it was colourful. So I had the colours of all the ions, so I could look at it and recognise that ion was that colour, immediately. And then, I have a quite a photographic memory, so I can just remember that poster on my exam then, and write it down.
>
> Ursula (Interview 1)

Figure 5.3

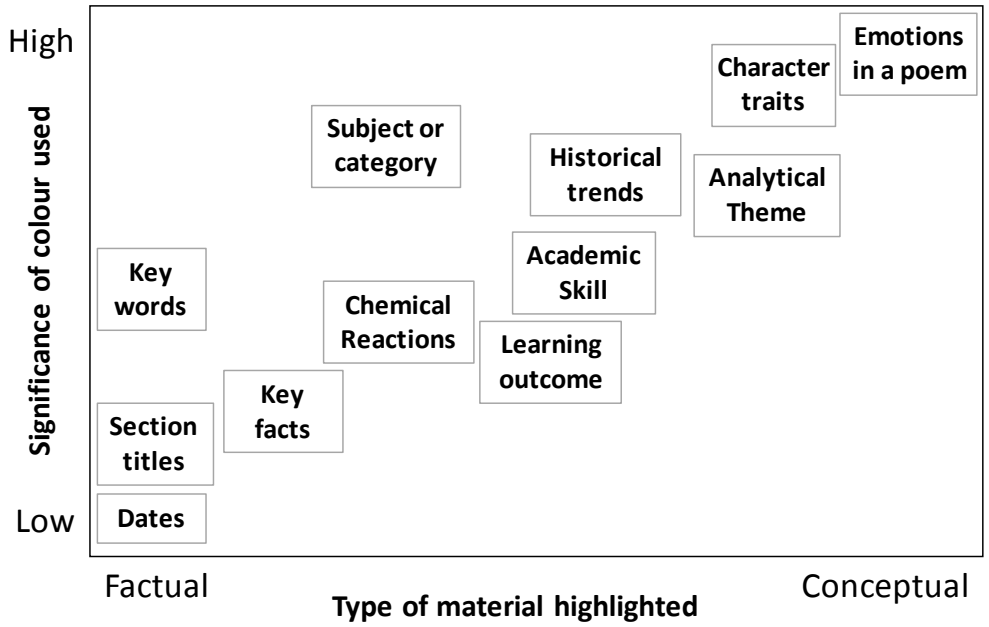


Figure 5.3 – The relationship between material highlighted and the significance of colour. A range of items identified by participants in the interviews is identified. The vertical-axis shows the range from the colour being purely functional (i.e. different from black), to being highly personalised to the learner (e.g. a specific colour for a theme or personality trait). The horizontal axis shows the range of types of material highlighted, from purely factual to conceptual or esoteric. There is a general correlation between the information being more conceptual, and the colour used to highlight being more significant.

The significance of the colour was highly individual to either the individual learner, the context of the subject, or both. Jane's use of colour was particularly interesting, as it was focused strongly around emotive themes within literature, such as the feel of a poem:

> When I am analysing a poem, I read the poem and then think, what colour is this poem? And then to me it will be, like, yellow. And then I'd have to annotate it in yellow, because it makes it stick in my head easier.
>
> Jane (Interview 1)

As the year progressed, Jane's use of colour became more practical, but retained the esoteric nature of her earlier approaches. Colour became associated with the traits or personalities of characters within her readings, to the extent that she used a wide array of pens of differing hues of colours.

> It's really annoying when two characters have the same colour, because they can't be the same, that's really annoying. So I have to have new pens, like a group of pens with different shades of green. Which is useful. It's not cool, it's very weird. … If they are

> evil they're more likely to be brown or red, or dark red. But if they're innocent, and the likely to be light purple or something.
>
> Jane (Interview 3)

By assigning colours a specific importance, Jane seemed to anthropomorphise the colour to have an emotive or implicit significance. Jane felt that anthropomorphising colour in this manner was somehow unusual (Jane referred to it as 'not cool' and 'weird'). This self-consciousness about the use of a visual cue highlights the extent to which this study approach is intensely personal and bespoke to the individual. Use of colour changed as the focus of the learning shifted from the requirement of remembering factual information during A-Level, to remembering or understanding broader concepts during degree-level study. For those that used colour extensively, the use of colour shifted to focus more around categories and themes than specific emotions or concepts.

Where colour was *not* used, the rationale was typically because it was either not something that helped create a visual tag for the learner. Alternatively, they felt that there were so many items of importance that to highlight them all would mean covering the whole page in highlights, causing confusion rather than acting as a visual aid. The latter reason was often associated with the participant explaining that they found identifying core information challenging, and so it would be impossible to highlight specific aspects of the material, as the information was all of fundamental interest. For example, Nick did not use colour in any systematic way, and preferred his notes to be quite plain, without even underlining or emphasis. Bryn would use capitals or underlining to highlight items of importance, but would not use colour in any structured way.

In all cases, the use of colour was an approach developed through reflecting on their own learning strategies, and what worked best for them. Frequently the approaches had been developed through trial and error, combined with their own personal preferences. These strategies were highly bespoke to each learner. Use of colour again emphasises that learning approaches in participants were already highly developed by the time they attended University, and developed through a reflexive process of trial and error.

5.3 Developing a Personal Learning Strategy is iterative and self-directed

Participants already had their own clearly-defined set of study strategies when they arrived at University. These strategies had developed through an iterative process of trial-and-error, usually with little or no direction from teachers and tutors.

> It was a bit of a trial and error thing, really. So, because I did use the brainstorms for a while and I did think they worked well for some things. But I think the flash cards do work best in

> the end. I had history last; so, I sort of found the flash cards then - and then they obviously worked better than the rest, because I did better in history than the other things.
>
> Ffion (Interview 1)

The rejection of imposed structures by teachers was very common. This rejection was based either on the participant trialling a strategy and finding it to be ineffective, or rejecting it out of hand as they felt that it did not with their own idealised learning approach. An example of such rejection of imposed structures mind maps were promoted almost universally to the participants by their teachers at school. Mind maps were rejected by the majority of participants as being ineffective to how they learned, or how they ordered information in their minds. This rejection based on personal experience preference also applies to other suggested strategies. Jane, for example, described her response to being forced to develop a revision timetable in the run-up to her A-Levels:

> I would like being taught stuff, but I like to do it on my own and work it out on my own, and do it my way. And when they're saying, no you should do it this way, that's not the way I do it. So when they're saying make a revision timetable, I just didn't do that. That's just not me. And we used to have PSHE sessions in school that were dedicated to making your revision timetable for your GCSEs, and I was, like, I'm not going to do it. So I'd do it, and might make it all pretty and colourful and stuff, and then I'd just ignore it, because I do not work like that, and I know that I don't, so it's pointless trying to force myself.
>
> Jane (Interview 1)

Jane had a clear idea about the manner in which she learned, so she felt that to have to adapt that to a format that was effective for other people was a significant limitation to learning. In all cases, where the teacher's guidance was heeded it was only after the participant had tested and evaluated the approach, and found that it worked for them. Examples of such guidance include, Orla's history teacher suggesting a reflective approach to studying history; Andrew's teacher suggesting a 'traffic light' system of prioritising which information needed focusing on not; or Nick's teacher suggesting to colour-code criterion-relevant aspects of his essays. Raashid and Zach, similarly, faced parental pressure on how they should manage their study time, approaches which did not match their own preferred approaches. They each faked compliance, whilst actually managing their studies in their own way. Raashid was frustrated that his parents did not appreciate that he had his own PLS.

> And my parents they tried to pressurise you. So they insisted that you sit down and study for three hours, but it's mostly me reading and reading but nothing is going in, it's just reading and reading. So, My parents thought I was playing around and just being lazy, but it was just that things weren't going in at all.
>
> Raashid (Interview 1)

Raashid had already developed a clear sense of what worked for him, and this was at odds with his parents' own 'folk pedagogies' (Bruner, 1996).

> …maybe if the way I was learning is wrong, but maybe I should change the way I learn, but I did never popped into my parents head. They just wanted me to work harder and harder, and I think that if I find it this way I'm studying is not really correct, I might change it in future. I think we should keep evolving.
>
> Raashid (Interview 1)

Even though there was individual variation in each PLS, each participant already had clear concepts of what strategies were effective for them, either before or during University study. For example, figure 5.4 shows the evolution of Raashid's use of his whiteboard, as reported in his three interviews. This highly self-regulated iterative process of developing study methodologies shows clearly that the skills of self-regulated learning were already well developed in these new Year 1 students. The study approaches developed through the course of Year 1 for most participants, with the major change occurring during the spring semester, between the second and third interviews. All participants had adopted learning strategies by the end of their Year 1 experience that they felt were effective and appropriate. Indeed, they typically saw the process of adapting their study and revision approaches as being a valuable part of their learning experience. The key outcome from this analysis, therefore, is that new Year 1 students do not require to be shown how to learn, but rather empowered to reflect on their learning approach and adapt it to the new requirements of their course.

Figure 5.4

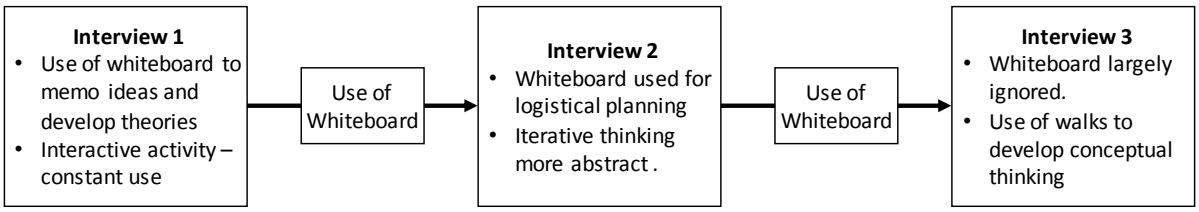


Figure 5.4 – Outcome of incident-with-incident coding of Raashid's use of visual cues in learning. The boxes each summarise Raashid's use of a whiteboard as part of his study strategies over the duration of the three interviews across the first year of his degree.

5.4 Pre-University Personal Learning Strategies are subject-specific

PLSs were apparently highly dependent on the needs of the subject discipline (summarised in Table 5.2). Approaches were developed that were appropriate to each discipline, which in most cases required many diverse approaches, as participants' pre-university curricula were typically based on diverse subjects. The striking observation when discussing these pre-University strategies with the participants, was that the approaches were highly surface-learning orientated (see section 2.4.4; McCune & Entwhistle, 2011). The methods were focused heavily around factual recall, or strategic use of information, even in subjects where one might expect the adoption of deep, conceptual approaches, such as English Literature or History.

For mathematics, the prime focus was on understanding and recall of methodologies. Once the key principles were understood, then repetition was the key. Past papers were fundamental to this process. The papers would be used repeatedly, until the methodologies were cemented. The aim was then to repeat those remembered protocols in the examination. For the sciences, the aim was to

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Table 5.2 – Summary of reported study strategies adopted for pre-university subjects

Subject	Study/revision strategy
Biology	Memorisation of processes, cycles and pathways. Flashcards, posters and/or mind-maps common for memorisation.
Chemistry	Memorisation of chemical reactions and formulae. Repeated completion of past-papers.
English Literature	Focus on a few literary texts. Identification and memorisation of high numbers of quotes. Flashcards and/or mind-maps common for memorisation. Practice fitting quotes together into essays to address prescribed themes.
History	Memorisation of dates and concepts. Flashcards and/or mind-maps common for memorisation. Practice fitting factual information into essays to address prescribed themes.
Mathematics	Memorisation and practice of methodological approaches and formulae. Repeated completion of past-papers.
Philosophy	Memorisation of philosophical concepts. Flashcards, flow charts and/or mind-maps common for memorisation.
Physics	Memorisation of concepts and factual information. Repeated completion of past-papers.
Religious Studies	Flashcards, flow charts and/or mind-maps common for memorisation. Practice fitting concepts together into essays to address prescribed themes.

remember factual principles – for chemistry, the key facts and chemical reactions; for biology, the terminology and verbatim memorisation of biochemical pathways. For physics and psychology, learning key principles was important. For humanities subjects, which by default are more discursive disciplines, the approaches were even more strategic. The ubiquitous approaches adopted were to remember key features, which could then be integrated together into essay answers in the examination. With English Literature, for example, the typical approach was to remember a collection of quotations which could then be applied to fit whichever theme the essay was addressing.

> Literature A-Level was about 'how many quotes could you remember?'. That was a killer … So in the exam they could give us any text over any period and ask us to compare it to other literature pieces that were relevant. So you needed a massive range of quotes.
>
> David (Interview 1)

A similar approach was taken with History and Religious Studies. In each case, the approach was to create an essay from a series of components, rather than to learn broad principles which could then be applied more generally.

Participants had learned the specific strategic needs for their school-level educational environment, and had adapted their learning approaches to fit these requirements. When discussing these approaches in the first interview, all participants clearly vocalised that they knew their approaches would need to change and adapt to the needs of the university course. This realisation by the participants, that the study methods they had adopted in school were potentially limiting, suggests that the participants all possessed the metacognitive capacity required to realise that their strategy was simply a means to an end. This metacognition meant that the participants each were able to rationalise their behaviour to the immediate requirements of the environment, and were able to identify the limitations and restrictions of their study approaches, a key feature of self-regulated learning (Boekaerts, 1999).

5.5 Redefining self-regulated learning during Year 1

The participants each had developed robust strategies for their studies when they arrived at University. However, the approach towards education at university was different to their experiences at school, both in terms of a reduction in the number of subjects studied, an increase in the complexity of those more-narrowly-focused subjects, and a significant increase in volume of information (either lecture content for the chemistry students, or additional reading for the History and English students). In order to successfully transition to effective undergraduate study, the

participants potentially needed to adapt their study methods, as exemplified by a comment from Tony, at the end of the year:

> And I think you've got to scrap old ideas, so that you can go and learn new ideas. And that's what I did with uni. I said mind maps aren't working for me any more, so scrapped that idea and try and work out something else. So just try and work out something else that actually works.
>
> Tony (Interview 3)

Where the study approaches of the participants were challenged is by the different requirements of University-level activities, compared to those in school. For example, the experiences of the English students at the point the second interview cycle (mid-way through the academic year) had identified that the approach of learning a battery of quotes would no longer be sufficient, as their University course did not focus on three or four core texts, but rather on whole genres of literature.

> It's a lot more drawing parallels between multiple texts, as opposed to what used to be just two texts for the entire year. …before you'd have to remember loads and loads of quotes and things like that … it's more about what was going on around the text; more so than just the text itself.
>
> Andrew (Interview 2)

Adaptation to this new approach to literature meant that the PLS Andrew employed in his previous education would now clearly be of little use. The same situation was experienced by the History students, where the previous focus on core events and themes no longer applied to the broader subject they were studying in more depth. Use of evidence and forging links between key concepts was of more importance in the degree-level subject, than names, dates and events. Chemistry students, whilst not facing the radical change that their peers in the humanities experienced, were still faced with a new challenge – that of volume and complexity. The minutiae of detail their degree required was considerably greater than that of their pre-university courses. The challenge here was therefore to adapt their study approaches to deal with volume of content, and a restricted capacity to triage, consolidate and conceptualise their notes.

An additional complexity in the development of the study strategies of the participants, once they had arrived at University, was a general lack of a clear understanding of the assessment strategy that they would face. As a result, none of the participants changed their study approach to any radical extent. The revisions to the PLS were each based on changing needs, and this was very apparent in the incident-with-incident coding. What was lacking in this change process was a clear concept of what they should be developing their approaches towards, and guidance on how to do so. So, the change in PLS was primarily reactive in response to experiences, rather than proactive to test-run and adapt to a new educational environment. The potential reasons for this are discussed in chapter 7.

5.6 Conclusions and implications for practice

5.6.1 Ongoing development of the Personal Learning Strategy

This analysis described in this chapter suggests that the participants were already effective independent learners when they began their university studies. Each participant had already developed effective methods for studying a range of subjects, based primarily on a process of trial and error. They were already effective self-regulated learners. However, their focus for learning was highly strategic in nature, and focused more on surface- than deep-learning approaches (Entwhistle & Peterson, 2004; McCune & Entwhistle, 2011). The transition away from this surface-strategic approach was the limiting factor, and required not only guidance, but also experiential learning and self-discovery. Once the participants realised what was required of them, then they were able to adapt their study approaches accordingly. This constant adaptation aligns with the findings of Christie et al. (2016) and MacNamara and Collins (2010) who each identified that the students who adapted to University the quickest, and who were more settled during their courses, were those who regarded their development as an ongoing process of change and adaptation.

The participants had already developed the cognitive, metcognitive and motivational dimensions outlined in Lehmann, et al. (2014). The participants had very clear and bespoke strategies for studying each different discipline. This suggested that each participant had (to varying extents) knowledge of their subject domains, strategic methods, information processing and goal-setting. These are characteristic of the *cognitive dimension*), each well-adapted to individual subject disciplines. The participants typically had knowledge of their own abilities and limitations, having clear ideas of their capabilities (for example Grace's understanding of her workload capacity, Camille's understanding of her attention span, or Tony's belief that he was not good at applying information to problem-solving). They also typically had the ability to plan, monitor and evaluate the effectiveness of their learning approaches. Examples of the ability to plan, monitor and evaluate their SRL were presented throughout the chapter, and include the observation that Simon had already developed an effective system for writing notes, Mary had a defined planning approach using colours, Jane found lists useful for planning and revising, and Raashid had a personalised PLS that did not align with his parents' ideals of studying. These characteristics are exemplars of the *metacognitive dimension* in the Lehmann et al. (2014) model. These capabilities were closely framed within their previous educational experiences of school, and participants were aware that they needed to adapt when they came to University. They also had clear beliefs and motivations, as well as affective strategies for effective study (the *motivational domain*). Grace and Camille reported needing considerable motivation during their Baccalaureate studies, Bryn, Orla, Mary and Zach were particularly motivated by love of certain subject, and several participants found it motivating to be seated near peers who were also working. Again, these were closely adapted to the immediate needs of their school

environment, and needed to adapt to their new environment. The participants also evidenced core elements of Boekaerts's (1999) model for self-regulated learning. *Regulation of the self* requires identifying goals and resources, which was was evidenced by participants having clear aims at school of what they wanted to study and why. They also had clear ideas of where to find information and how to curate valuable versus useless sources of learning. *Regulation of the learning process* requires use of metacognitive knowledge and skills to direct effective learning. The affective strategies mentioned above are examples of this, as was the understanding of their own limitations and strengths. *Regulating the modes of processing information* requires a choice of effective cognitive strategies, evidenced by the many bespoke PLSs developed by the participants, and the common rejection of imposed strategies that did not appear to be useful to them. Indeed, they were typically highly adapted to each of these dimensions of the model within their own educational milieu.

In terms of the progress towards andragogic learning, when they arrived at University the participants were already well-embedded in Stage 2 ('high pedagogy, high andragogy') of the progression towards autodidaxy described by Delahaye et al. (1994). Participants had shown that they were easily capable of managing their own studying and identifying what worked for them and what did not. The progression onto Stage 3 ('Low Pedagogy, High Andragogy') would potentially require very little transition – possibly only the clear explanation of the expectations required of them for University study – the paradigm towards which they needed to adapt.

5.6.2 Implications for the development of self-regulated learning

The learning strategies of the participants were deeply personal in nature. It would potentially be counter-productive to impose different study approaches on the participants, without first knowing what they personally found effective and impactful. Indeed, whenever strategies were imposed upon them, they typically reacted badly to that imposition. Two findings are that learners already have clearly-defined learning strategies, and these are tailored to their own individual learning approaches. As such, University faculty support for developing self-regulated learning should perhaps focus more on the development and redirection of their study methods, rather than a *de novo* introduction to study strategies. Imposition of methodologies, such as mind maps, which the student may already have actively discarded as being a poor fit for their learning style, may not simply be ineffective, but in fact counter-productive by requiring the student to revisit approaches they have already labelled as ineffective.

A more effective approach to supporting the transition of these students to University study might instead be to facilitate students' reflection on the approaches they use, and supporting their adapting these approaches to the different challenges of university versus pre-university study. It might be

beneficial to approach discussion of learning strategies in a collaborative manner, so that those with similar PLSs can learn from each other's experiences – refining rather than reinventing their PLS. The key factor in this may be to explain the expectations of university study, and to assist the student in matching their preferred approaches to these different expectations. Possibly the involvement of discussion with others who share similar preferences for PLSs might facilitate this reflection. Interactions with others was a key factor in the development of self-regulated learning for the participants, as will be discussed in Chapter 6.

Chapter 6

THE IMPACT OF SOCIAL INTERACTIONS ON THE DEVELOPMENT OF SELF-REGULATED LEARNING

6.0 Introduction and context to the analysis

Previous work (see section 2.4.3; Scott, Mistry, et al., 2014; Scott, Moxham, et al., 2014) had already suggested that despite social or peer-supported learning being a powerful tool, collaborative learning activities were often avoided by students outside of formal classes. In addition, the previous work on transition to university, discussed in section 2.1 highlighted that effective transition to university involved a wide range of interpersonal interactions, and the student embedding or aligning themselves with the people around them. The second research question, '*To what extent do Year 1 students interact with others as part of their self-regulated learning, and what factors affect this*?' aimed to address these parameters. The key aim of this aspect of the analysis was to identify the nature and significance of other people in the learning development of a student, and, also, how these interactions develop during the transition to university.

6.1 Overview of the super-codes and categories

The initial rounds of coding revealed that interactions with other individuals were fundamental to the personal learning strategies of the participants. Figure 6.1 summarises the super-codes that emerged from the CGTh analysis, clustered into three categories. The ***Peer Interactions*** category included super-codes that focused on the nature of the interactions with others – what form of support was experienced/offered, and what form it took. The ***Social Learning*** category included super-codes that foucsed around the types of activities undertaken, and the drivers and barriers to peer-supported learning. The ***Personal Learning Networks*** category comprised of super-codes that related to the nature of mutualistic interactions. The constitution of a participant's Personal Learning Network (PLN) was a major feature within the coding analysis, and was developed further through the situated mapping method. The primary outcome of the analysis as a whole was that social interactions related to learning were varied, complex, and highly contextualised to the discipline and the needs, attitudes, and personality of the participant. A combination of coding and situated analysis was undertaken to investigate the types of interactions, their dynamics, and their impact on the development of SRL.

Figure 6.1

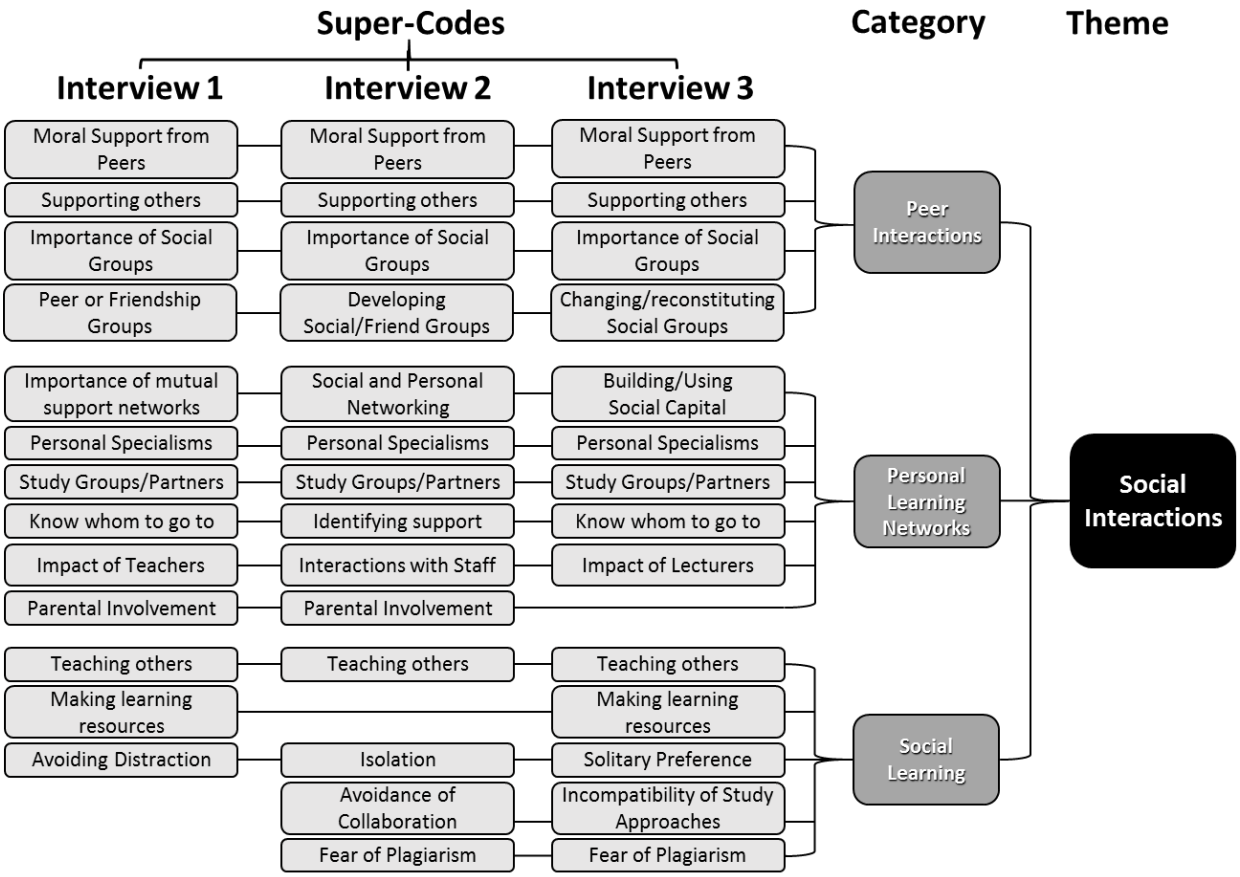


Figure 6.1 – Summary of the super-codes and categories the 'Social Interactions' theme

Identification of the super-codes determined from the CGTh analysis of each interview cycle, showing the categories into which they were consolidated. Super-codes (light grey boxes) are aligned with cognate Categories (dark grey boxes), which are combined to make the Theme. Lines show clustering of super-codes into categories, and categories into the theme.

6.2 Experiences of peer-supported learning

It was clear from the coding that the involvement of others was a significant feature in the SRL activities of the participants. However, there was several differences in the super-codes between the first interview cycle and subsequent cycles (see figure 6.1). It was likely that there was a difference between peer-supported learning activities in school, compared to university. The codes were analysed to identify key features of peer interactions at each institution.

6.2.1 Experiences of peer-supported learning from school

Several participants recalled peer-supported learning activities at school. The involvement of others during A-Level study was not always at the behest of the student, but in several cases was imposed on them either by school policies, parental pressure or personal situations. For example, classes at both Mary and Vic's schools had an active policy of pairing high-achieving students with lower-achieving students, and all students were expected to engage in some peer-supported learning.

> …my English teachers used to sit us, like, A-star student; E grade student; A-star student; E grade student. And so on, I would spend my English lessons explaining the thing to the person next to me.
>
> Mary (Interview 1)

> …the school offered me, well they offered everyone in my year, the chance to tutor someone lower in the school, and the year group below me in chemistry. So I tried to do that in chemistry …I thought it was just really handy.
>
> Vic (Interview 1)

In most cases, however, peer-to-peer interaction was self-initiated, based on some external catalyst. For example, during her Bacculaureate studies in France, Camille's school was a distance from home, and so she and her sister lived together in an apartment. As a result they developed a mutually-supportive relationship, even though they were not within the same academic year. Raashid formed a study group with two other students during his pre-university foundation course, after a coincidental meeting early in the course. This relationship endured after that initial contact, and was productive. The catalyst for the inclusion of others in learning appears to be a combination of the need, opportunity/circumstance, mutual interests, and in some cases driven by external agencies. The mechanism of peer interaction appears to be highly dependent on the individual's situation.

The most obvious contrast was between the needs in core studying on the course, and revision. These dimensions were compared using incident-with-incident coding. Figure 6.2 illustrates the types of activities adopted for studying, exam revision, or working on assignments. The role of others during studying outside of exams was typically social and motivational – providing encouragement to study, and maintaining engagement over a sustained period. Pair-based interactions to reinforce knowledge and understanding (such as explaining or teaching others, sharing notes, and discussing ideas) were also common (and seen as highly impactful) between course-study and exam revision. Revision for exams typically involved question-and-answering sessions between individuals, mutual testing of content and explaining to others to reinforce understanding. The peer-led preparation for university examinations (what limited examples there were of this) were primarily focused around peer-testing, and clarifying points of confusion, or uncertainty.

Figure 6.2

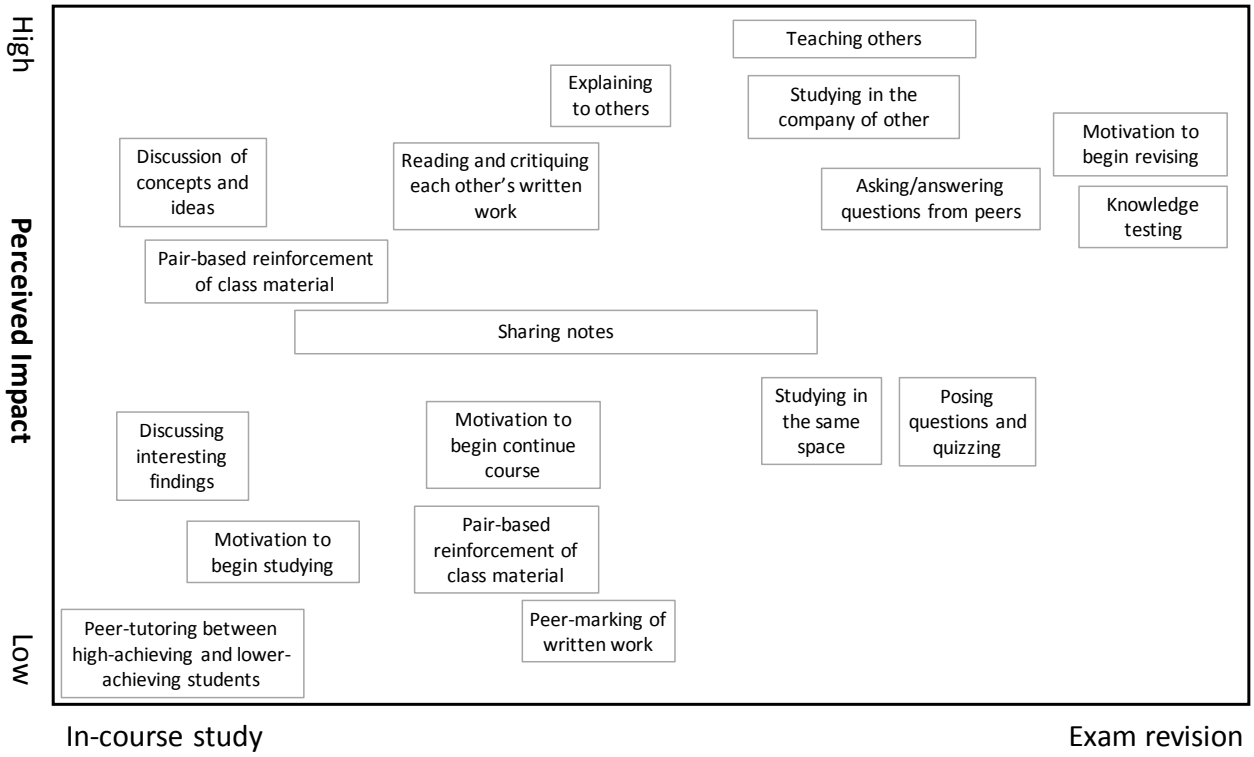


Figure 6.2 – Relationship between reason for use of peer-supported learning and purpose for studying. The figure positions peer-supported learning activities (grey boxes) along two arbitrary axes of the more-prominent use of the learning strategy (in-course study versus revision), against the perceived positive impact of that strategy by the participants.

Some participants did engage quite significantly in peer-led learning – predominantly during their A-Levels. However, this was usually a response to a need to do so due to insufficiencies of their school or college. Kate's experience was possibly the most extreme example of this. Kate's school, despite being regarded as the best in the area, and scoring very highly in government inspections, was – according to Kate's experience – gravely deficient in its teaching. This deficiency in the teaching led the students themselves to have to form their own self-taught classes in order to progress in their subject.

> We were a very close year because of our small size, we ended up working together. So you'd have groups of people and you'd help each other out no matter what you were doing. … You'd always be, in group work, you'd get in contact with people, you'd send people information, you'd receive information, you'd ask teachers when necessary, but a lot of the time you'd rely on what was around you to get through.
>
> Kate (Interview 1)

Kate reflected that the important factor in the success of her peer group while at school was that the group was quite small, and had remained close and intimate with few changes over a period of years. At university, Kate also developed a social group of peers, and did on occasion include other individuals in her studying. Nevertheless, she preferred to study independently during her first year, rather than rely on what she perceived as a less-effective peer network.

Kate's situation was echoed to a lesser extent by David, Jane, Ursula and Mary, each of whom were forced by circumstance to adopt peer-led or peer-supported learning activities to compensate for deficiencies in their teaching at school (either substandard teachers, absent teachers, or a lack of subject specialists in the school).

> In lessons sometimes we'd just be left to answer questions from a book and stuff. And we all sit in a circle and talk to each other about the questions. We'd go through them together in lessons, and then outside of lessons we'd, in threes, we'd sit in the 6th form centre, or the canteen and just go over some questions together
>
> Ursula (Interview 1)

The combination of need and opportunity identifies that the participants were self-regulating their learning, but were doing so as part of a social collective, and utilising the skills and knowledge-base of those around them to form a PLN to support their learning where required. These PLNs being established were extensive, mutualistic, and frequently highly-effective. However, the approach towards collaboration typically changed at university.

6.2.2 Experiences of peer-supported learning at university

Although peer interactions during studying were common at school, peer interactions were reported by participants to be far less common at University. Participants focused instead on solitary learning more, having developed these skills of self-directed study and knowledge development during school. The incident-with-incident coding approach highlighted that there was variation between individuals (five contrasting individuals are summarised in Figure 6.2*(a)*), and between disciplines (summarised in Figure 6.2*(b)*). Individuals varied in the frequency and extent of the peer-supported activities, and in the nature of the individuals involved as well as the learning activities undertaken. The comparison between disciplines appeared to be between science and humanities subjects.

One of the unexpected outcomes of the CGTh and SA was the nature of the person-person elements of the PLN. The peers who appeared to have the most substantial impact were not the peers on their course ('course-peers'), but the individuals with whom they shared accommodation ('domestic peers'). As was typical for Year 1 students in their institution, participants were placed in one of

Figure 6.2

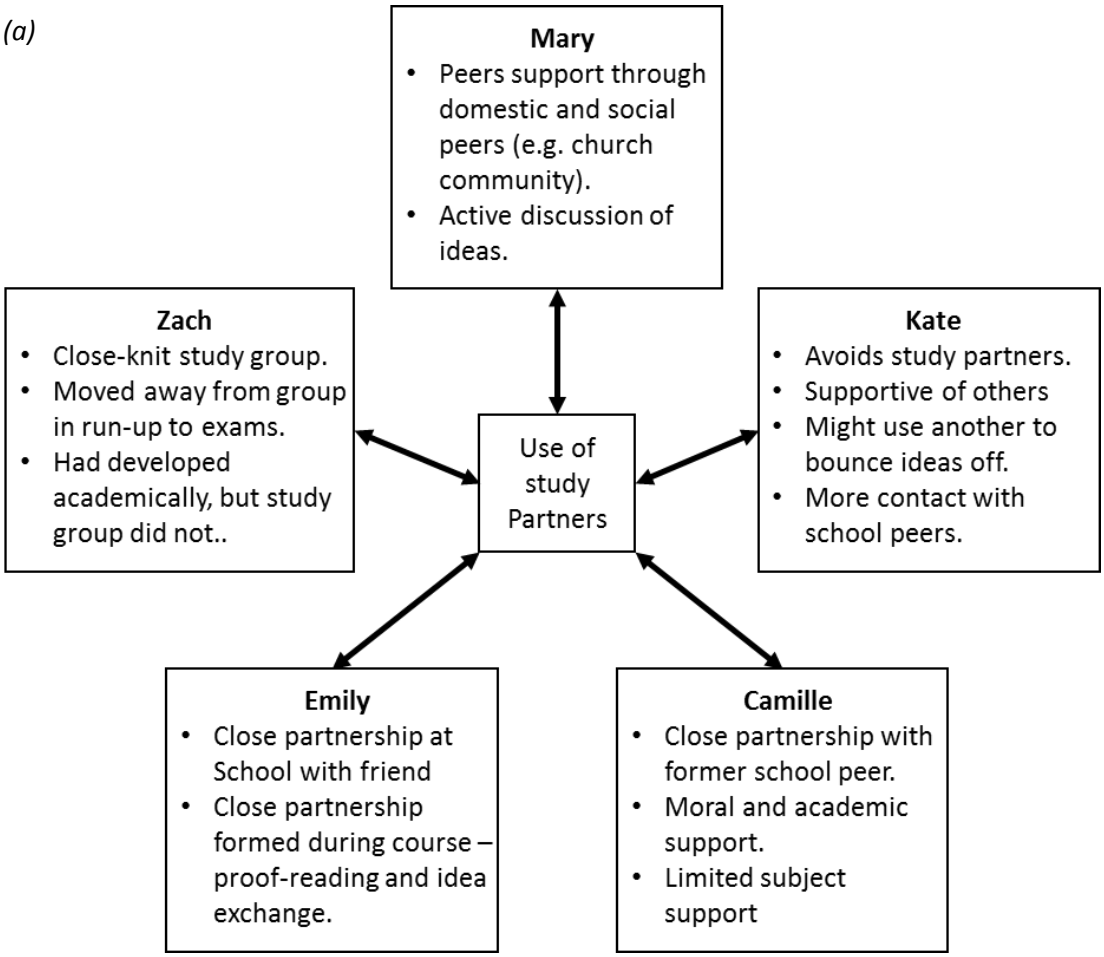


Figure 6.2 – Summary of findings from incident-with-incident coding for involvement of peers in learning. (a) Comparison of the experiences of five participants relative to their use of study partners in their learning across the academic year. Bullet points summarise key common features of the codes; (b) A comparison of the experience of students on the three disciplines, on their experiences of peer interactions over the first year of university.

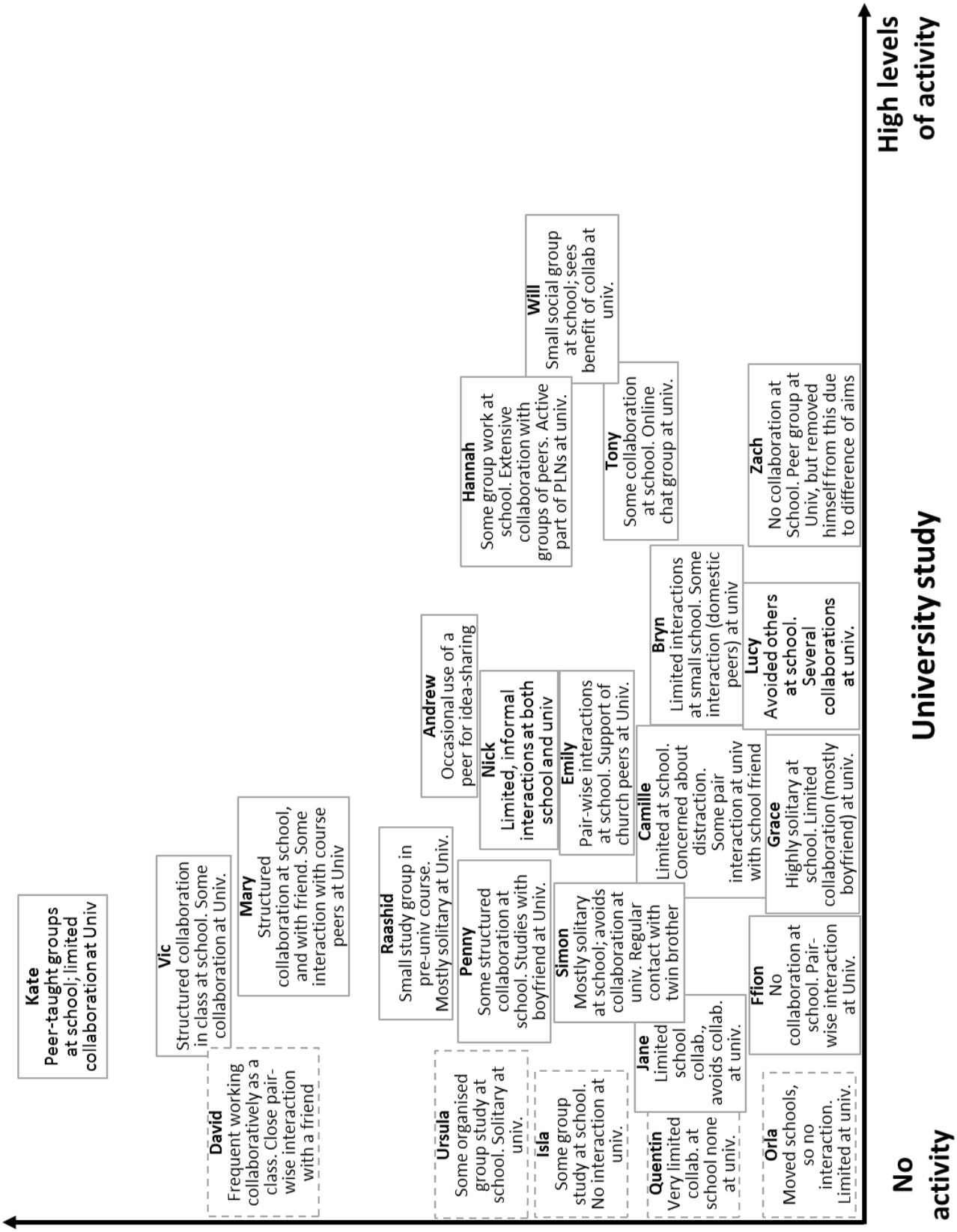
several Halls of Residence, if they requested it (Nick and Ffion decided to live at home). Residences typically comprised of collections of rooms around a communal kitchen or living space. These domestic peers, despite being often from different subject disciplines, were consistently the ones with the greatest impact on those participants who lived in university accommodation, both in domestic activities and learning activities.

The comparison between disciplines appeared to be aligned to course structures, with the Chemistry students undertaking structured peer-supported learning within class, such as working in pairs or threes during laboratory classes or tutorial workshops. In the humanities subjects, the lack of communal activities between small groups (seminars were typically 20+ students, and therefore not an intimate environment) correlated with the general absence of discipline peer interactions in the humanities subjects.

Overall, there was a range of adoption of peer-supported learning by participants' in school and university studies, and there was no consistency to this relationship. Figure 6.3 maps the extent of shared knowledge-construction or revision reported by each participant, in school and university. Some participants, such as Orla and Ffion, rarely collaborated in either school or university. Others collaborated extensively at school (e.g. Kate, Vic), or at university (e.g. Hannah, Zach). What is striking about figure 6.3 is that the participants cluster predominantly in the bottom left quadrant (low levels of collaboration at school and university), while there are none in the top right quadrant (high levels of collaboration in both school and university). This suggests and inconsistency of approach for collaboration – it is either used in one institution, or the other, but not both. It should be noted that David, Orla, Isla, Quentin, and Ursula, all of whom are positioned on the extreme left of the horizontal axis in figure 6.3, only participated in the first interview cycle. Although they reported little engagement in collaborative activity at University in their first interview, there was no opportunity to follow their study approaches later in the course, and they might possibly have adopted more collaborative approaches as the year progressed.

Figure 6.3 (overleaf) – Comparison of the adoption of peer-supported learning in school and university. The characteristics revealed by incident-with-incident coding regarding peer-led learning for all participants. Position between the two axes give a general indication of the extent to which the participant showed high or low levels of peer-supported learning activities between school (vertical axis) and university (horizontal axis). Boxes with dashed line borders represent participants who engaged in one interview cycle only.

Figure 6.3


High levels of activity
Pre-university study
No activity
No activity
University study
High levels of activity
Kate
Peer-taught groups at school; limited collaboration at Univ
Vic
Structured collaboration in class at school. Some collaboration at Univ.
Mary
Structured collaboration at school, and with friend. Some interaction with course peers at Univ
David
Frequent working collaboratively as a class. Close pair-wise interaction with a friend
Raashid
Small study group in pre-univ course. Mostly solitary at Univ.
Penny
Some structured collaboration at school. Studies with boyfriend at Univ.
Ursula
Some organised group study at school. Solitary at univ.
Simon
Mostly solitary at school; avoids collaboration at univ. Regular contact with twin brother
Isla
Some group study at school. No interaction at univ.
Jane
Limited school collab., avoids collab. at univ.
Quentin
Very limited collab. at school none at univ.
Ffion
No collaboration at school. Pair-wise interaction at Univ.
Orla
Moved schools, so no interaction. Limited at univ.
Andrew
Occasional use of a peer for idea-sharing
Nick
Limited, informal interactions at both school and univ
Emily
Pair-wise interactions at school. Support of church peers at Univ.
Camille
Limited at school. Concerned about distraction. Some pair interaction at univ with school friend
Grace
Highly solitary at school. Limited collaboration (mostly boyfriend) at univ.
Bryn
Limited interactions at small school. Some interaction (domestic peers) at univ
Lucy
Avoided others at school. Several collaborations at univ.
Hannah
Some group work at school. Extensive collaboration with groups of peers. Active part of PLNs at univ.
Will
Small social group at school; sees benefit of collab at univ.
Tony
Some collaboration at school. Online chat group at univ.
Zach
No collaboration at School. Peer group at Univ, but removed himself from this due to difference of aims

Few participants reported being engaged in collaborative learning at university. Even in these cases, the interactions were typically limited, and focused more around revision or answering questions, rather than co-construction of knowledge or ideas. For example, Tony's collaborative group was an online group chat where each of the participants could ask questions or seek help from the group. Zach's collaborations were face-to-face, but Zach's attempt to revise collaboratively as a group of four peers ended in him disengaging from the group due to differences in how they wanted to learn and study. Zach wanted to focus more on conceptual frameworks and understanding principles, while his study group preferred to focus on factual recall. Zach found that approach too limiting, and so involved himself gradually less and less in the group interactions.

> I did decide to do a group study with my chemistry friends. They did a very memorising process, while I was doing a more, "This is how I would use equations, if the question gives me this amount of information, what can I start doing with this information?"
>
> Zach (Interview 3)

Zach's experience was notable, because he attempted collaborative learning as an approach, but eventually abandoned it because his learning group did not align with his needs. The recognition that others might not share one's own learning goals/approaches was one of the two main reasons (the other being a concern over being distracted) why other participants actively avoided collaborative learning approaches. For example, Jane was unwilling to explore collaborative activity because she felt that the input of others would be unhelpful and distracting.

> I like to work on my own, to be honest. I don't mind talking about it with other people, or being in the same room. But this is my work, I'm going to do it, and don't try and help me.
>
> Jane (Interview 3)

A similar rationale was voiced by many participants, feeling that others would not share the same learning goals or styles as them, and so would not be conducive to studying together. This may be an impact of participants having already developed a PLS, as detailed in chapter 5. The result being that – unless they met another individual who shared their interests and approaches – participants would have to compromise to a less-effective PLS, if they chose to collaborate with another.

Distraction was another major concern for participants when considering collaborative learning approaches, and this was the most common reason given for not working collaboratively with peers. Either participants felt that they would be unable to concentrate, or would be required to focus on areas that they did not need to consolidate. Nick voiced a concern that working with others would negatively impact on his own mental state if surrounded by others prior to an exam.

> I think [working in groups] is useful, but like I said not the day before the exam. … Because everyone panics on the day before the exam, and I don't want to be surrounded by panicked

> people. I'm bad enough on my own. I think the earlier I would do it, the better it would be. I think it is useful, I just haven't done it, because I find that what I do on my own is enough.
>
> Nick (Interview 3)

Even in activities such as analysing or understanding a poem, where differing points of view would be beneficial, there was a conspicuous lack of adoption of collaborative learning activities.

The two exceptions where the participants reported beneficial collaborative learning activities were highly scaffolded by the teacher and not student-led approaches: *(i)* Laboratory and tutorial teaching in chemistry, where participants worked in twos or threes on an experiment or solving a problem. *(ii)* Creative Writing seminars in English, where students were required to critique the work of other students, and therefore improve their work by collaborative discussions. Both of these were regarded as highly beneficial, but it was rare for the participants to continue group interactions outside of class. Participants did sometimes involve *one* other party in either problem-solving (for chemistry) or critiquing an essay (in English). In all cases where this type of exchange was reported it was a pair-wise interaction, rather than a group activity. Examples of this were Camille sharing work with a friend from school who was studying some of the same modules, Simon discussing Chemistry problems with his twin brother, or Penny asking her mother to proof read her essays for grammatical errors.

It is ironic that participants' often-extensive and successful pre-university use of peer-supported learning apparently gave many the skills necessary for independent learning at university. However, this often meant that they did not need (and so did not initiate) such peer-supported learning activities at university. For example, Vic was used to peer teaching at School, which was embedded within his school's teaching practice.

> …we would generally help each other when it came to studying. Generally if there was someone who would ask me for help, then I would help them out, but if they were doing a different course then I wouldn't work with them. … There was something I would understand, and explaining it to them would probably help me remember it more. ... I don't know if I would go out of my way to ask someone to revise with me, if someone wanted to revise with me then I would say yes.
>
> Vic (Interview 1)

However, Vic then actively avoided collaborative learning at University, extending his solitary learning preference to be more pervasive.

> I mainly revise on my own. … I may just be in my room revising, and if I receive a message asking "Please can you help me with this?" then I'll go and explain it. I finish the train of thought I'm on ... and then I'd go and help.
>
> Vic (Interview 2)

If I just got it, and no one asked me, then I wouldn't go up and explain it to someone.

Vic (Interview 3)

Peer-led learning is therefore potentially a fall-back position, adopted when other more-didactic activities are absent or lacking impact. The preferred default for most was the combination of teacher-led activity supported by individual (or at most pair-wise) study.

6.3 The complexity of peer Interactions and social learning

6.3.1 Social interactions related to the development of SRL are complex

The super-codes in the 'Peer Interactions' category detailed the nature of these social interactions and their influence on the participants' learning. The development of a Situated Map helped investigate the complexity of these interactions (Figure 6.4). The situational map illustrates the strong positive impacts of other people on the course of study. The map also highlights that there were numerous complex interactions impacting upon the participants. Many of the interactions were themselves part of a network of linkages that helped shape the development of SRL. Within the situational map, one can see that individual factors impact upon the participant by both direct and indirect means. Figure 6.4(a) highlights the positive or supportive interactions, Figure 6.4(b) shows the negative or inhibitory interactions. Figure 6.4(c) shows the combined map of both positive and negative interactions. Figure 6.4 highlights that The interactions are therefore complex, and require the participant to mediate the impact of social interactions, to ensure that the positive impacts are enhanced and the negative impacts minimised.

The most significant impacts were from domestic peers. Domestic peers were involved in all aspects of the participants' lives: social, personal, logistical, and academic. In particular, the domestic peers were integral to the studying and learning activities the participants undertook outside of class. Of far less significance were the peers on the course of study, and for most participants, course-peers were of little impact unless where there was an overlapping interaction outside of the course (e.g. they were also domestic peers, or shared a common social interest or hobby, such that they met outside of the degree course).

Figure 6.4(a)

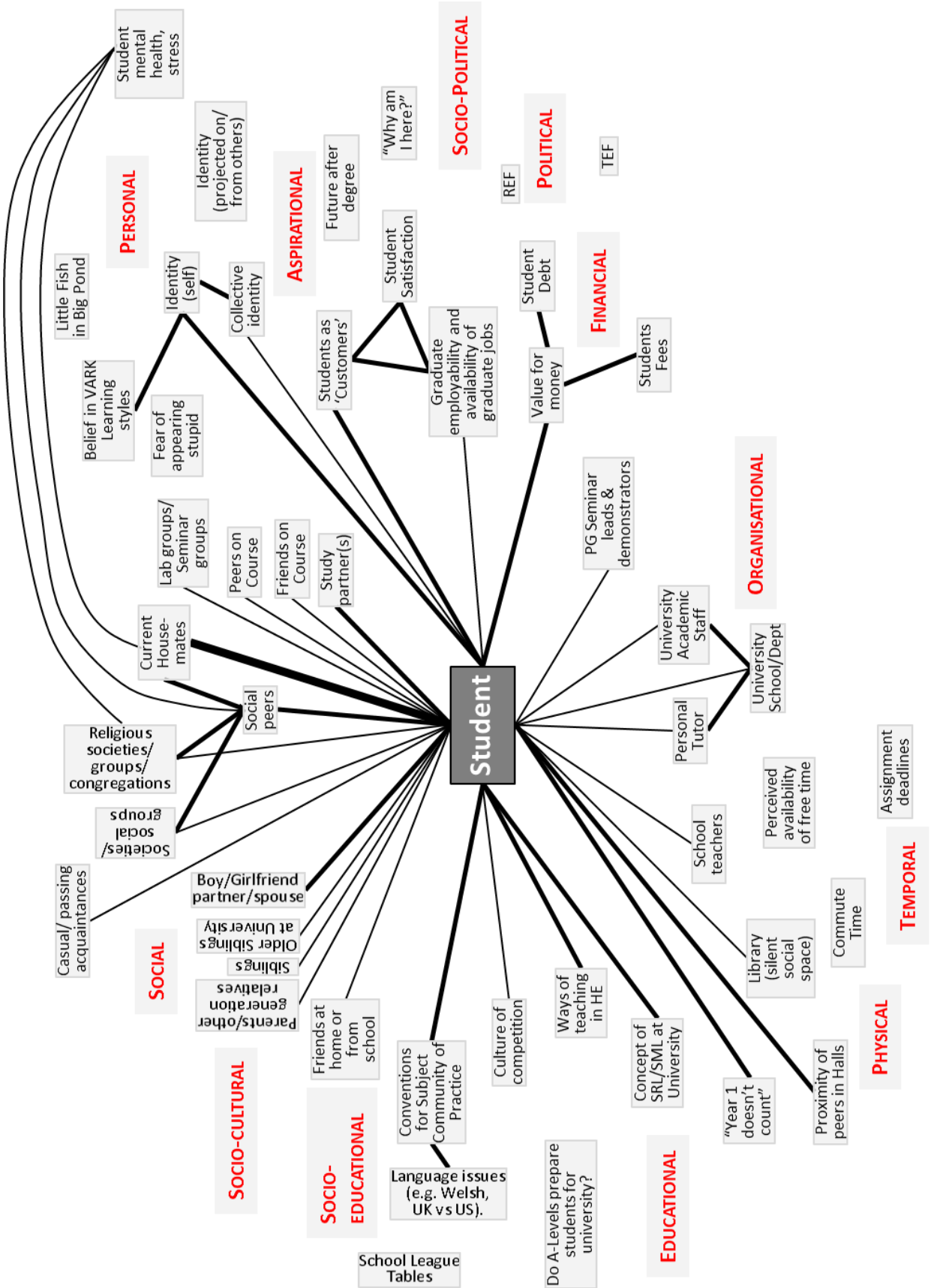
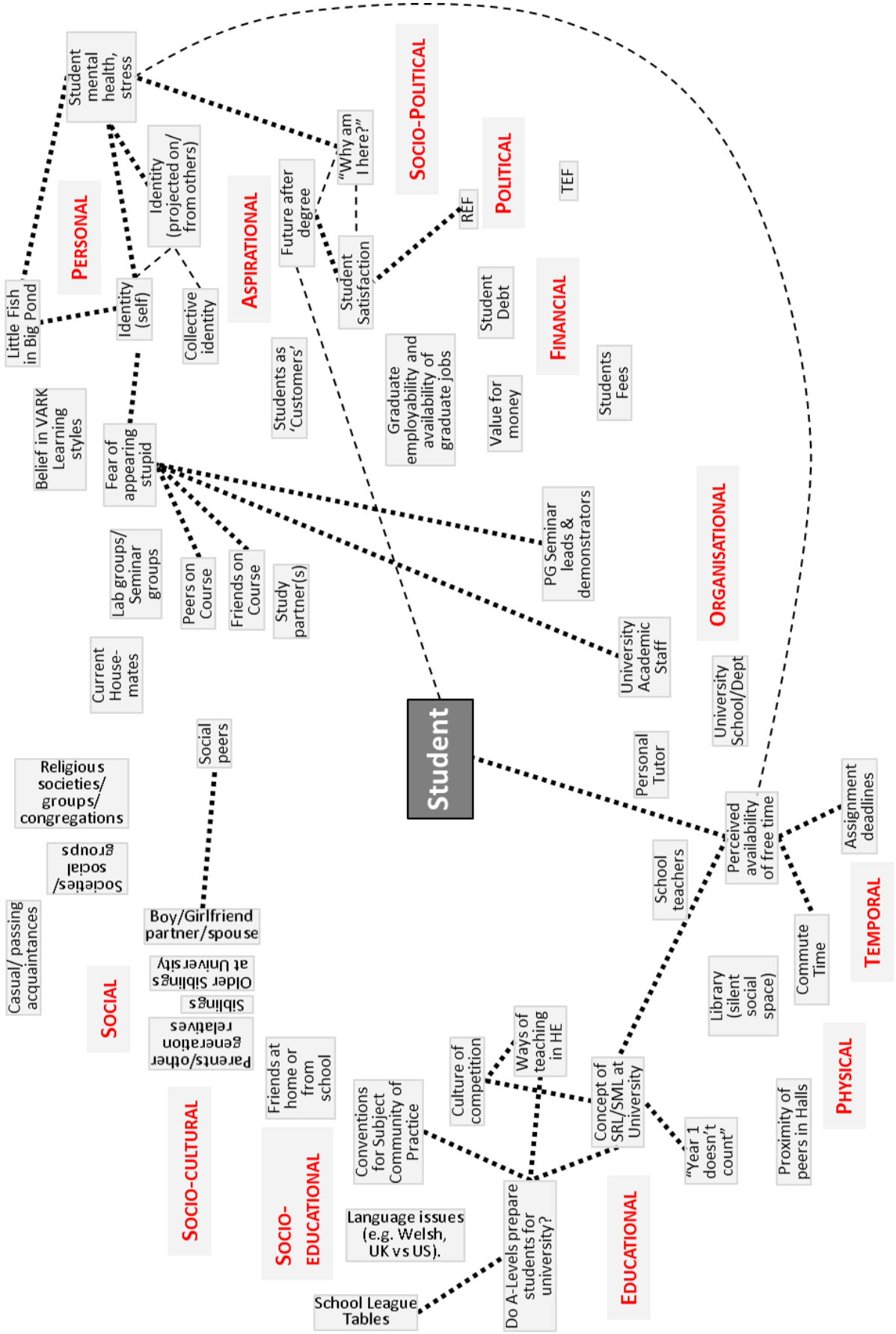

Student
PERSONAL
Student mental health, stress
Identity (projected on/ from others)
Little Fish in Big Pond
Identity (self)
Collective identity
Belief in VARK Learning styles
Fear of appearing stupid
ASPIRATIONAL
Future after degree
"Why am I here?"
Student Satisfaction
Students as 'Customers'
Graduate employability and availability of graduate jobs
SOCIO-POLITICAL
REF
TEF
POLITICAL
Student Debt
Value for money
Students Fees
FINANCIAL
ORGANISATIONAL
PG Seminar leads & demonstrators
University Academic Staff
University School/Dept
Personal Tutor
School teachers
Perceived availability of free time
Assignment deadlines
TEMPORAL
Commute Time
Library (silent social space)
Proximity of peers in Halls
PHYSICAL
"Year 1 doesn't count"
Concept of SRL/SML at University
Ways of teaching in HE
Culture of competition
Conventions for Subject Community of Practice
Language issues (e.g. Welsh, UK vs US).
EDUCATIONAL
Do A-Levels prepare students for university?
School League Tables
SOCIO-EDUCATIONAL
Friends at home or from school
Parents/other generation relatives
Siblings
Older Siblings at University
Boy/Girlfriend partner/spouse
SOCIAL
Casual/ passing acquaintances
Societies/ social groups
Religious societies/ groups/ congregations
Social peers
Current House-mates
Lab groups/ Seminar groups
Peers on Course
Friends on Course
Study partner(s)
SOCIO-CULTURAL

Figure 6.4(b)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Current House-mates
Social peers
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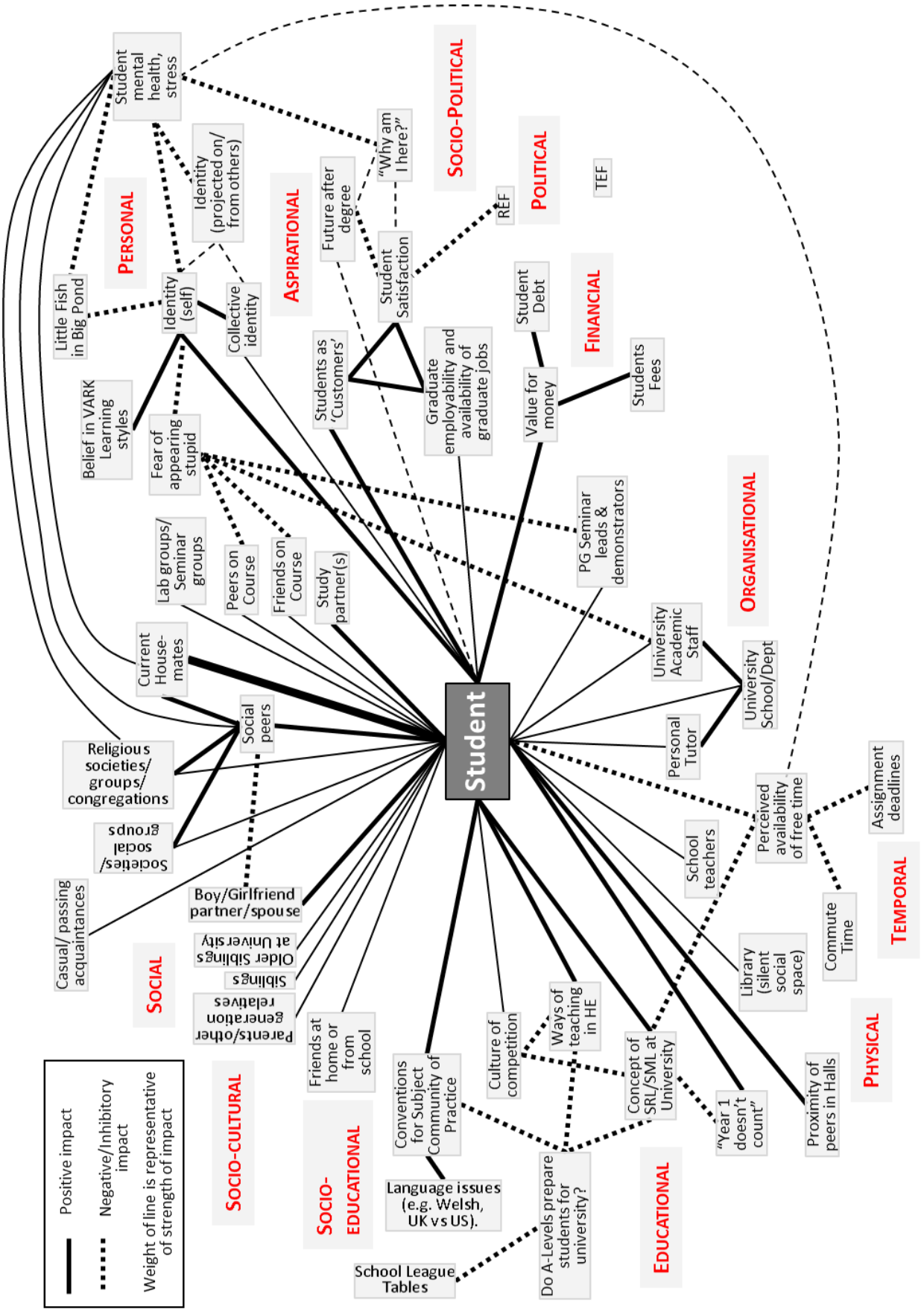
Societies/ social groups
Casual/ passing acquaintances
SOCIAL
Boy/Girlfriend partner/spouse
Older Siblings at University
Siblings
Parents/other generation relatives
Friends at home or from school
SOCIO-CULTURAL
SOCIO-EDUCATIONAL
Conventions for Subject Community of Practice
Culture of competition
Ways of teaching in HE
Concept of SRL/SML at University
"Year 1 doesn't count"
Language issues (e.g. Welsh, UK vs US).
School League Tables
Do A-Levels prepare students for university?
EDUCATIONAL
School teachers
Perceived availability of free time
Assignment deadlines
Commute Time
TEMPORAL
Library (silent social space)
Proximity of peers in Halls
PHYSICAL

Figure 6.4(c)


Student
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"Year 1 doesn't count"
Proximity of peers in Halls
PHYSICAL
School teachers
Perceived availability of free time
Assignment deadlines
Commute Time
Library (silent social space)
TEMPORAL
Positive impact
Negative/Inhibitory impact
Weight of line is representative of strength of impact

Figure 6.4 (previous pages) – Reconstituted 'Messy Map' from Situational Map analysis of the social interactions surrounding a Year 1 undergraduate student. The relationship between human and non-human factors to the student (Year 1 undergraduate). Individual factors are indicated in shaded boxes, and broader conceptual themes are labelled in red. Positive/reinforcing impacts are indicated by a solid line; negative/inhibitory interactions are indicated by a dotted line. The thickness of the line indicates the importance/significance of the interaction, as revealed by the Situational Mapping process. (a) Positive impact interactions, (b) Negative impact interactions, (c) Combined messy map showing positive and negative interactions

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Several key discourses have a significant impact on the participant, such as value for money of their degree, graduate employability concerns, general social perceptions of students, and the prevalent social interactions within their subject CoP. There are several negative interactions, most notably those around the 'personal' factors impacting on the participant, and their concerns over others' perceptions of them, and their future development or security. Some participants noted particular experience of stress or depression, or extremes of negative emotion, and these also feature in the situational map as influencing factors. Negative impacts were primarily cerebral in nature, focusing around perceptions, conceptual frameworks, personal views, perceptions of the views of others, and personal identities. Negative interactions tended to have less involvement of other persons, but did impact on how the participants interacted with others.

The key outcome from the situational mapping was that peer interactions as part of learning development were complex, and part of a larger network of interactions between individuals, groups, structures, institutions and discourses. All participants experienced some form of involvement with others in their learning, and although each participant was different, there were experiences that were common and shared between participants. In particular there were key constituencies of individuals – 'social worlds' – that appeared to impact upon each other, and upon the participant. The participant was often a member of several social worlds, and so the next stage in the analysis was to map the interactions of these groups using the social worlds/arenas mapping approach of SA.

6.3.2 Social Worlds interact and overlap within Social Arenas

The Social Worlds/Arenas Mapping approach was highly beneficial, as it diagrammatised the interactions or overlap between groups, and enabled the participants to be situated within this collective layer of social interactions. Figure 6.5 illustrates the most relevant map to the analysis, identifying the social groups, and how these social groups interact with the University or non-university university community. This map illustrates the strong level of overlap between different

Figure 6.5

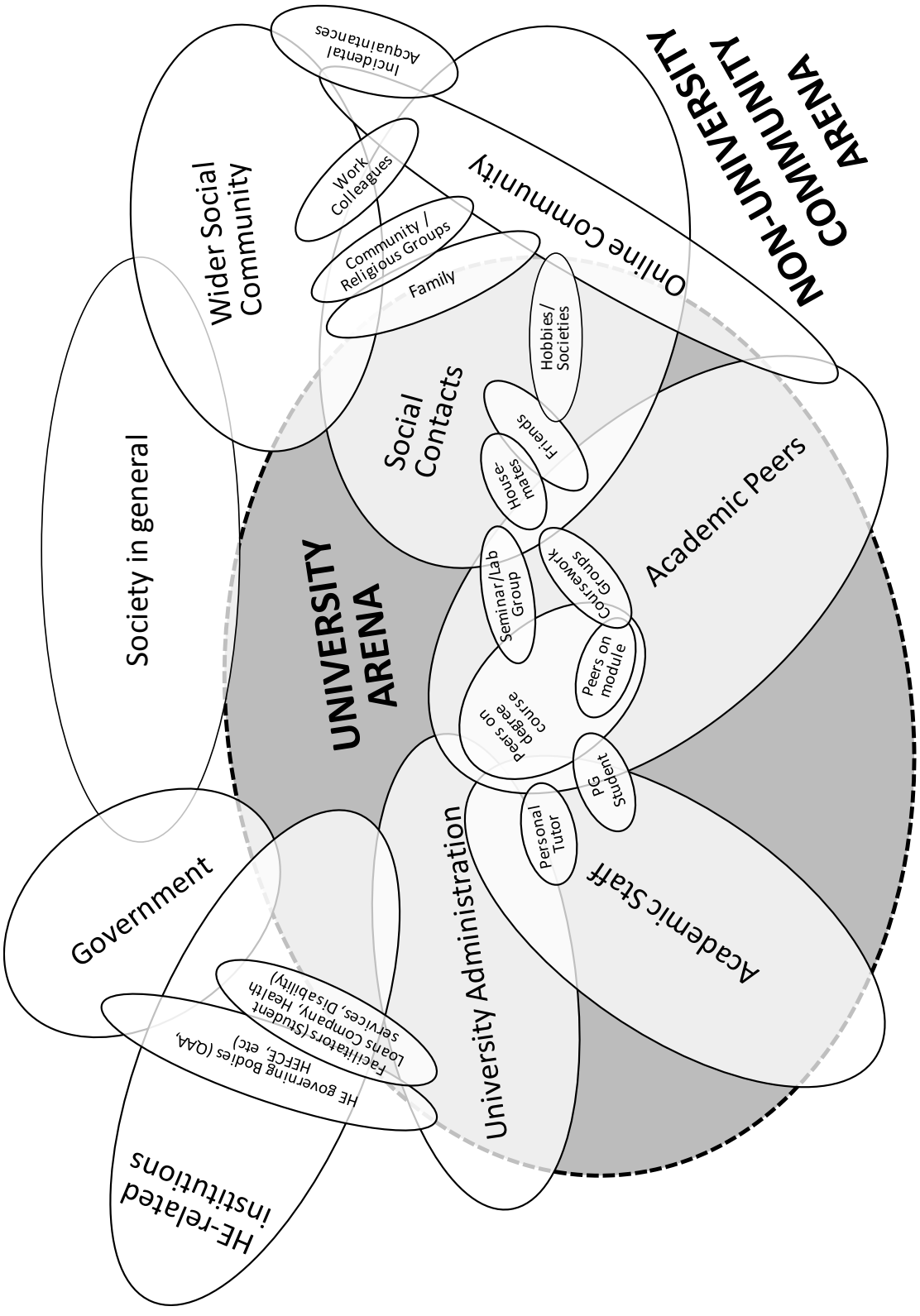

Figure 6.5 –Social Worlds/Arenas analysis. Social worlds (e.g. Government, HE-related infrastructure, Academic staff) are illustrated by solid-line ellipses, labelled with lowercase text. Overlap of the shapes indicates commonality between the social worlds. Social Arenas are indicated by capitalised bold text and a dotted line. The degree of interaction or co-population of the Social Worlds with the Social Arenas is illustrated by the degree of overlap of the shapes.

social worlds. For example, the social world of discipline-specific (course-related) peers is more strongly embedded in the educational arena, than the social arena. While the social world of family relatives is firmly embedded within the non-educational arena, there is ample evidence in the data of family members being involved in study activities and support of the participants. Examples of parental involvement in learning include Penny's mother supporting her by proof reading her work, Mary's parents advising her in study techniques, Orla's mother supporting her mental health, and Hannah's parents acting as sounding boards for her ideas. As a result of this range of interactions, the family social world does have a foothold in the education social arena.

Several social worlds show considerable degrees of overlap. For example, the social world of peers on the course of study overlaps with the social world of domestic peers (housemates), as in some instances individuals cohabited with peers from their course. However, most individuals within the 'peers on the course' social world were not domestic peers. The different social worlds therefore had three dimensions to consider – their impact on the participant, their impact on each other, and their wider impact on the social arena as a whole.

6.4 Forming peer-based interactions for learning

Given that SRL for all participants involved some form of social interaction, it was important to further investigate the nature of these interactions, and which were most effective. The analysis of the coding and the situational map suggested that individual relationships were fundamental, and so these were addressed first.

6.4.1 The involvement of others in the reinforcement/development of learning

One of the super-codes within the 'Social Learning' category involved reinforcing understanding by teaching another person. The majority of participants identified this as a beneficial approach, both at school and during the university course. Teaching others was utilised as a strategy either during their general studying for their course, or in revision and preparation for examinations. This approach was used both as a confirmation of learning, but also a means to embed their conceptual frameworks of core information. When asked who they felt benefitted the most form this interaction, it was typically voiced to be the participant themselves, the one doing the explaining.

> I've put the pieces back into my head and sort of make it my explanation, and then I'll explain it to others in a clearer version, and they do understand it after a lesson. If that

> makes sense. And the same with other people, but they do the same, and explain to me, and I can work it out.
>
> Ursula (interview 1)

> …I had to know it in order to tell them in a way that they'd understand. … So in the long term, talking to someone else, explaining to someone else, helps in the long run. … I tended to [teach] people who were younger than me and wanted to do my subjects, because then I'd have to explain to them what we did, and then they'd have questions. ...
>
> Hannah (Interview 1)

Hannah's experience exemplifies the finding that the act of teaching another required the participant to view the subject holistically. In order to teach it to another, one had to understand sufficient detail oneself. Explaining a subject to someone else requires consideration of the core concepts of that subject, especially when explaining it to someone without a background in the subject area. Indeed, both at school and university, participants often preferred to explain their ideas to someone who was not a subject expert. The prime concern was having someone who was enthusiastic about the subject, and interested enough to follow the explanation, or someone who was willing and patient enough to continue to listen. Several participants joked that their boy/girlfriend was tired of listening to their explanations and descriptions of concepts, but continued to listen even despite this. Having a patient and tolerant listener was the primary concern, and was far more important than subject knowledge.

> I talk about it with my dad, because my dad is quite interested in history. I find that by speaking I learn it better. So when I write my revision notes, I speak them and my boyfriend just sits there and has to listen. So I'm just this happens, and this happens, and he's not interested at all. Because he's got a maths brain, my boyfriend, but he just listens because saying it kind of cements in my head.
>
> Penny (Interview 3)

Penny's experience was typical, that as the participants progressed from school to university, the role of this recipient of an explanation was primarily transferred to housemates or romantic partners of the participant. So this involvement of others in learning was not impaired by the generally limited social interactions that the participants (in particular the humanities students, discussed in section 6.5.4 below) had with peers on their courses.

In cases where an idea was being discussed, for example suggestions for an essay plan or discussion point, it was seen as being particularly useful to have someone who could confirm or challenge ideas.

> So if I gave [my friend] an essay to read, and if he'd say "What was that all about?" I'd know it was a problem, and would need revising.
>
> David (Interview 1)

> It helped solidify ideas. You find when people go along with your ideas or agree with you, it does help massively. You know that you're making sense, you're not talking rubbish.
>
> Kate (Interview 1)

This was not necessarily a course peer, but someone with particular specialist knowledge (for example, Emily's friend was top of the class for history, and so Emily trusted her judgement, and Bryn was friends with a woman who had a different subject background).

> So she would read through my essays and I would read through her essays, and she would sort of give me feedback, and ... it felt different to when a teacher would do it.
>
> Emily (Interview 1)

> …there's a girl in my flat who does, philosophy; so that's quite interesting to sort of give her ideas and she does the same about philosophical ideas. Because in English sometimes, you're criticising a piece of literature, you have to search through different sort of philosophical perspectives on the thing. So, it's quite interesting to ask her what she thinks of certain ideas in pieces of literature, and what she's learnt from her course.
>
> Bryn (Interview 2)

The informal involvement of others in the self-directed learning of the participants was one in which they self-regulated the interaction, and selected the other person for a particular need and with particular criteria. The SRL approach, therefore, involved the activity of others as an integral aspect of the learning process, and was important in verifying and reinforcing an individual's learning activity. The key factor here is that the participants had identified a specific individual who met those particular learning needs, which shows they were developing (or had developed) PLN.

6.4.2 The impact of pair-wise interactions

The combination of the CGTh coding (primarily the 'Study-groups/Partners' super-code) and the Situated Map shown in figure 6.4 highlighted that many significant learning relationships involved active interactions between individuals (domestic peers, course peers, friends, teachers, family). The most prevalent of these collaborative interactions cited by the participants (at both school and university) was the use of study pairs. Study pairs were not universally adopted by participants, but certainly utilised by a sizeable number of the participants, and they varied in their format. Some were active collaborative partnerships, where each partner gained from the interaction, such as Andrew's partnership with a housemate who was on the same course as he was, but studying different modules:

> So with proofreading and things, me and Arfon do things together, because it's just good to have someone else's eyes on things. To read someone else's work, it's really useful,

> with it being literature as well, the so many different ways to think about things. I definitely got more the advantage out of reading his, because sometimes I could see that I didn't include it as well as he did, or did things differently.
>
> Andrew (Interview 2)

Other pair interactions, such as the partnership between Emily and a school friend whom her parents invited to stay for an extended period, involved working independently in the same physical space, but not necessarily collaborating on learning and studying. The benefit of this interaction was one of mutual encouragement and support, each sharing ideas with the other.

> So I'd be on my bunk bed and she'd be on the floor, but we would discuss things when we weren't, and I think the discussion was like really, really good for the studying.
>
> Emily (Interview 1)

In several cases, such as Grace, Ffion, Lucy, Penny, and Tony, their romantic partner engaged closely with their studies, typically as a sounding-board for ideas and to assist in keeping them focused during studying. Others, such as Camille, who maintained a close friendship at university with a friend from school who shared some of her modules, maintained a relationship of moral support more than academic collaboration, with both partners being foreigners in a new country. Bryn, Penny, Hannah, Orla, Tony, Ursula, Will and Zach each had study partnerships at school, which were focused around mutual self-testing and checking factual recall. A particularly interesting example was David, who worked closely with a friend at school, to the extent that they perfectly complemented each other, compensating for each other's deficiencies, and creating a unified single entity between them.

> I'd find that we'd end up looking at each other's course work, saying you'd be good doing this, or changing that… We'd look at [essays] and give each other feedback … and because you knew it was from a friend, you take it as reliable criticism – it wouldn't be flour-coated. … I found my friend had a quite succinct way of writing, whereas I was quite loquacious by comparison. So I learnt maybe to use his stylistic features in my essays, whereas he might look at mine and use more jargon for things he was focusing on analysis of quotes. So we were almost developing one person who was good at literature.
>
> David (Interview 1)

This close interaction between pairs was a more intimate interaction than wider groups, and was based, usually, on reciprocity (either real or implied). The relationship was partly mutual moral support, and partly academic support and guidance. This idea of building a relationship through shared social capital was very common, where one individual would support another, and would be able to rely on support in return. The reciprocity meant that most participants had named individuals to whom they could turn for more than just answering incidental questions, a key feature of a PLN.

6.5 Construction and composition of Personal Learning Networks

6.5.1 Personal Learning Networks comprise of a range of elements

The outcomes of SA clearly identified that social networks around the participants were important in their experiences of transition to university. These social interactions, combined with interactions with learning and collaborative technologies, form the basis of a PLN (Richardson & Mancabelli, 2011). An axial coding approach using the category of 'Personal Learning Network' identified interactions that could be aligned with a model for the composition of a PLN proposed by Fair (2017) which based a PLN around elements of sociocultural theory proposed by Fenwick, Edwards, and Sawchuk (2011): human contacts, social groups, technologies, actions, and activities. Figure 6.6 maps the outcomes of this axial coding and elements of the situated map onto these five dimensions. This analysis highlights that the PLN is not purely a network of individuals, but also a network of groups, technologies, and the outcomes of key learning activities. The social interactions between individuals or groups are therefore only part of a PLN, but are a fundamental aspect of it.

Figure 6.6

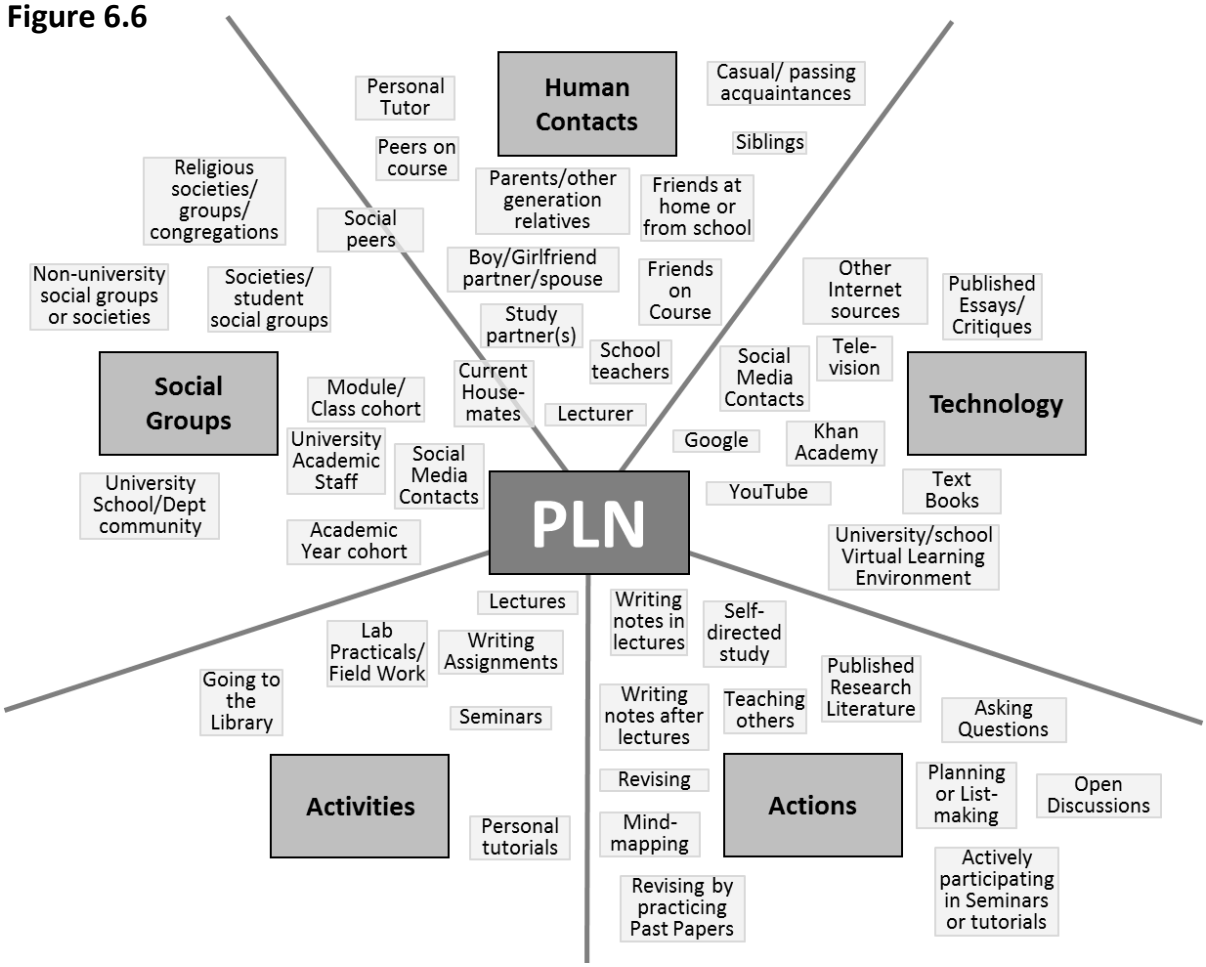

Figure 6.6 – Alignment of individual, social, activity-based and technology-based factors contributing to a PLN. Factors, identified from the situational map, were aligned to five dimensions of a PLN through axial coding. Each dimension identified by a light grey box.

6.5.2 Personal Learning Networks are formed and reformed through school and university

The interactions identified from the data so far in sections 6.2, 6.3 and 6.4 suggest that the participants are reshaping a PLN as they enter and progress through the first year of University. The identification of human and non-human elements in the situational map in Figure 6.4 that impact upon the participants' learning environment highlights that the participants have networks of connections with peers, family, friends, school teachers and university lecturers/tutors, as well as educational institutions and discourses, that support (or in some cases inhibit) learning. Human contacts and social groups overlapped to a great extent, and these interactions were mutualistic. For example, Kate's experience at school (discussed above) or Quentin's limited peer-interactions, which consisted of mutual peer-testing at school:

> It would tend to be reading through all our notes, and then occasionally testing each other, and reading it to each other occasionally. … We'd look at the notes and then pick out particular parts and then ask questions about it. So we'd pick out the bits we thought were important and then ask questions about it to see if we knew it.
>
> Quentin (Interview 1)

When Quentin began at University, he no longer had this PLN, and realised that he needed to build a new one. Will also had a group of peers whom he would meet before school, arriving up to an hour before school started (although Will admitted that some of this time was spent being social rather than studying). At university, this PLN was no longer there. However, Will was a sociable character and a sportsman, and so quickly developed a group of new friends, and a new PLN at University. Will's experience differed from the others, as he played for the Chemistry rugby team, and so mingled socially with Chemistry students from other years. This enabled him to ask/receive advice from more-senior peers from his course, which he found beneficial, showing the potential of a functioning PLN.

The need to re-develop the PLN when the participant moved to University was therefore a key challenge. It was common for participants to maintain some connection with the human actants in their former PLN (friends, and sometimes teachers). For example, Camille formed a close connection with a friend from school who was also on her course. Emily had an elder brother in a senior year of her degree course, from whom she sometimes sought advice. Penny had a cousin at the University and maintained contact with three close friends at home. Kate maintained links with her very close PLN from school. Family, romantic partners, and close friends remained in most participants' PLN. By the end of the year, the PLNs had not only changed from school, but also changed during the year, as friendship groups changed over time as new acquaintances were made, and friendships evolved.

The principle factor in how the PLN developed, therefore, was the social group aspect, with social groups changing in character and impact on the student. Both Grace and Jane, for example, deliberately moved away from peers that they felt were engaging in destructive behaviour, such as

drug use. Mary, Raashid and Emily developed new peer groups as they explored new religious congregations in the local area, and Nick moved from living away from the university, to a shared house in the city at the end of the year. PLNs therefore appeared to continually evolve and develop, in response to need and circumstance. Other PLNs changed little during the course of the Year: Bryn maintained the same close group of Welsh-speaking peers, and Zach's PLN of fellow chemistry students (who were also domestic peers) was established very early on, and set to persist into Year 2 through sharing a rented house together.

Activities and actions were also typically collaborative, such as going to the library, or working in a communal space. Peer-testing or reading each others work was also relatively common. The main focus for activities, though, was predictably structured class activities such as seminars, lectures, laboratory practical classes and tutorials, which was much the same as the activities undertaken in school. So a major change in the PLN as it adapted from school to university was the social contacts and groups. Identifying the most impactful group on the PLN, which provides the strongest educational or social support or the most effective beneficial influence, is therefore of considerable importance.

6.5.3 The Personal Learning Networks made limited use of technology

Technologies used for PLNs were either communication platforms (text messages, Snapchat and Skype), group chats on Web 2.0 collaborative technologies (Facebook and WhasApp), or websites and video sites (YouTube and Khan Academy). Tony's peer-support community based on the WhatsApp messaging application was used to organise work, and ask peers for help understanding concepts. Zach and Vic also reported the receiving of 'messages', which implied the use of a communication technology (although the identity of the medium was not asked). Mary and Simon gave examples of using technology at school to support peer interactions with a friend who lived too far away to meet in person regularly:

> We did a lot of one-on-one. Like, we'd sit on Skype and just throw each other questions. Because she lived in [town], which is, like, an hour down the train line! So, we would kind of throw each other questions and talk that way.
>
> Mary (Interview 1)

> Then if there are any questions … you'd just battle it out with the teacher. Sometimes, I'd Snapchat or message [my friend] if I had any questions, and sometimes we'd tell each other complete nonsense, but at least we agreed on it!
>
> Simon (Interview 1)

There was a Facebook group chat for each of the English and History degrees, however use of this for supporting learning was limited. Only Nick, Andrew, Ffion, Mary and Kate referred to this platform, and engagement with it was limited. Nick avoided the platform because he was uncomfortable with the technology.

> I know there are Facebook groups and that sort of thing, where people are talking to each other but I'm not very technologically advanced … I don't bother with those so much!
>
> Nick (Interview 1)

> I know there's a Facebook group set up, and people talk about the seminars and that sort of thing on there, but I don't tend to use that
>
> Nick (Interview 3)

The English student group chat on Facebook did seem to be effective in enabling students to ask questions, but these questions were primarily functional in nature, ether asking questions about assignment guidelines, or general questions. It is notable that the use of the group chat to ask questions was seen as useful, and Andrew, Kate and Ffion engaged in that activity, but conversely that the group chat was focused on non-academic social matters, or of primary use to those students who did not engage properly with the course.

> Well there's a literature group chat, the pretty much everyone adds anyone else on there. It's mostly rubbish, but there's a second one with out the people that post stuff on the first one. So there's one for conversations, "Oh who's going where tonight?" and things, and then there's one for asking questions and giving people help.
>
> Andrew (Interview 3)

> I'm in, like, a big, huge group chat on Facebook with, like, 150 kids from year one of English literature; so, there's that. And it's always it's always, like, when is this due in or when is that due in? It's for it's basically for the for the people that don't show up I think. But I'm I'm always trying to help people, like, telling them, like, what it they're always asking; like, are we what goes on in this exam?
>
> Ffion (Interview 3)

Kate was particularly disparaging about the Facebook group, but did point out that there was a strong mutually-supportive community established, with clear features of a PLN empowering peers to support each other's learning, and involving bidirectional support..

> We have got a literature group chat on Facebook for our year, and honestly it is the most chaotic thing I have ever seen. We are actually quite good at helping, and if someone needs something, fifty people will get back to you and give you the information. … I have

> now muted it because they are having discussions about Doctor Who at 3 in the morning and you are just like, "I can't cope with that."
>
> Kate (Interview 2)

There was only one example of a collaborative technology having a deeper impact on learning beyond asking and answering logistical questions. Mary recounted an experience where her use of Facebook to share an idea prompted a discussion, which had the effect of reinforcing the information in her memory.

> I opened Facebook to the group chat and I was, "Guys, my lecturer is awesome, it's Trump. It's... it's, politics - it's great. And then he ended the lecture with this vase, which has (as a lot of classical things do) some very sexual images on them". And I just posted it into the group chat and when I got home, they were all, "Mary, what the hell was that?" So, I got to explain to them, the whole meaning and the whole, like historical background behind it. And I think that means that I'll definitely remember that section now, of history
>
> Mary (Interview 2)

Technology was also commonly used as a resource for information gathering, especially video-related sources such as television, YouTube and Khan Academy. The use of technology was either for reinforcement of learning, or supporting the initial stages of understanding (before developing it further from books). At school, Mary and her friend adopted video technology for a particular form of reinforcement,

> We did actually film a load of, (with one of our other friends) film a load of, like, YouTube style videos which we never put up. But, they were kind of, "The Mycenaeans' - in 120 seconds, like, here's everything you need to know!"
>
> Mary (Interview 1)

Technology had significant potential to support learning, however, its use was limited, and when used it was primarily either a source for information or a source for asking and answering questions. There was the potential to build social and digital capital through this interaction, but the technologies were not used to support collaborative learning activities or theoretical discussions and debates. This finding aligns with previous work to suggest that students do not recognise the potential positive impact of collaborative technologies on their learning (Rutherford & Standley, 2016).

6.5.4 Comparative roles of domestic vs academic peers in the Personal Learning Networks

A major outcome from the CGTh and map analysis was that participants – especially in the humanities – involved domestic peers more in their PLN than peers on their course. This is potentially surprising, as one might expect the contribution to learning made by non-discipline peers to be minimal. The role of domestic peers, however, was quite complex, but formed fundamental features of the PLN.

> Because I am the only English student in my flat, everyone asks me to proof read things. So that's been quite useful then. And one of my flatmates is doing history, and she has an option of doing an English module … So she's been studying this play, and so I can help give her some context.
>
> Hannah (Interview 2)

Hannah's experience was typical, and showed that she experienced being part of an academic support network with her housemates. Domestic peers often spoke of their involvement in academic support. This support was usually not reliant on their being in a similar discipline. Indeed, in most cases the participants were housed with peers from other disciplines, and found this to be beneficial in developing a support network. They quickly formed mutualistic academic relationships as a group, with each individual playing to their strengths within that community. Individuals within this peer group would each contribute according to their discipline. For example, English Literature students typically acting as proof-readers for their friends, science and mathematics students supporting in technical ways and with numeracy. For example, Hannah described her role in this peer-support network and could clearly see the potential benefit of this diverse community:

> I think having people doing different courses in the study group is beneficial, because we tend to sit in our kitchen area and we all do our work collectively in there, and even though we may not know fully what's going on, it's nice to ask a question and they'd be like, "oh, you can do it this way or that way". Even though it is different subjects, a lot of the essay approaches are much the same.
>
> Hannah (Interview 2)

The polyglot nature of the peer group was clearly seen as a positive factor for Hannah, especially as she perceived that the fundamental skill of essay writing was transferrable between disciplines. The lack of specialist knowledge in the PLN was never seen as a limitation. Several participants would use their domestic peers as sounding boards for academic ideas, for sense-checking concepts, or reading-over drafts of work. These mutualistic communities blur the lines between social and academic arenas, which is unsurprising for individuals who are lodged together for the purposes of attending an academic institution. The one common factor between all of the domestic peers was that they

were all Year 1 students, and this common experience was important in their identity development and perception of their role within the institution, as Mary pointed out:

> …it took me a very long time to get friends at high school, and so being forced to live with people, especially people I might not have talked to normally, or have any connection with. Like I wouldn't have interacted socially. So I'm living with maths and science students, so I wouldn't have talked to them in my lectures, and only have communication with them in societies and things, so I wouldn't have known them through that. But they are really nice people, and because I've been forced to live with them, I think I've got a better bond with them than any friend I may have known for a year.
>
> Mary (Interview 3)

In some cases the extended social groups due to mutual interests replaced those of the domestic peers. For example, Mary, Emily and Raashid each had strong connections with members of their religious congregations. Bryn had close links with the Welsh-speaking community in the University. Some participants (such as Will, Lucy, Vic, Zach and Tony) had links with student societies, although these interactions tended to focus more on personal support (such as encouragement, supporting morale or other emotional support) than academic.

The domestic peer group sometimes changed over the course of the academic year, either by the participant growing personally or emotionally, and gaining new interests or meeting new people, or by their expectations of what they wanted from a peer group changing. This renegotiation of friendship groups did not appear to have had a significant negative impact on the peer-support role of the social group. In fact whenever the change of groups was noted, it was typically a refinement for the better, and the removal of individuals from the peer group whom the participant felt were inhibiting progress or causing a challenging environment. Jane distanced herself from a particular group of friends that she felt were impacting negatively on her, both emotionally and academically, by their wild behaviour. Zach deliberately removed himself from a circle of friends whose socialising he felt was distracting him from his studies.

Few participants made many acquaintances on their course, and those that did were primarily the Chemistry students. The fundamental issue appears to be whether the students were placed in academic situations that required close interaction. The Chemistry students each worked in pairs or threes in their laboratory practical classes – often with the same individuals week after week. These pairings were typically random at first (either faces they recognised from early lectures or briefing sessions, or chance meetings whilst looking for a partner), but soon became more regular collaborations. It was still uncommon for these interactions to proceed outside of the classroom.

6.5.5 Impact of personality-related factors on the formation of a PLN

A key impact on the formation of a PLN was the personal disposition of the learner. While personality types were not measured in any quantitative way, it was possible to participants did refer to their own personal characteristics as affecting their interactions with others. Camille, Raashid, and Ffion noted being very shy, and therefore more reluctant to engage with others. Their PLNs consisted of one or two close friends at most. For example, Camille discussed how she did not really form a network with her university housemates, compared to the close relationship she had with her sister when they lived together in an apartment while at school.

> It's just very different, in the sense that there are so many people that we have to live with. And I knew my sister very well and I don't know these people very well. So it's very different in that sense, because we come and go and we don't really talk that much.
>
> Camille (Interview 2)

Camille's only real contact regarding university study was a school friend who happened to also be studying Journalism at the university, and shared some modules with Camille. Zach, Grace, Hannah and Bryn were confident engaging with others, and so had more-extensive PLNs that formed more easily. Bryn was confident enough socially to ask the people around him for their ideas, something which Camille would not have been comfortable doing.

> You read something that was really interesting and you go to someone and say I think you talked about this the other day, there's something you might have studied in A-levels about this, can you just give me a bit of an insight into what people think about it, and whether people think about things in the same way. So when you get an idea of things from different perspectives, it's easier to visualise both from your own perspective because you get deeper insight into what the subject is about, and from another person's perspective as well which is always a good thing.
>
> Bryn (Interview 3)

Hannah had a similar experience of getting to know people by actively talking to them, something she was very comfortable doing - Hannah described herself in the first interview as being "outgoing".

> So in the seminar groups, if the group is really chatty, then I'm more friendly with the people in that group. … I got to know a variety of people who also do things like journalism, history, German and things. So there's always someone I can go for advice to if I don't understand something. So if it's something historical, I go to a friend who does history. So everyone tends to bond on asking what they're doing, because they have no idea. So if we collaborate and discuss what we are doing, we tend to get the general idea.
>
> Hannah (Interview 2)

The positive impact of communicating with others on Bryn and Hannah's learning was clear from their perspectives. It enabled them to form a wide network of diverse peers, with a range of expertise, to whom they could turn for help. However, this level of collaboration required them to be proactive and make the initial social contact. This would probably have been harder for someone who was more shy, or introverted.

In some cases, the participant's personality inhibited the development of a PLN. Kate's personality was confident and independent, which correlated with her scepticism of peer-based learning. Kate did not feel that she needed to go to others for help. Similarly, Tony, who was confident and outgoing as a person, felt that gregarious nature was a hindrance to his learning when in group situations, as he would be distracted by others.

> I still don't really involve any other people. Like my mates will go over going to revise this … thing, but I try and avoid that. I don't really do much work, it's too distracting. I don't mind being around other people when I'm not talking to them what chatting to them, but I do end up just relaxing and not focusing, and then it's just wasted revision time to me.
>
> Tony (Interview 3)

Grace and Mary, who were passionate about their subject and enjoyed having discussions had more interactions with disciplinary peers than many of their colleagues. Zach, Grace and Vic were readily willing to share their expertise and knowledge, even if it did not benefit themselves directly, whereas others were less altruistic and/or concerned of peers stealing their ideas. Personal preferences, based on reflection of one's own personality traits, define social relationships, and therefore would have a significant, but highly personalised, impact on the establishment, scope, and use of PLNs.

6.5.6 Institutional barriers to involvement of peers in learning activities

Even those who were not opposed to the idea of involving course-peers still typically did not do so, citing lack of time, poor time-management, or simply a preference not to. Most did not see this lack of interaction as a limiting factor or a restriction to their studying, despite recognising the potential impact of collaborative discussions for their studying. One of the primary reasons for a lack of collaborative or peer-supported activity at University for many participants was the structure of the degree course itself, and the teaching methods used within it. This was most prevalent in the English and History students, whose courses were predominantly lecture and seminar-based. The lack of pair-based activities that were common in the Chemistry students (working in laboratory practical classes or tutorials in pairs was common for these students) meant that the humanities students did not have the same opportunities to work closely with fellows on their course. Even seminar sessions were

larger groups than was conducive to forming networks, and only Hannah found them to be an avenue for making friends on the course.

> I think it offers a lot of opportunity to make friends. The lectures are quite static, but the seminars tend to be a lot more relaxed, which is quite nice. We get to chat to people on the course, so that's really good.
>
> Hannah (Interview 2)

Therefore most of the humanities students (Bryn and Hannah being the only exceptions) reported not being close to anyone on their course unless they happened to cohabit with them in halls of residence. For example, Jane's experience of not making friends on the course, even by the end of the year:

> I don't have any friends on my course. I just didn't really meet anyone, and then everyone lives in [hall of residence], and I don't. So, I don't really know anyone in my course.
>
> Jane (Interview 3)

As a result, participants in the humanities, even participants who were confident in their studies, and felt they had well-informed opinions, such as Kate, Lucy, Hannah, Penny or Mary, felt disengaged from the group dynamic, and reported being reluctant to speak out in class, preferring the shield of anonymity.

A particular issue for participants studying English was the requirement to show originality in their work. The imperative to present innovative and original ideas inadvertently discouraged collaborative activity. Participants studying humanities frequently reported that they actively avoided collaborative activities or sharing ideas in seminars for this reason. Even though they knew that sharing ideas was a core activity in a seminar setting. Kate emphasised this conflict of interest:.

> There have been times when I have written something in a fictional piece and then the next week a lot of other people have applied that technique. So … you don't really know what you can and can't say, because the next thing you know someone has stolen your idea and you have plagiarised an essay that you didn't know existed.
>
> Kate (Interview 2)

This factor was an overriding concern for many, and was further reinforced by the proactive stance of their academic Schools on discouraging plagiarism and collusion. Many of the participants avoided collaborative discussions and working for this very reason, having a palpable fear of being accused of collusion or copying other people's ideas. Conversely, there was an equal reticence of sharing what they perceived as good or innovative ideas with others, who might then 'steal' that idea and present it as their own. This latter concern was more prevalent and was a fundamental driver for the actions

of many participants in avoiding collaborative activities. Whether this impression was intentional on the part of the academic School, or not, its impact on developing an effective PLN was significant. This attitude is anathema to the aims of a seminar-based curriculum, and participants reported that seminars were often viewed as stilted or ineffective as a result of people's unwillingness to reveal their original ideas for fear of them being stolen. This experience illustrates how the limited interaction at the level of the discipline can have a significant impact on the development of an effective PLN. The fear of being the victim of, or accused of, plagiarism was a significant factor for these students, and detracted from their embedding effectively in the academic life of their discipline.

6.6 Conclusions

6.6.1 Peer interactions are fundamental to the development of SRL strategies

This analysis suggests that, far from being a solitary activity, self-regulated learning is (to a varying extent, depending on the situation and personal preference) a social activity – or at least an activity which involves the influence of others. None of the participants was entirely self-contained in their learning activities, even outside of class, and all involved others in either the acquisition/reinforcement of knowledge, verification of understanding, shaping of ideas and opinions, or persistence of study and study strategies. An additional three themes are of particular significance from the analysis, and have potential impact for the development of individuals' SRL: firstly, true collaborative learning is relatively rare; secondly, PLNs develop over time, and are reciprocal arrangements within learning or social communities; finally, during the first year of the degree, social peers are of more significance to PLNs than discipline-specific peers.

The absence of true collaborative learning activities, where learners work together to develop a shared understanding, is potentially surprising considering the large body of evidence supporting its benefits (Dillenbourg, 1999). However, despite the evidence of its effectiveness, collaborative learning was largely shunned by the participants. This reticence to collaborate was discipline specific, with humanities students (especially English students) being more reticent to study together, largely for fear of either being plagiarised, or accidentally plagiarising another. This is a potentially limiting concern, especially in year 1 students, as discussion of ideas, challenging opinions, and developing robust points of view are the cornerstone of discursive humanities subjects such as English and History. It is possible that this overriding concern is being counter-productive. However, even in the Chemistry students, collaboration was rare in student-led study outside of the classroom, due largely to each individual having their own preferred style and methodologies for learning. Collaborative learning was perceived as requiring compromise between the participant and the peer, either in

terms of the subject they wished to study, how they should study it, the speed at which each person worked, or their desired outcomes. As discussed in Chapter 5, the participants already had deeply-embedded self-regulated learning strategies, and so adapting or changing these was seen as anathema to most, and those that attempted it soon abandoned the enterprise. This reticence to collaborate was seen even in individuals such as Kate, Mary and Vic, who had collaborated with others at school, but who avoided the involvement of others in their learning at university.

However, when collaboration was handled on the participant's own terms, then it was typically seen as beneficial – either sharing ideas, asking/replying to questions, or moral support keeping each other motivated. There is a fine line between peer-support of learning and collaborative learning, across which few participants ventured. The key factor seems to be the integration of others into the individual's PLN, rather than an active collaborative learning strategy. The nature of the interactions with others being peer-support interactions – encouragement, maintenance of focus, asking/answering questions, verification of understanding and sharing/refining of ideas, was more in keeping with populating key requirements of a network, than developing discipline-focused or active learning communities. The focus was therefore more in terms of supporting learning and making the process easier, rather than immersing one's self in the CoP of the discipline. Similarly, Web 2.0 collaborative technologies, if used at all, were primarily utilised as a means to ask and answer specific questions. Participants who reported using these platforms were very happy to answer questions as well as ask them, but they were not used as platforms for academic debate and the reinforcing of concepts through discussion. Technology was therefore a mediator of communication rather than collaborative learning and developing shared understandings.

A fundamental issue was that the very structure and ethos of the University – as perceived by the participants, actively discouraged collaborative endeavours. Communal activity in lectures was discouraged, and opportunities for social interaction were negligible outside of taught activities. This structural limitation was most keenly felt in the humanities subjects, where the students had little or no opportunity to develop social links with their course-mates. In courses where contact time was low, oftentimes the participants were not required to be on campus; and when they were, they would attend their lecture or seminar, and then typically return home. Even in seminar groups (which were supposed to stimulate discussion and interaction (Broady, 1986) participants were reluctant or unwilling to speak out. As a consequence, unless they happened already to know someone on a course, the humanities students formed very few friendships within their disciplines. Friendships or associations, when made, were typically serendipitous – a person one sat next to in a class, or someone you recognised form a society, sports team, or hall of residence. Nick and Ffion (who lived at home) were still further limited in the opportunity to forge contacts, and their PLNs therefore consisted primarily of family members and a small number of peers on their course (Nick had three close friends on his course, Ffion only one). As a result, for the majority of participants, the key players

in the PLN were domestic peers rather than disciplinary peers. Up to a point constituting the PLN with non-discipline peers was not limiting, as the constitution of the PLN was itself highly fragmented and strategic in nature. A diversity of experiences would therefore be beneficial to such a disparate PLN, which was focused more on skills development and immediacy (i.e. the need for someone to proof read work, help solve a specific problem, or answer a specific question), rather than immersion in a discipline. The extent to which such a diverse PLN is beneficial or limiting in later stages of the degree, as the need for disciplinary support increases, would be interesting to follow. It could be that the PLN reconstitutes itself in order to adapt to the participant's needs. However, it is also possible that the PLN will not be able to adapt, and may become a limiting factor, whereas a PLN that was more discipline-focused earlier might subsequently be more robust.

6.6.2 A putative model for reconstituting Personal Learning Networks during the transition to University

During the course of the first year, the participants appeared to reshape their PLN. In most cases the PLN had already been defined during their school experiences, with peer groups, family contacts and school teachers playing major roles. A putative model for the establishment of a PLN at University is proposed in figure 6.7, which integrates key factors that were highlighted in the data. This model is based on the observations in the study, but is currently highly speculative and requires further investigation, testing, and validation. The tentative model proposes that there are several core aspects that impact upon the rate of development of a PLN, its breadth and scope, and the potential educational impact of the PLN on the student.

In the process of establishing the PLN, a central requirement appears to be establishing a network of peers and social contacts who can potentially support the individual and their learning. These peers largely fall into two groups: Social peers (flatmates, partners, friends in social organisations) and academic (discipline-specific) peers. On occasion there are individuals who occupy both of these groups, and learning activities within the course might facilitate this (e.g. requirement to work in small groups, on collaborative projects, or interact informally within or outside of taught class sessions), although most often for the participants the course did not support collaboration. Another factor impacting upon the rate of establishing a PLN, and the extent to which the PLN is broad or restricted, is personality-related factors and drivers underpinning the student. Although no quantitative personality test was undertaken, the personal influences, motivations and drivers of several participants were implied by the narratives provided in the course of their interviews. The degree to which the participants exhibited self-confidence, or ease of making friends, did appear to impact on their willingness or ability to establish academic contacts (for example, Bryn, Tony, Hannah and Grace were all confident and displayed traits of extroversion, and formed PLNs readily.

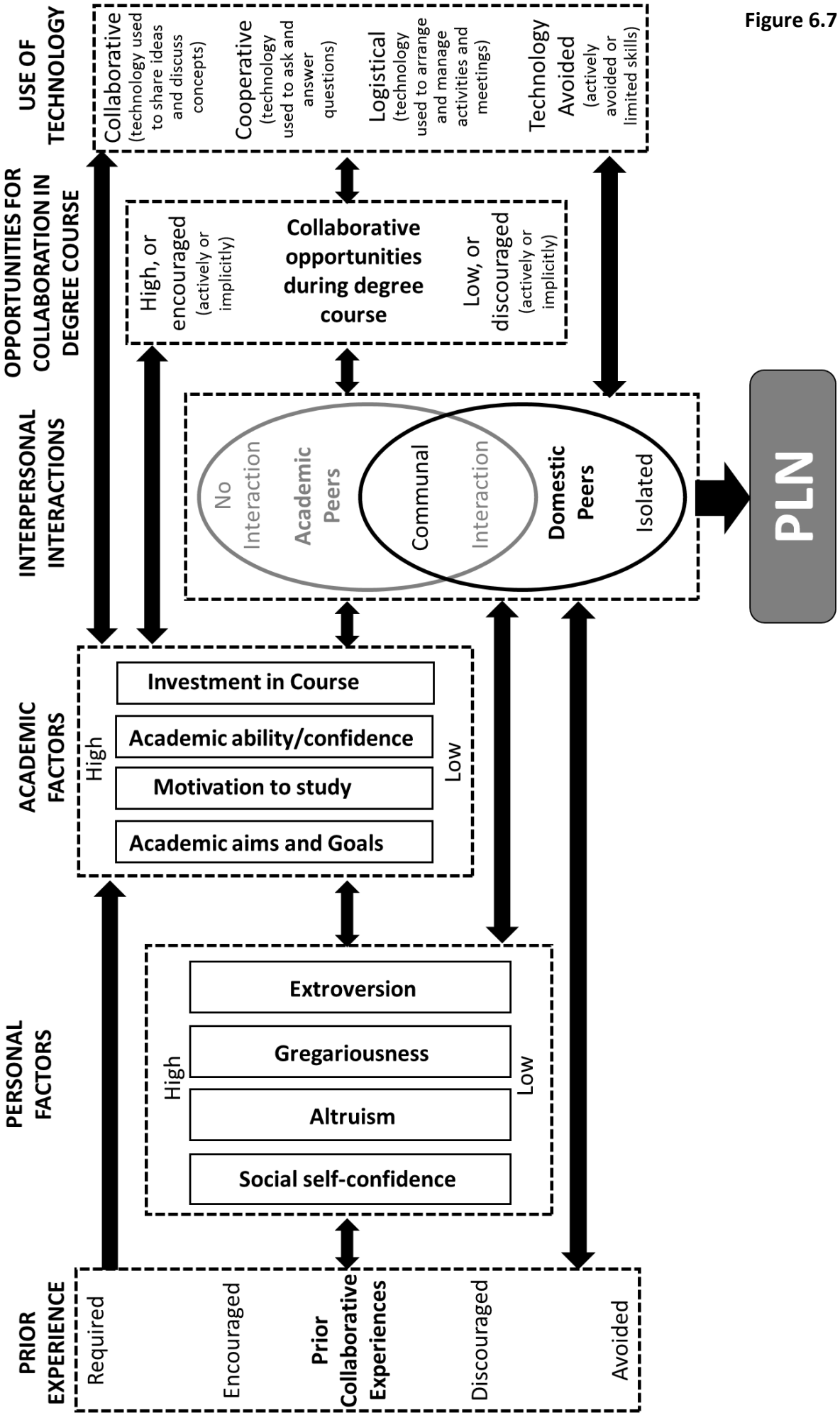
USE OF TECHNOLOGY
Collaborative (technology used to share ideas and discuss concepts)
Cooperative (technology used to ask and answer questions)
Logistical (technology used to arrange and manage activities and meetings)
Technology Avoided (actively avoided or limited skills)
OPPORTUNITIES FOR COLLABORATION IN DEGREE COURSE
High, or encouraged (actively or implicitly)
Collaborative opportunities during degree course
Low, or discouraged (actively or implicitly)
INTERPERSONAL INTERACTIONS
No Interaction
Academic Peers
Communal
Interaction
Domestic Peers
Isolated
PLN
ACADEMIC FACTORS
High
Low
Investment in Course
Academic ability/confidence
Motivation to study
Academic aims and Goals
PERSONAL FACTORS
High
Low
Extroversion
Gregariousness
Altruism
Social self-confidence
PRIOR EXPERIENCE
Required
Encouraged
Prior Collaborative Experiences
Discouraged
Avoided

Figure 6.7

Figure 6.7 – Putative model for PLN development (previous page). This model illustrates collections (dotted line boxes) of key factors (solid line boxes) which interact to influence development of the PLN (interactions shown by black arrows). Factors are: Prior experience; personal factors; academic factors; interpersonal interactions; and structural opportunities of the current degree course.

Conversely, Camille, Raashid, Ffion and Quentin, who reported being less-gregarious by nature, developed PLNs that focused more around their family or a very small number of close friends. Similarly, the extent to which the participant displayed altruistic tendencies (such as Zach offering his support to struggling fellow students, or Kate observing that some peers seemed to 'steal' other peoples' ideas n seminars) also has a strong potential impact on the scope and impact of a PLN.

Technology also has the potential to support the development of the PLN, but the way it is used, and the degree to which it is engaged-with are key issues. Technology has the potential to be used either for collaborative learning and the creation of shared understandings, cooperative activity (asking and answering questions), logistical management (scheduling meetings, arranging group work) or avoided altogether (either because its use is perceived as limited or the learner does not have the digital literacies to support its use).

The need or opportunity for collaborative experiences in their prior learning environment (e.g. school) also has a strong potential impact. A learner with low academic attainment may rely on a PLN more than one with higher attainment. Conversely, reliance on the PLN might be seen in high-attainment learners who are experiencing a lack of support from the educational institution. Kate's school experience is an example of this. Kate was an individual with high levels of ability and attainment, who nevertheless engaged fully in a PLN due to the need for the peer group to self-teach themselves. At university, the lack of challenge on Kate's degree course, and her relative disengagement from it, meant that the PLN that Kate developed at university was limited and not as intimate and functional as her PLN in school, despite her understanding the value of such peer-support networks from personal experience.

The proposed model aims to highlight that the establishment of a PLN is not straightforward, and involves several interacting factors, which will vary in their significance between individual students. The PLN is therefore a highly-bespoke construct, unique to each learner. This model aligns with Tinto's models of student social engagement (Tinto, 1975; 1988) which also suggests that there are numerous interacting factors that impact upon the student. However, with the formation of a PLN, the engagement with the academic and social cultures of the institution are potentially only minor factors within the process of PLN formation. It is possible that the establishment of a robust PLN could

also influence the engagement (and persistence) of the learner in Tinto's models. The data presented in this chapter suggest that social support of learning is important to the experience of the learner, their successful SRL, and persistence within the university environment. More analysis is required to confirm or revise the details of this putative model, but its aim is to highlight that there are various interacting and interconnected factors that drive the development of the PLN, some of which are positive, and some deleterious to the process.

Given the potential significance of the PLN, and the factors associated with its development, a significant implication for practice from this analysis is that institutions may need to structure their courses to facilitate the development and establishment of PLNs. Key to this might be two approaches. Firstly, encouraging students to make social contacts with peers on their course (perhaps by designing social activities, or learning activities that involve students working in small groups). Secondly, establishment of the PLN might be aided by facilitating student engagement with the culture of their discipline through small group tutorials, working with a mentor or personal tutor, or encouraging students to discuss their views of the discipline in small groups. Encouraging students to reflect on their PLN – how it is populated, by whom, what activities and technologies are important to it, and what external factors influence it – might be of potential benefit in transition activities at the start of each academic year, in order to encourage students to reflect on where they gain their most effective learning support.

Chapter 7

LEARNING THE 'RULES OF THE GAME': ADAPTING TO UNIVERSITY LIFE AND GAINING ENTRY TO 'THE ACADEMY'

7.0 Introduction and context of the analysis

Social groups may be defined by their conventions (Lenning et al., 2013; West & Williams, 2017).With any community of individuals, there is the need to understand the conventions and expectations, or 'rules' of that community. Gaining meaningful entry to the world of academia, 'The Academy' (see section 2.1.1), involves learning the rules for university life. This chapter will discuss and evaluate the key factors that impacted on the participants as they embedded themselves within the university community. These factors align strongly with two research questions of the project: 'Investigating the students' perceptions of university learning'; and 'social/environmental factors that influence the development of SRL'. The evidence discussed in this chapter will suggest that the participants needed to understand the rules of several social arenas as they progressed through their first year of study, to support their integration into the academy and the culture of the university.

7.1 Overview of the super-codes and categories

A range of codes and super-codes emerged from the data that related to the participants' enculturation within the university community. These codes were grouped into three relevant categories (summarised in Figure 7.1): Categories related to learning the conventions of university life; specific barriers preventing learning these conventions; and the impact of personal development (learning new study skills, developing existing transferrable skills, developing social skills and increase in self-confidence) in the transition to university.

A common feature shared by the participants was the rapidity with which they developed coping strategies and adjusted to their new physical and social environment. The key to this rapid acclimatisation seemed to be the involvement of others. In the first round of interviews there was a common theme that the participants realised that all their peers were in the same situation, and therefore could learn from, and support, each other. The importance of social groups in this acclimation process suggested that the Social Worlds/Arenas mapping process would be a valuable analytical tool.

Figure 7.1

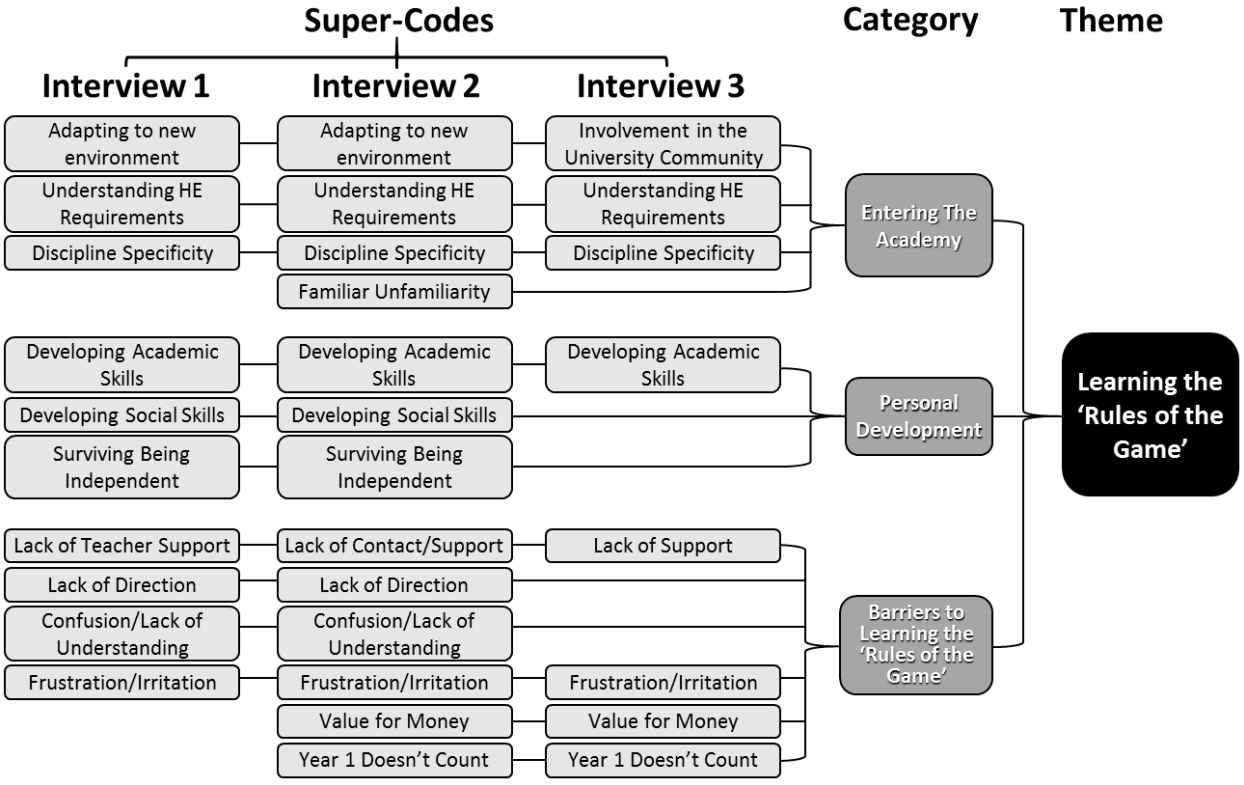

Figure 7.1 – Summary of the super-codes and categories the 'Learning the rules of the Game' theme. Identification of the super-codes determined from the CGTh analysis of each interview cycle, showing the categories into which they were consolidated. Super-codes (light grey boxes) are aligned with cognate Categories (dark grey boxes), which are combined to make the Theme. Lines show clustering of super-codes into categories, and categories into the theme.

7.2 Becoming an independent individual

One of the key challenges to transition to university is for students to operate as independent people outside of the home environment (Tinto, 1975). Being an independent adult was the first social arena to which the participants needed to adapt. Everyday administrative tasks, such as shopping, cooking, cleaning, or managing finances, are novel experiences for many who previously lived in a supportive family environment. This was certainly a factor in the transition process for participants in this study.

> The transition of having to do everything yourself more. … You have to ask for help, you don't just get given it. And doing my shopping, doing my laundry, and all that, was a bit of a shock
>
> Penny (Interview 3)

This attempt to master the logistics of independent living was common across the vast majority of participants, as all but two of the participants (Ffion and Nick, who still lived at home) were living in University accommodation. The mutual support of a group who shared the common aim of learning to live independently was key to mediating the change successfully. Figure 7.2 illustrates a map of the social worlds which link the two social arenas of dependent (reliant on others for guiding or performing everyday tasks) and independent living (performing everyday tasks oneself).

Figure 7.2

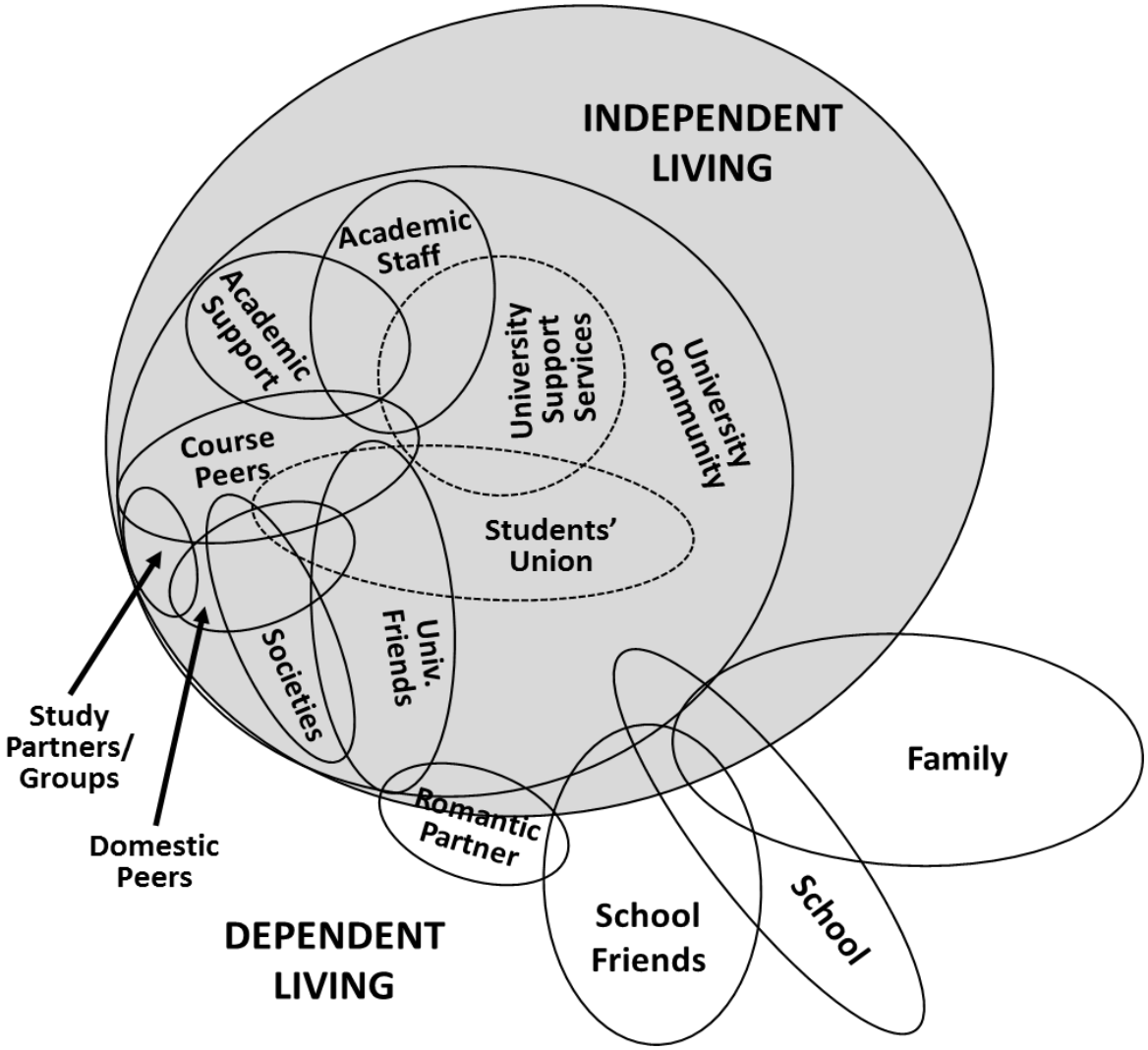

Figure 7.2 – Social Worlds/Arenas Map of independent living at university. Social Arenas are indicated by capital letters, social worlds by circles and elipses labelled with lowercase letters. Degree of overlap shows the extent of interaction between social worlds and arenas, or between social worlds and other social worlds. Use of dotted lines indicates social worlds not mentioned in interviews. Shading is used to highlight the contrast between the Dependent and Independent Social Arenas.

The social worlds situated most in the dependent living arena were the pre-university worlds, such as family, friends, and school. These did have some impact on the independent arena, for example families would often require the participants to take responsibility for themselves and others. Emily was expected to supervise her younger brother, while Camille and her younger sister had lived together in an apartment away from home, while she was at school. Similarly, the family and school helped prepare students for independent living at university, and so touched on the university community social world.

The university community social world included domestic and course peers, as well as social friends from university and student societies/community groups. Although these groups were, by default, communal, they did provide the participants with insights into the process of independent living by observing others and being offered advice and support. The university support services, personal tutor support, and guidance from lecturing staff, were all potential drivers for negotiating independent living; however they were not reported by the participants (hence they are delineated by dotted lines in Figure 7.2). The general lack of use of professional support networks suggests that the transition to independence was not problematic for the participants in this study who completed the academic year.

The transition to independence was easier for Will, Raashid, Jane and Ffion, who had each taken a year before coming to the University. Will, who had taken a year to go travelling, noted that those who had not taken a gap year seemed to be less independent.

> You can definitely see the people who are fresh out of 6th Form. You can see the people who have had a year out. When you talk to them, there's a level of maturity there.
>
> Will (Interview 1)

The key to independence seemed to be aligned to the time spent separated from the family environment. However, to Ffion and Nick, who lived at home, a more significant issue to address was the time taken up each day with a train or bus commute (a particular problem for Ffion, whose spare time was limited due to having a young child; see Table 3.1, p.43). In each case these participants developed strategies for managing their time, and making effective use of the commute, a form of adaptation to independence. So perhaps the challenge is more to do with taking the participant out of their comfort zone, than the domestic environment.

An example of taking an individual out of their comfort zone was placing them in an unfamiliar social context (see Table 3.1, p.43). Camille, Grace, Raashid and Zach needed to also adapt to living in a foreign country. Bryn, Camille and Raashid were not studying in their first language. Bryn, Emily, Orla and Ursula moved from small rural community settings to a city-based University. For these students, the cultural adaptation was a further challenge to living independently. The overseas participants, or second-language participants, each found communities into which they integrated: Raashid with a

supportive religious community; Bryn with the Welsh-speaking community at the university; and Camille with a friend from her school in France, who was on the same course.

> I chat to people in seminars and lectures, but I've concentrated mostly on outside the course itself because mostly I've been hanging around my flatmates and the Welsh society, rather than people on my course.
>
> Bryn (Interview 3)

By the end of the year, once new social groups had been defined and stabilised, the participants were universally confident at living independently. Participants typically found the experience of living independently of the family environment to be an improvement on their previous social situation. For example, Zach found the close-knit community of his housemates to benefit his wellbeing:

> It was challenging. Different social interactions between living with six other people my age, is very different to living where I was before. … you can just walk into the room and lie on their bed and just talk for three hours, then go back to your room.
>
> Zach (Interview 1)

While the transition to being an independent adult may appear trivial, it is particularly relevant to the development of SRL. While the participants were developing these coping strategies for living independently, and developing new social groups, their attention was diverted from study.

> I'm just socially overwhelmed. ... Moving to a new city, making new friends, settling in. Just like surviving, really. I spend so much time cooking, washing, just doing things, but I'm not spending so much time on studying.
>
> Grace (Interview 1)

So at the very point where the participants were most keen to learn new material and experience the subject they had chosen to study, they also needed to cope with everyday logistics. Reshaping their SRL strategies needed to occur as early as possible in the university course. The teaching and assessment on the participants' degrees began immediately at the start of the academic year (for example, the English and History students were given their coursework assignments in the first week of the semester for most modules, and the Chemistry students had regular laboratory and workshop sessions from the start of the course). Therefore, as Grace's comment above highlights, any delay in the participants being able to focus their attentions on study could potentially prove detrimental. Andrew also exemplifies this with his statement in the first interview that he was preoccupied with "trying to familiarise myself with where I can get things from the University". The period of adaptation to independence was short. During, or after, the second interview cycle no participants cited adapting to independence (e.g. doing their own cooking, cleaning, washing, and managing their own finances) as a concern. Facilitating this transition process was therefore key to successful transition.

7.3 Learning the conventions of university learning

7.3.1 Learning the rules of a new game

As outlined in Chapter 5, each of the participants already developed clear strategies for studying at school, which they then adapted to use at university. Similarly, they each understood the expectations of the community of learners at school, both within each discipline, and of school in general. Through years of experience, they had each developed a clear understanding of what was expected of them, and how best to achieve success in their studies. Figure 7.3 illustrates a social worlds/arenas map to identify the components of the two social arenas of being a learner in a school-based (pedagogic) environment to university-based (increasingly andragogic) environment. Each social arena contains interacting social worlds with which the participants engaged (to varying extents based on personal need).

Figure 7.3

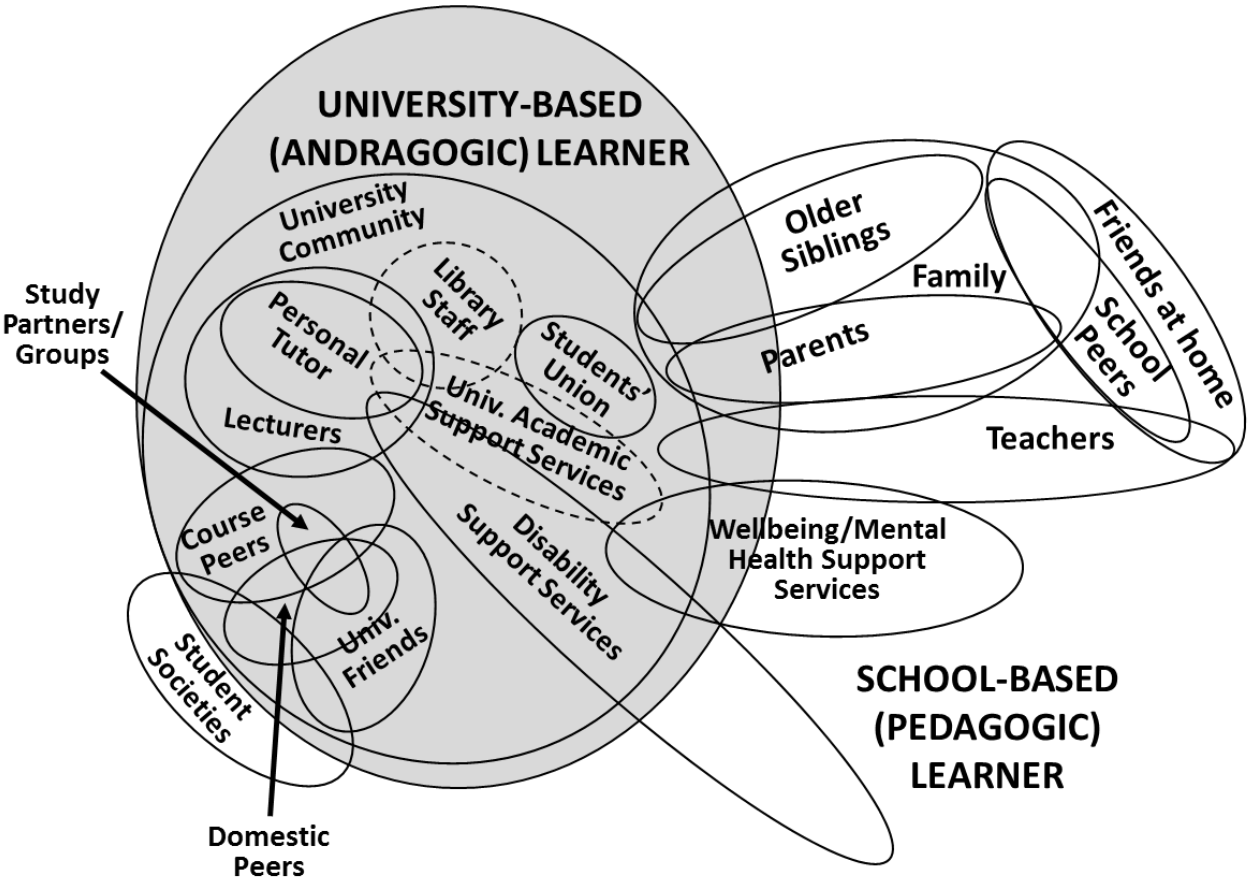

Figure 7.3 – Social Worlds/Arenas Map of engagement as a learner in HE. Social Arenas are indicated by capital letters, social worlds by circles and elipses labelled with lowercase letters. Degree of overlap shows the extent of interaction between social worlds and arenas (or between social worlds). Use of dotted lines indicates social worlds not mentioned in interviews. Shading is used to highlight the contrast between the Dependent and Independent Social Arenas.

The participants had been part of a community of learners at school, each gaining skills and understandings of this community as they progressed, moving from novice learners being guided by others, to often-highly-agentic individuals who would themselves support others. The social worlds impacting upon their development in this arena were primarily those of the teachers, their friends, and their family members (especially parents and older siblings). This interaction was close, with parents and teachers typically understanding the individual requirements of the participant.

The school-based social arena was clearly-understood by the participants in their first interview. However, their understanding of the university learner community was typically underdeveloped, and they did not really understand the expectations that had been placed on their academic activity at first. In some cases the school-based social worlds interacted with the university community social world. Emily had an older brother in the final year of the degree course, and Jane's English teacher at school was a graduate of the same degree course on which she was enrolled. Many participants also had parents were university-educated. Even so, when the participants moved to the university community they did not often understand the expectations on them, or how social worlds within the andragogic arena interacted.

The social worlds in the university learner arena were complex and highly mutualistic. There was often overlap between different peer groups, and there was support available from academic support ('Personal Tutors') and university lecturers, but knowing how to access that support was a challenge. For example, coming from an intimate and supportive environment at school, they were uncertain how much interaction with staff was permissible. Jane's feeling that she was an imposition to her tutors was a typical expression of this.

> … [school teachers act] a lot more like they know you, and it's so much more personal, like they know the way that you learn, and they know what you need, and you can ask them questions without feeling awkward. … now I feel like really awkward emailing my seminar tutors, like, "Hello, it's me again…".
>
> Jane (Interview 2)

What was striking was the perception among participants that they were 'on their own' within this new social arena. To most participants, logistical independence and self-organisation were seen as the primary expectations of HE study, rather than higher-order analytical thinking and academic rigour. When asked in the first interview what they thought the expectations were of them at University, every participant referred to the fact that they would have to manage their own workload, direction of study, time management, or completion of assessments themselves. Bryn's response to this question is typical of the aspects of learning that the participants focused on in response to this question of their perception of the educational expectations placed on them at University compared to school.

> I think more sort of having to do research by yourself and not having the text given to you; I mean we're given text books obviously, but then, doing the additional readings and then actually understanding what's in the text book through reading some additional readings. So, I think being more, more individual learning, rather than having the line that we used in the course itself, was; studying rather than being taught.
>
> Bryn (Interview 1)

The level of independence required was acknowledged to be a major step-change from school, even post-compulsory education. The different expectations were seen as significant:

> It's just a completely different way to learn information, basically just that. It sounds like nothing, but it is such a major evolution to be in charge of how you learn and to be in charge of your own deadlines.
>
> Grace (Interview 2)

Grace's perspective illustrates the two aspects to this self-regulation that were identified by all participants: Intellectual and logistical. Intellectual self regulation required participants to direct the focus of their studies and develop an understanding on their own, what Grace described as a "different way to learn". Tony and Nick described similar perspectives.

> At Uni your lifestyle is so independent; and I think that transfers onto the way you learn. ...it's like, here's the resources; here's the lectures; here's the books you need to read - you've got to find it out.
>
> Tony, Interview 2

> …the amount of time that you're not being taught anything, and consequently because of that you have to do it yourself. … It was the independence that was really the main difference. It was the biggest thing that you never had before.
>
> Nick (Interview 3)

The participants expected to have to work in isolation developing these understandings, and not be 'spoon-fed' the way they (universally) appreciated that they had been at school. The second area of self-regulation, logistical, focused around the need to manage one's own workload and deadlines without guidance:

> You can go to a lecture and write nothing down, and learn nothing, and no-one would check. …whereas in A-Level there were 7 or 8 of us in the class, so you couldn't get away with not doing much.
>
> Will (Interview 1)

> I think people can still get away without doing any independent study at college, because the teachers are still teaching you the material. Whereas here you're just given the material, and you have to pick out and learn what you need from it.
>
> Hannah (Interview 2)

> I think I will be treated more like an adult, and expected to understand the topic, rather than a child who has to be taught. I think that will be the main difference
>
> Raashid (Interview 1)

Raashid's expectation to be 'treated like an adult' was a sentiment that underpinned all of the participants' perceptions – that university learning would be less structured, and they would not be guided in their journey. To some the independence was a worrying and potentially-damaging environment. The concern to these participants (Ffion, Grace, Hannah, Isla, Jane, Kate, Orla, Penny, Quentin, Tony, Ursula, Will and Vic) was that the general lack of guidance could potentially have led to the participant going in completely the wrong direction.

> Living on your own is okay, but I felt like I was quite independent anyway before I came to uni. So I didn't find that too hard, cooking and stuff and cleaning, I was fine with that. … But educationally it is very different from school. I think that they should make school a little bit more like Uni. … So you don't have to change to get used to it.
>
> Tony (Interview 3)

This feeling was vocalised mostly in the second interview cycle, and to a lesser extent in the third, but was voiced by Kate, Jane, Quentin and Ursula in the first interview. The concern was universally was vocalised as frustration that they weren't being taught the material, or that it would be more efficient or effective to be given the details didactically.

> …they give you some stuff, and then you go and teach yourself. … [they say] we're going to learn more by like teaching ourselves, but we might be learning the completely wrong thing. And if they really want us to do well, they should just teach us.
>
> Jane (Interview 2)

Not all viewed the sudden independence, and need for SRL, as an obstacle. To Camille, Emily, Tony, Raashid, Will and Zach, the independence and relative anonymity was a bonus, and it enabled them to have more flexibility and freedom to follow their own path. Tony and Emily recognised that the change was integral to ongoing development.

> Just kind of, I just feel like you, kind of, adapt to how you get taught. You kind of adapt yourself to how you learn it, rather than the other way around. ... I think the teaching changes how you learn.
>
> Tony (Interview 2)

> …a lot of the time when I was doing A-levels, I was forced to do things. Whereas here, I can approach things the way that I want to approach them. So, even though it is more anonymous, I think there's more freedom to study the way that I want.
>
> Emily (Interview 2)

In all cases, in the final interview at the end of the academic year, the participants' responses indicated that they understood the expectations on them in terms of academic skills (independent study, critical thinking, application of knowledge to forming ideas). However, Andrew, Jane, Kate, and Penny still did the reason for being required to study a broad body of literature. All of the participants reported that they had settled in to the routine of university, and made effective use of the social worlds around them. For Simon, university was now nothing unusual to him, and he had settled in to the previously unfamiliar environment of a student, of living as an independent person, and of studying chemistry.

> …it took me a while to get used to it but then once you get used to it, it's just like anything really, it's a normal routine. I just take it as it comes now, and so, like the next four years, I'm looking forward to it.
>
> Simon (Interview 3)

Adapting to a new paradigm for learning and teaching was a hurdle for all participants during the first year, and the realisation that independence was a significant factor was key to success. The sooner they realised that they were on their own, and needed to take control of their own learning, the easier they reported finding the transition and their course. Bryn, Ffion, Kate, Will, Jane and Zach reported being quite settled in the second cycle of interviews. Conversely, Camille, Emily, Grace, Raashid, and Simon were more reticent when reflecting on how well they had settled in to date at that same point. However, this progression was seen as an individual journey, not one involving the support of others, despite there being clear social worlds of importance to this new arena of experience. Gaining these new skills as a university learner was seen as important, and all of the participants in the second interview cycle stated that they had learned new skills. Examples of these skills included researching of information (all participants said that they felt they were better at researching information independently for themselves), managing their time (for example Raashid repurposing his whiteboard to plan his workload, or Mary writing extensive plans in a personal planner), or making notes in lectures. It was rare in the initial stages for participants to see themselves as part of a community of university learners, and only Tony, Raashid, Zach and Mary saw themselves as part of a disciplinary community, or linked themselves overtly to the identity of their discipline. This disconnect appeared to be most prominent in those participants (such as Andrew, Penny, Vic, Jane, or Kate) who did not appear to fully appreciate the expectations of that academic community or the requirements of the Academy, at the beginning of their course. This aspect of a lack of professional identity is discussed in more detail in Chapter 8.

7.3.2 Limited initial awareness of the expectations of The Academy

When asked about their expectations of their university experience in the first interview, participants typically understood that university studies operated by different rules and conventions compared to school. However, their expectations (as shown in 7.3.1 above) were primarily around independence of activity, not higher-order thinking expected of HE study by the sector (Krathwohl, 2002; QAA, 2018). None of the participants could explain what the conceptual expectations were, and lacked a clear understanding of the academic literacies required of their discipline. There was typically a vague feeling that university study would be different from school, and that the workload would be high, requiring SRL, but little beyond this.

> …[the lecturers] said that in the first year that you're expected to do about 1700 hours of … working, and the lectures fit into that. And then obviously, the texts, but other than that I don't really know.
>
> Vic (Interview 1)

> I think they're expecting me to do a lot of self reading and … a lot of self teaching ... So, it's a case of, they'll give us the basic understanding in lectures, and then we'll need to find, to do a lot of extra reading ...
>
> Quentin (Interview 1)

> I think a lot of independent reading around the textbooks, the different critical books and things like that. That's going to be a big difference from the A-level, because in the A-level you didn't really have to do that. Half of the time the teacher would give you the critical quotes and things. But, I'm not sure. I'm not too sure what to expect really.
>
> Andrew (Interview 1)

Some participants appreciated that there would be more-challenging academic expectations of them, and that university expectations would go beyond rote-learning. Some expressed concern that they did not understand the academic expectations that were being referred-to. For example, Ursula was confused at the difference in language used by the lecturers versus the textbooks supporting those classes, while Raashid expected some differences, but was unsure what those would be.

> I don't know, it's my first time in a university, a big university like this. … So I think they'll be a lot of surprises, and I don't know now what else they will be. I don't know, right now it is lecture based and labs, and there's lab reports, tests and things like that. …
>
> Raashid (Interview 1)

All participants' expectations of the 'rules of the game' at the start of their course were primarily functional: They perceived that the main challenge facing them was the need to work independently and manage high workloads, with an unexplained additional 'other factor' that was unclear to them.

7.3.3 Transition points and 'Familiar Unfamiliarity'

The gap in understanding of the conceptual requirements of university study impacted on participants' engagement with the third social arena, the practice of the academic discipline. This social arena was the most challenging of them all for the participants to understand, as it required an understanding of the intellectual expectations and conventions of academia. The participants typically did not understand the (often implicit) expectations of The Academy, and the academic discipline. At the second round of interviews, there was still no clear concept, for most participants, of what was expected of them in terms of intellectual or academic competencies, beyond a general observation that the academic staff were expecting some as-yet-unidentified quality from their work. Isla was the only participant who understood the rationale behind a broad thematic focus to the taught material and independent reading.

> It doesn't seem to be as much of a memory test as A-levels, it's more of a skill test. …So we spent four months on just one book at A-level, and we had to learn off by heart. … And then here, you read about three books a week, and you have to analyse them and write about them, but it's less this specific point, and more what the general book says.
>
> Isla (Interview 1)

By the second round of interviews, all participants except Bryn, Emily and Will vocalised that there was an aspect of the expectations placed on them that they still could not quite grasp. The participants did not perceive the core academic skills commonly expected of a graduate. Examples of these graduate skills included knowing how to integrate information; to see parallels across a body of literature; to use literary or historical criticism, or historical sources; or to apply core knowledge to problem-solving in the laboratory (QAA, 2014a, 2014b, 2014c). A common approach was for the participants to focus instead on a facet of their studies that they could comprehend or conceptualise, but did not yet know how to do. This '***familiar unfamiliarity***' contrasted with the more pervasive unfamiliarities that they could not conceptualise. The typical familiar unfamiliarity for the chemistry students was how to manage the volume of information being presented to them. They focused mostly on how to remember core concepts and facts, and how to curate the information that they had been given.

> I didn't think we'd be assessed as much in the first year, as we have been. I feel like every, like, lab practical and stuff like that, we've been assessed on.
>
> Tony (Interview 2)

The humanities students also focused on managing the workload of reading expected of them, but more commonly focused on mastering writing and referencing conventions as a familiar unfamiliarity. Referencing was the most common of these, as they were aware of the need to cite their sources of information, but the exact referencing format was obscure and difficult to reproduce.

> I've got some friends who are doing the other type of referencing that I haven't done yet, so it's good to be to go to them and ask them how do I do this type of referencing that I haven't done yet.
>
> Hannah (Interview 2)

> …they are still moaning at us now, but they haven't really given us a solid resource for [referencing], so we just sort of get on with it. … Getting to grips with that is challenging. And we are like, "I am not being funny. We are new to this. You are using probably the most complicated referencing system known to man, and half of the people aren't used to referencing, let alone something at this level." Getting to grips with that is challenging. It's not like Harvard where after a few weeks you are like, "Right, I have got this, I can reference anything." With this, I am going, "I still don't know how to solidly reference a book, because it changes with every year that things are done."
>
> Kate (Interview 2)

Kate's frustration at the lack of guidance, and seemingly arbitrary nature of the system was common among her fellow literature students. In addition, Grace also focused on the different conventions of American versus British grammar and spelling, which were a major source of frustration to her:

> The Uni does advertise how international they are, and people are from all over, so I thought different backgrounds, different spelling. It is still correct spelling, it is just of a different country, how can that be wrong?
>
> Grace (Interview 2)

Kate's and Grace's feelings of being left on their own to find out something so important, or being penalised for something irrelevant, paralleled the anxiety felt by the participants of all disciplines that there was some additional hidden competency that they were expected to understand. The familiar unfamiliarity appeared to be adopted as a tangible and achievable goal for the participants at this stage in their understanding. This goal provided a potential achievement that would evidence progress in their studies. At the stage of the second round of interviews, most participants had not yet received the grade or feedback on their autumn semester work, and so had few tangible benchmarks on which to compare their progress. There was still apparent frustration at not being able to conceptualise the other requirements being placed upon them. Participants knew that there was more that was being required of them, but for the most part did not understand what this was.

A uniform observation of all participants in the second interview cycle was that they were becoming competent and confident members of the social arena of University learners. With a few exceptions such as Camille and Lucy, they felt they could study well and manage the workload effectively. However, all of the participants described a study environment in which they felt excluded from the broader discipline itself.

7.3.4 Emergent understanding of the conventions of the discipline

The final social arena of significance in the development was the arena of the discipline (figure 7.4). The social worlds of importance in this arena were similar to the other arenas, and so there is some alignment there. Key social worlds of family members and friends, which had importance to the maps described in figure 7.2 and 7.3, were of lesser importance here (unless a family member happened to be a member of the discipline). The industrial partners (potential employers) and learned societies or regulatory bodies are a key feature of the discipline social arena, and there is considerable (but not complete) overlap between the university community and the discipline, with the student's personal tutor and lecturers being central to this overlap. There was some impact of teachers who were aligned with the discipline (Jane's English teacher at school had studied at the same university, Simon's Chemistry teacher seemed to be highly proactive and set up expectations of the discipline). In a minority of cases (such as Mary, whose father was a clergyman, Emily, whose brother was already in a senior year of the course, or Penny, whose father has a strong interest in history) family members did have an impact on the developing understanding of the discipline.

The implicit rules and expectations of The Academy revolve around key academic skills (Boxall et al., 2004; Gildersleeve, Kuntz, Pasque, & Carducci, 2010), and in particular core concepts of the academic discipline. There were disciplinary differences in understanding the intellectual rationale for their studies. These core concepts were elusive to the participants, and they understood them at varying rates through the year (and some not at all). One of the factors that confused many participants was the rationale for the work they were being asked to do. Chemistry students did not always understand the rationale for the volume of content, and it was common for participants in English and History not to accept the rationale for the extensive reading lists, as these were perceived as being of little or no relevance to their studies. In many cases, a single essay or piece of written work was the sole item of assessment, and so academic activity beyond that assessment was often seen as unnecessary and frivolous. Penny, Jane and Kate expressed this opinion clearly:

> …you don't need to read the entire literary canon to actually be able to write a decent essay and know what you are talking about.
>
> Kate (Interview 2)

> So we spent the whole year studying 12 books, and then only one of them goes towards our actual grade, so, I'm not going to read it. … To be honest, with my course, there's not really that much prep but you have to do. You just have to read the books. And you don't really have to read the books. I've haven't actually read half of them. Because you write your essay on one book.
>
> Jane (Interview 3)

Figure 7.4

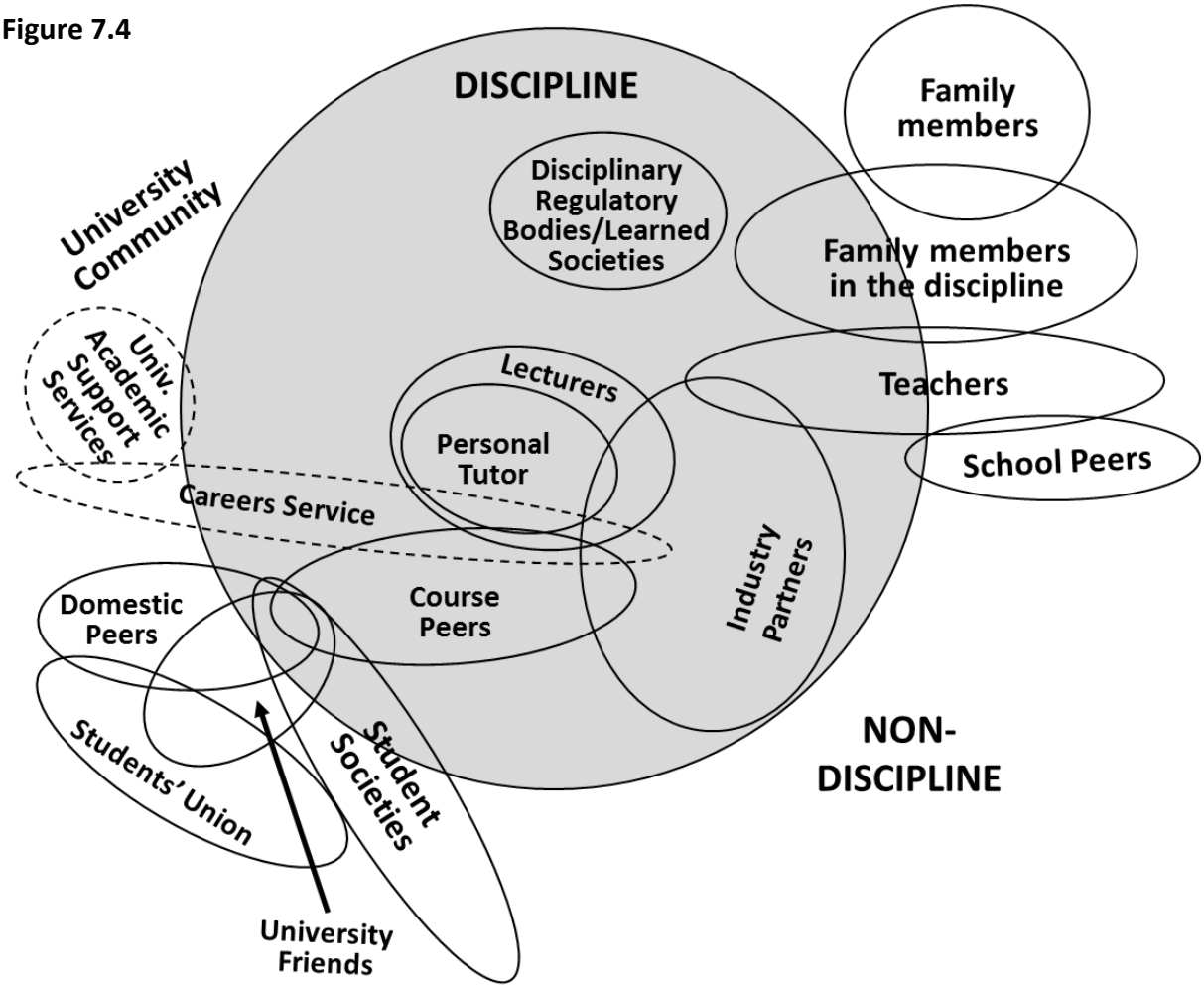

Figure 7.4 – Social Worlds/Arenas Map showing the interactions between the discipline and non-discipline arenas of HE. Social Arenas are indicated by capital letters, social worlds by circles and elipses labelled with lowercase letters. Degree of overlap shows the extent of interaction between social worlds and arenas, or between social worlds and other social worlds, but the size and shape of the elipses is otherwise arbitrary and does not have a significance. Use of dotted lines indicates social worlds not mentioned in interviews. Shading is used to highlight the contrast between the Dependent and Independent Social Arenas.

Jane and Kate did not see the relevance of reading books that did not contribute to the assessment. Similarly, Will could not see the relevance of focusing on 10 'case studies' for his 'Forensics' module, when he knew he would only need to answer questions on 6 in the exam. There were some participants who had recognised the significance of the broad coverage of material in the degree by the point of the second interview. Simon and Raashid reported that they felt they were being given the beginnings of an understanding of a subject, but recognised that their lecturers were merely opening them up to possibilities of more information that they could obtain through self-directed learning. Ffion, despite being one of the least-confident of the participants in her own abilities, was clear on the beneficial impact of reading around other material on her academic development.

> I try to read before the lecture, but it's sometimes hard to have ideas of my own about it, because the text is so dense. But then when I go to the lectures, I think my ideas just spring off their ideas. So I'm not learning their ideas as such, I'm just using them as inspiration.
>
> Ffion (Interview 2)

Ffion understood that the aim was to generate a broader understanding, and use the readings as background with which to enter a critical relationship with the lecturer. Ffion used the act of agreeing or disagreeing with the lecturer's ideas as a baseline for her own critique.

> I think the lectures are important, in making your own ideas, because you have to hear someone else's ideas, and obviously they are a lot more educated than I am, and I like to hear their ideas first. But sometimes I'm just writing an essay where I completely disagree with them, but their ideas are still integral to the process.
>
> Ffion (Interview 2)

In the final interview, Bryn described the impact of a wide reading base on understanding a core concept. By reading extensively, he felt that he was gaining a broader conceptual understanding, and that this was important:

> After reading more material.… that concept just keeps coming back more and more in context with other concepts, and the way that it worked with all the different contexts, it just made it clear how it works and why people did it, … you're just thinking to yourself "I am going to understand this, the more that I read".
>
> Bryn (Interview 3)

For Bryn, the important factor was gaining a broad conceptual background, with frequent exposure to a concept building up a wider context for the literature he was reading. So the books themselves were not important, but rather the concepts of the genre. Emily also appreciated the significance of focusing on a theme across a body of literature, rather than an in-depth analysis of a single book.

> A-level I did get to know the books really really well, like I knew it backwards. … Here, it's more like thematically focused around the question. So, instead of knowing the book really well and all the themes, I will just know this one theme really well through [each] book. And I'll be able to draw up on more examples, so it's more in depth on the theme.
>
> Emily (Interview 2)

This variation in the understanding of the significance of the broader context suggests that different students develop this undertstanding at different rates. Just as individual learners develop subject-based understanding at different rates, so too will they develop broader understandings of the conventions and concepts of the discipline develop at different rates also. For the majority of

participants, this understanding developed during the gap between interview cycles 2 and 3. Ffion, Simon and Raashid appeared to develop this understanding by the second interview cycle. Conversely, Andrew, Jane, Kate and Penny did not vocalise this understanding at all. Figure 7.5 summarises significant aspects of a selection of contrasting participants' perceptions of the conventions of the discipline, and how this changed over a period of time. Two examples are shown for each group of participants (those who developed an understanding by interview 2, those by interview 3, and those who did not within the scope of this study). The moment of understanding of the academic requirements of the discipline is marked by an asterisk in each timeline. In the case of Ffion, the understanding of these key concepts of the discipline came in the gap between Interview 1 and Interview 2, as she was able to vocalise the relevance of a broader reading base in interview 2.

> I think reading a lot of criticism is quite good; reading other people's thoughts; so you can think about them yourself, even if you don't agree with them. It's actually better, I think, to read ones that you don't agree with, because you can form your own thoughts.
>
> Ffion (Interview 3)

For Ffion, it was important to read other peoples' points of view, in order to help inform her own perceptions. Her study approaches therefore adapted to identifying broad themes, and using others' ideas to inform her own original concepts. Ffion gained this understanding early on in her overall development, which suggested an awareness and investment in the subject discipline that other, more-confident participants did not yet realise. Jane and Kate, for example, who were confident in their abilities, still did not vocalise this understanding, even at the end of the study (although they, Andrew and Penny did vocalise that understanding in later interviews in a separately-run continuation of this study). In the other cases the realisation of the rules came between interviews 2 and 3 in the latter part of the academic year, such as Mary who was frustrated by the additional reading at first, but saw its benefit in the final interview.

The lack of investment into the rationale for study activities had an impact on the study approaches undertaken by the participants. As understanding of the intellectual expectations developed, so there was a general move away from surface or strategic approaches to studying (such as accumulation of knowledge content, or making detailed notes) to an emphasis on more conceptual frameworks. Examples of these more conceptual frameworks included: looking for commonalities or themes across subjects, books or historical events; using information to solve problems in chemistry or answer challenging questions in history; or an understanding of how to use other people's critical frameworks to informed one's own ideas.

There are clear differences in the rate of development of understanding the 'rules' of the discipline, and not all participants achieved a full understanding by the end of their first year. There is a clear need to support students in understanding the conceptual requirements of the discipline early in the

Figure 7.5

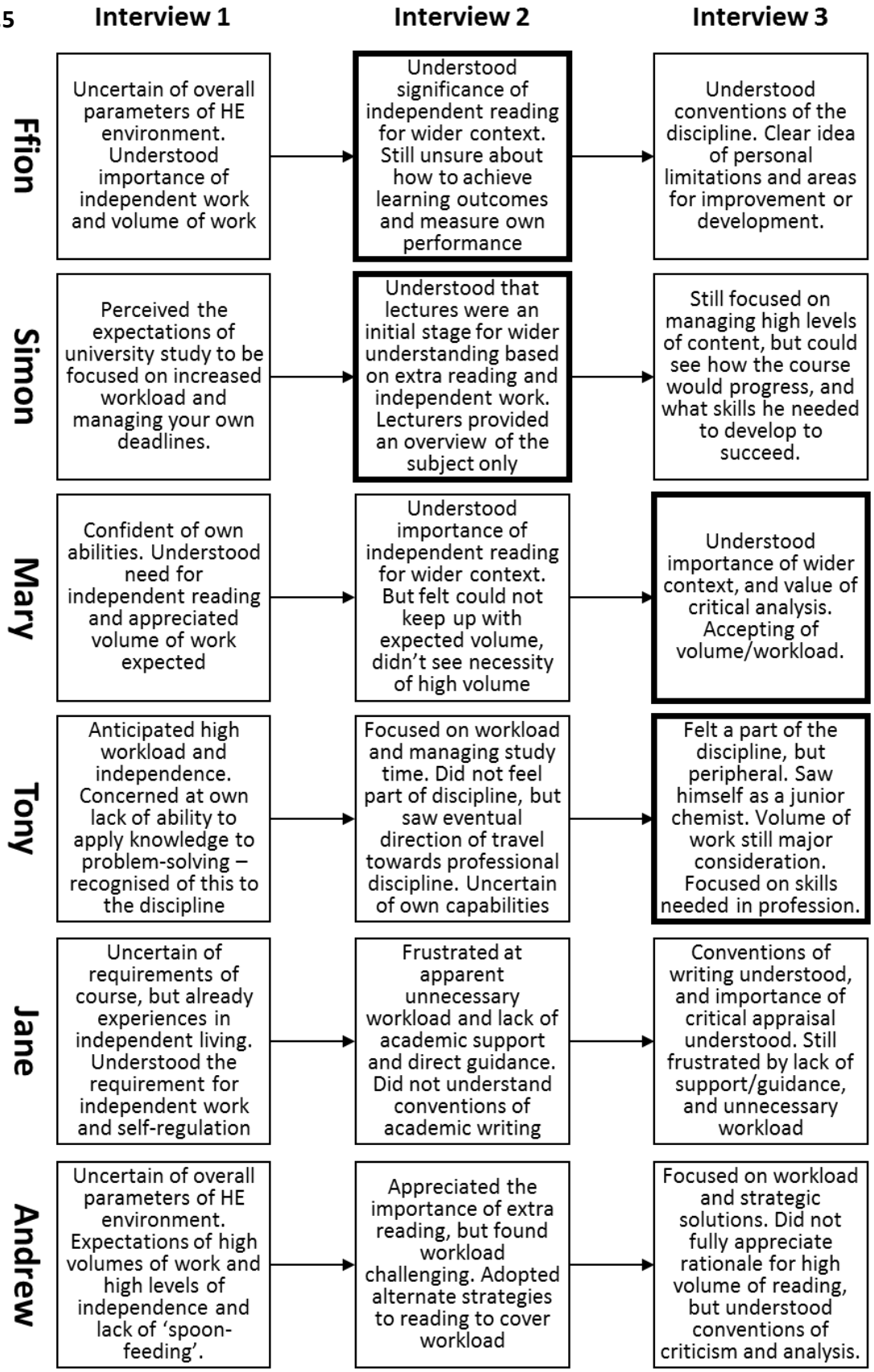

Figure 7.5 – Perceptions of the Rules of the discipline. Step-by-step summaries of the positions and perspectives of participants pertaining to the conventions and requirements of the discipline. Each summary is taken from the interview transcript. The interview in which the participant vocalised an understanding of the 'rules of the game' is indicated with a thick outline to the box. Jane and Andrew did not exhibit this understanding within the scope of the project.

course, in order to facilitate engagement with the learning activities, and an appreciation of the requirements of developing holistic understanding of the subject as a whole. This has potential significance for how curricula are designed and developed in HE, especially the Year 1 curriculum, to incorporate methods that empower students to develop an understanding of the 'rules of the game' for their discipline.

7.4 Barriers to understanding the expectations of University

7.4.1 Defining the drivers and barriers

The varying rate at which the participants were able to conceptualise the requirements and expectations being placed upon them was due to a conflicting range of environmental and institutional factors. The driving forces for, and barriers against, the appreciation of the conventions of the discipline are summarised in Figure 7.6. Figure 7.6 represents the competing impact of these factors, as revealed by the perceived or inferred significance by the participants in their interviews, through a forcefield diagram. Arrows represent factors that either drive or support students to become embedded within the culture of the discipline (arrows pointing right) or inhibit this process (arrows pointing left). The size of each arrow indicates the relative significance of the factor, gauged either from the frequency of mention in the interviews, or the degree of emphasis placed on them by the participants.

The drivers for integration were primarily focused around contact with established practitioners within the academy (either through mentoring, or the setting of authentic learning activities and assessments), and self-discovery of the requirements of the academy through trial and error. The extent to which the participant aligned themselves, and their career goals, with the discipline was also a driving factor, although career goals appeared to be less significant.

The barriers to conceptual understanding of the expectations of university education had more substantial impacts. The lack of social integration on the course was a significant factor, meaning that participants were limited in their peer-support network for the discipline, and restricted in the ability to collaboratively explore the conventions of the subject. Similarly, the assessment- or goal-focused attitude was prevalent, and meant that participants could not see the longer-term requirements of the discipline. The factors that were most common, or appeared most frequently as codes, were the lack of a clear rationale for learning activities, the lack of guidance and contact from academic staff (i.e. expert members of the discipline), and conflicting concepts or impressions being given to the participants (such as the importance of critical evaluation being emphasised, but then the classes focusing on content and knowledge acquisition)..

Figure 7.6

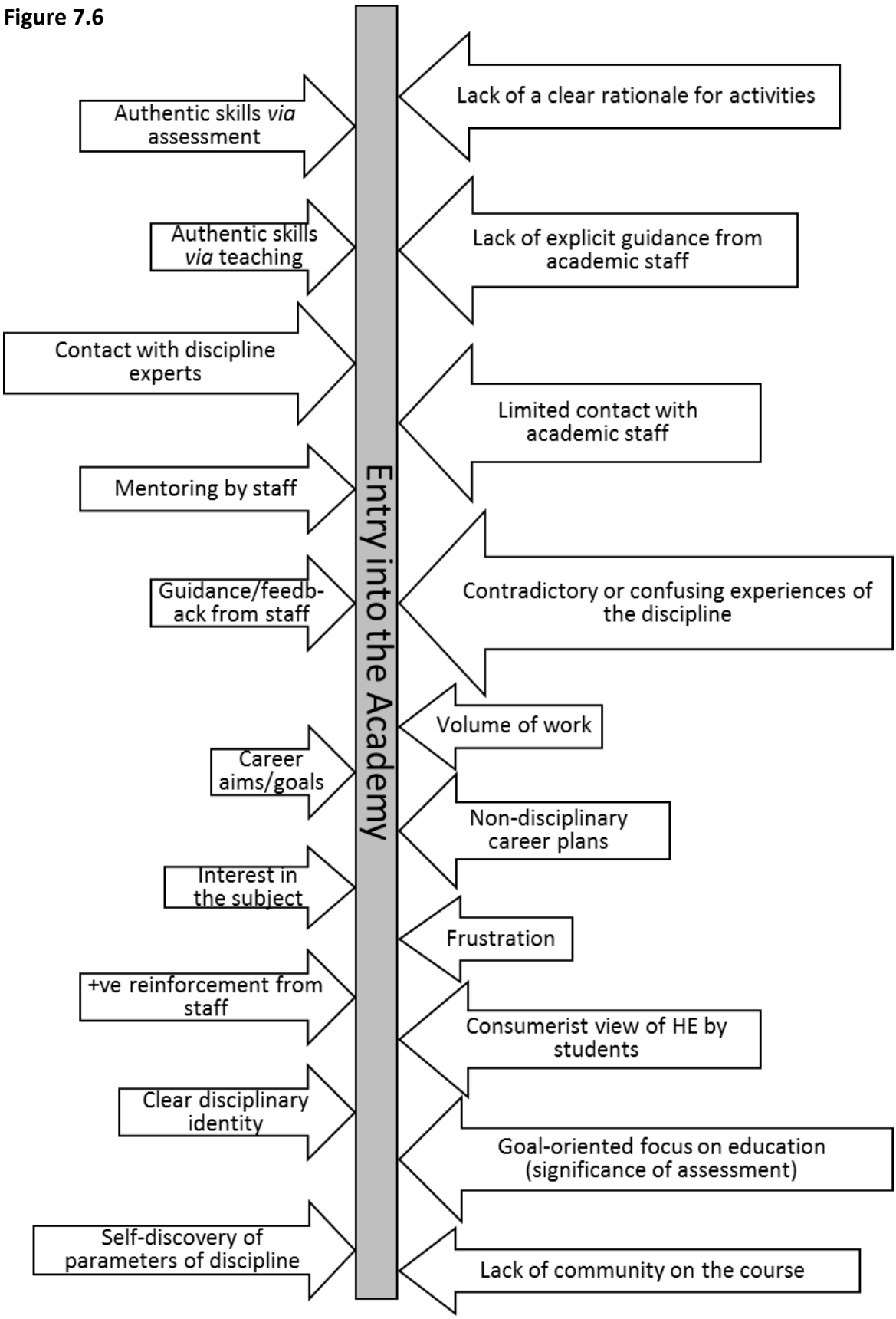

Figure 7.6 – Forcefield analysis of the drivers and barriers to integration into the discipline. Arrows on the left (pointing to the right) represent drivers, arrows on the right (pointing left) represent barriers to integration. The size of the arrows represents an approximation of the relative significance of that factor in the data.

7.4.2 Lack of direction and guidance

The most significant limiting factor to all participants was the relative lack of direct support and guidance from a more-experienced individual in the discipline. This lack of mentorship limited the extent to which the participants could be expected to learn the 'rules of the game' for a discipline, the conventions of which they knew nothing, or very little, about. Simon summarised his experience as realising "how much you have to know, without being told you need to know it". So at the point of information delivery, the participants were not informed how best to use that information. Lack of one-to-one communication is a key factor in the failure of a community (Probst & Borzillo, 2008), and the relative lack of guidance and mentorship had a significant negative impact on all participants.

> …you need to not only learn random facts, you have to know what's linking them altogether, really explicitly. And you're not told that sometimes. Or you're not told that in lectures, you're told that in tutorials and workshops and practicals, or in the textbooks.
>
> Simon (Interview 3)

This may be explained by the divergent aims of the communities of students and faculty (as was observed by Engstrom, 2004, in his study of student - faculty interactions at Syracuse University), where students are aiming for a qualification, but faculty see the discipline as a vocation. For example, Kate disagreed with the type of guidance she and her peers were being given on essay writing:

> That was the style guide and you are expecting people to know exactly how to write the perfect essay from day one. We have only been here for three months. You have given us this guide which is difficult to get through in the first place, and then half of it you don't actually need because it is not necessary to you. It is just simple things like the page number must be in this corner and in this font. And we are like, "Really, does it matter?" In the wider scheme of things does it matter? You should give us this year to sort it out. And the urgency is to be really perfect straight away, and I am not being funny, this is not like we are being marked, and we are paying to be here so …
>
> Kate (Interview 1)

Kate's frustration was in not being given the guidance required to develop the immediate skill needed (i.e. essay writing and referencing), while she felt that the faculty focus was more on laying the foundations of proper presentation and formatting.

Lack of guidance was also compounded by a goal-orientated rationale for studying (i.e. a strategic focus on assessment and grade results) causing the participants to be seeking different advice from what academics expected to provide. Jane's comment (quoted in section 7.3.4) about refusing to read the whole reading list is exemplary of this – her priority was producing a good essay, rather than the broader aim of developing an appreciation of the genre on which the module was focusing. Similarly,

Zach developed a very short-term strategy to cope with passing one difficult module that was entirely focused on the result, rather than the learning experience of the discipline.

> I basically had one exam and five class tests, so five smaller tests of were…worth 10… 2 to 10% of the course, so not necessarily an exam, so I didn't really prepare as heavily for those. I mean, I did quite well in them, getting 70% on most of them, but the exam I studied for by putting all key words on to like Quizlet, which is the online flashcard site, and then just getting to know the key words and key equations didn't work out very well for me. I got a 43% happy that I passed that.
>
> Zach (Interview 3)

A few participants did highlight guidance in academic skills, for example the application of problem-solving was made clear to chemistry students in tutorial workshops, and there were some guidance sessions for humanities students:

> …we had a lecture on how to write an effective essay. And the way that they talked about the idea of an essay; it sort of changed my perspective on how I should write one. ...you have to make a clear argument and then continue arguing that while providing counter arguments and that sort of thing.
>
> Bryn (Interview 2)

Conversely, others felt that there had been relatively little, or no, guidance on the conventions of academic thinking and the construction of a supported opinion. Jane reflected at the end of the academic year that it would have been beneficial to have been informed of the academic expectations at the outset:

> Yes, they should've told us at the beginning. I think it's difficult, obviously, for them because it's so obvious to them. And I think they didn't really tell us at the beginning. That would've been better.
>
> Jane (Interview 3)

It is unclear why there was this discrepancy. It could have been a modular-level difference between levels of support, or it could have been that some participants missed the guidance when it was given. Despite involvement in seminar discussions in their courses, all of the participants in the humanities felt that mostly they had been left to work out the requirements and conventions for themselves, even those such as Bryn, Ffion or Jane who recollected specific study skills classes. Only infrequent interactions with specific members of staff provided effective guidance from the faculty. Jane, for example, had one lecturer who clearly defined the ideal approach for shaping an argument and an essay, towards the end of the year, which she found invaluable, but equally also felt that the insight should have been provided earlier.

An interesting perception voiced by some participants was the feeling that perhaps this level of uncertainty was the norm for university life, and that a lack of guidance and support was a deliberate and integral challenge of the university learning process.

> …they don't want to give us all the clues. They want you to work it out yourself, they don't want to give you all of the answers, they want you to think, which is honestly better, but it's harder. They want to see who worked it out, I think.
>
> Jane (Interview 3)

> I feel sometimes that you don't get a lot of information, but I don't know if that's just university life or not. I feel I have to figure out a lot of what I'm supposed to be doing … having to adjust to actually understanding what they want you to do for your work.
>
> Hannah (Interview 2)

> I like being told; these are where you're aiming for - and I like to aim to go beyond that. Whereas, when we've not been told what we're aiming for, it's very confusing to me.
>
> Mary (Interview 2)

Mary's comment highlights the potential negative impact of this uncertainty. Other also felt that the lack of guidance would have a negative impact. The lack of positive reinforcement and guidance from a teacher was seen by Ursula as a major limiting factor to her studies. She noted the benefit that positive reinforcement provided, and the potentially catastrophic impact of a lack of support.

> I need that sort of friendly person to encourage me, otherwise I just won't do it. Someone that is quite harsh towards me, I went to their work, I feel really discouraged from it. …. If I'm insecure about something, like I would break down. In my maths lessons I'd have five breakdowns a week, because I couldn't answer one small question, or I needed just a little bit of help to get over one little bump.
>
> Ursula (Interview 1)

Mentoring and support were important for Ursula, far more so than for other participants, and its lack was potentially disastrous for her development. As mentioned in section 3.3.3, Ursula withdrew from the university before the second interview cycle. Unfortunately it was not possible to ascertain whether this lack of support was a contributory factor to Ursula's decision to withdraw from University during the first semester.

The perception that participants were expected to figure out the parameters of their studies themselves was even more apparent in the narrative around assessed work. Participants were unclear what was expected of them, either in the volume/focus of content and detail required for

examinations (in the case of the chemistry students), or the expectations academic staff had for essays and assignments (in the humanities students).

> I kind of … worked out how to do it, you know? Like at the start it was quite like "Oh why…was this essay not good?", but then I think the more essays that we wrote, it got easier to work out what they wanted us to write.
>
> Jane (Interview 3)

Often this lack of direction was challenging for the participants to get started in their work. Without a clear set of guidelines of the parameters of the assignment, they were unsure of where they should begin. This was quite a step-change from school, where the activities were highly prescriptive, well-explained and well-supported.

The expectation to work out the rules and requirements of the expected academic practice was made problematic by a limited amount of feedback, and apparently inconsistent marking, in the eyes of the participants. This was problematic as it meant that there was no baseline for comparison, and participants felt that they were building their skills on weak foundations.

> I still don't have any idea what the difference between 69 [%] and 71 is, and I still don't have any idea why they don't give you anything above 75.
>
> Mary (Interview 3)

The significant impact of such guidance, when it did occur, was apparent. For example, Jane had revelatory discussions with one member of staff over an assignment during a module. Jane was mid-way through writing her essay assignment, and requested guidance and support were revelatory about the expected approaches.

> I just had a really good lecturer, actually. And she went through stuff to do with introductions and conclusions to essays, which is obviously like the hardest bit and then I went, "Oh that's what I'm supposed to do!" … and that kind of helped a lot
>
> Jane (Interview 3)

Guidance from expert members of the discipline was clearly important and valuable when it was received, but problematic when it was omitted. The perception that a lack of guidance was somehow part of the learning experience, however, was potentially damaging to both confidence and self-esteem, and limited both progression and the development of appropriate SRL skills in those individuals who experienced the lack of support.

A compounding factor for a lack of guidance was that when guidance was offered, it could conflict with guidance received from others. The participants did not yet have an understanding – or necessary coping strategies – for the nuance and variation in how material is presented by individuals

within HE. This variation in the expectations of different academics over what a good answer looked like, limited the effectiveness of SRL because the participants did not have a single defined 'ideal' to aim for, in contrast to school, where the focus had been on learning the 'ideal' answer to a question. This challenge was especially difficult at the beginning of the course, as the participants adapted to the change from school.

> …the most frustrating thing I have found here is that there are conflicting ideas. So one professor says one thing and another professor says something different. … And it's a little bit frustrating, because at the end of the day I have to write the exam, so what will come to my paper so this is very important to know.
>
> Raashid (Interview 1)

Additionally, the messages given to students were dissonant and caused confusion. Lecturers emphasised the importance of self-direction, originality, and critical thinking. Yet the teaching received on the courses was primarily through didactic lectures, with little direct personal contact with the lecturers. In chemistry practical laboratory classes, the most common contact was with postgraduate (Ph.D) student teaching assistants. Even in the humanities subjects where seminars were common, seminars were conducted by postgraduate students, and the only contact from academic staff was during didactic sessions.

> They do expect you to have your own ideas, rather than just repeating what they taught you. So they're looking for creativity ... But also it contradicts things, because in the lecture they just talking at you, and they don't sort of ask questions or anything like that.
>
> Ffion (Interview 2)

The confusion and lack of support felt by the participants was sometimes voiced in terms of their perceptions of fairness or value for money, emphasising the significance of it to their lived experience. The impact of this uncertainty and lack of direction was profound on the reimagining of their PLSs from school to university. Without guidance, the revision of these strategies could potentially be unfocused, misguided or detrimental. Issues around enculturation into the various disciplines within the academy have significant impact on the development of SRL.

7.5 Conclusions

7.5.1 Interacting social arenas in Higher Education

The participants' experiences suggest that during Year 1, at least three distinct, but interconnected, social arenas impacted upon the participants' studies: *(i)* The discipline (i.e. being a practicing chemist, historian, or literary scholar); *(ii)* Being a Learner in HE (being a student, and learning how to learn); and *(iii)* Living as an independent adult (learning to live without the family support network).

Learning to be independent was the major focus for the participants in the early stages of their university experience, and could be conceived as a gateway for the other two arenas, as without it the student could not function. The participants were embedded within several interacting social worlds. The participants who returned to at least interview cycle 2 each investigated and understood the requirements of living independently, in collaboration with others and with other social worlds. A delay in embedding within the arena of being independent could potentially limit the development of other arenas and, as a result, SRL.

Engagement with the social arena of being a university learner was unique to each participant, and involved their developing of both study skills and academic literacies (apects that Ashwin et al., 2015, pp., highlight as particularly important for learning development). Although there are accepted norms for learners – their levels of engagement, learning approaches, behaviours and expectations – each individual established their own interpretations of these. This individuality is evidenced by the differing rates of understanding the core principles of the discipline (as shown in Figure 7.5), as well as differing participant views on the importance of extra reading, attendance at classes and seminars, and the perceived levels of support offered to them (as detailed above). The key social worlds of importance here were those of the course peers, academic staff, and domestic peers. Central to the function of this arena was understanding the importance of independence work-planning and the development of learning strategies. Integration into this social arena consisted primarily of swapping the conventions and expectations of the school learner social arena, and applying those insights to the social arena of the university learner.

The arena of the discipline was the overarching factor in the participants' development, as the tacit aim of most degree programmes is to develop a graduate who can function – at least in part – as a professional in that discipline (Biggs & Tang, 2011; Bligh, 1990a; Daily & Landis, 2014). Ironically, however, in most cases participants felt the least embedded within this arena. It was clear that learning activities were undertaken: critical essays for the humanities students, conservation work and interpretation of sources for the historians, and laboratory work for the chemistry students. However, these were not viewed by the participants as authentic, examples of professional practice. The challenge here, therefore, appears to be one of perception, that the participants did not feel that

they were members of the discipline, but rather students who happened to be studying that subject. This issue of identity is discussed further in Chapter 8.

Each of these social arenas had key activities or competencies the participants reported developing. These were either embedded within one arena or shared between them (see figure 7.7). Writing skills and referencing conventions, for example, were fundamental competencies of being a university learner, but also important to the discipline. Personal administration (such as cooking, cleaning, shopping and doing the washing), however, was solely competencies of being an independent adult. Mastering some key competencies therefore had impacts on more than one arena, while other factors had very specific impacts. Building PLNs and academic relationships were core to all three arenas, which highlights the significance of all three arenas to the development of SRL strategies.

7.5.2 Grasping for the unobtainable

There was a strong sense of the participants trying to understand the requirement of the discipline, but just falling short of attaining that during much of their first year. The focus on 'familiar unfamiliarities' was a symptom of this, which manifested as an attempt to fixate on something tangible in the face of something that could not be conceptualised (such as critical evaluation of historical data, broad synthesis of a genre of literature, or broad principles in a branch of chemistry). In several cases participants exhibited an understanding that something different or unusual to their established experience was required. But none could vocalise what this was at the start of the course, and only a few expressed an understanding of this at the end of their first year. This inability to understand the requirements expected of them, combined with a lack of guidance or direction in many cases, led to frustration and disengagement in those participants who had not reached a point of understanding of the requirements of the discipline. There appeared to be a strong correlation between those participants who had understood the rationale behind what was being required of them, and general satisfaction with the course.

A lack of understanding of the rules of the discipline (and the consequent exclusion from the discipline) could limit academic success and effective development of SRL strategies during the First Year. Lack of social contact on the course of study meant that participants' PLNs comprised primarily individuals from a different subject area, rather than those within the discipline. This meant that the progress of understanding these rules was slow. The relative lack of contact with academic staff also inhibited integration with the discipline.

Figure 7.7

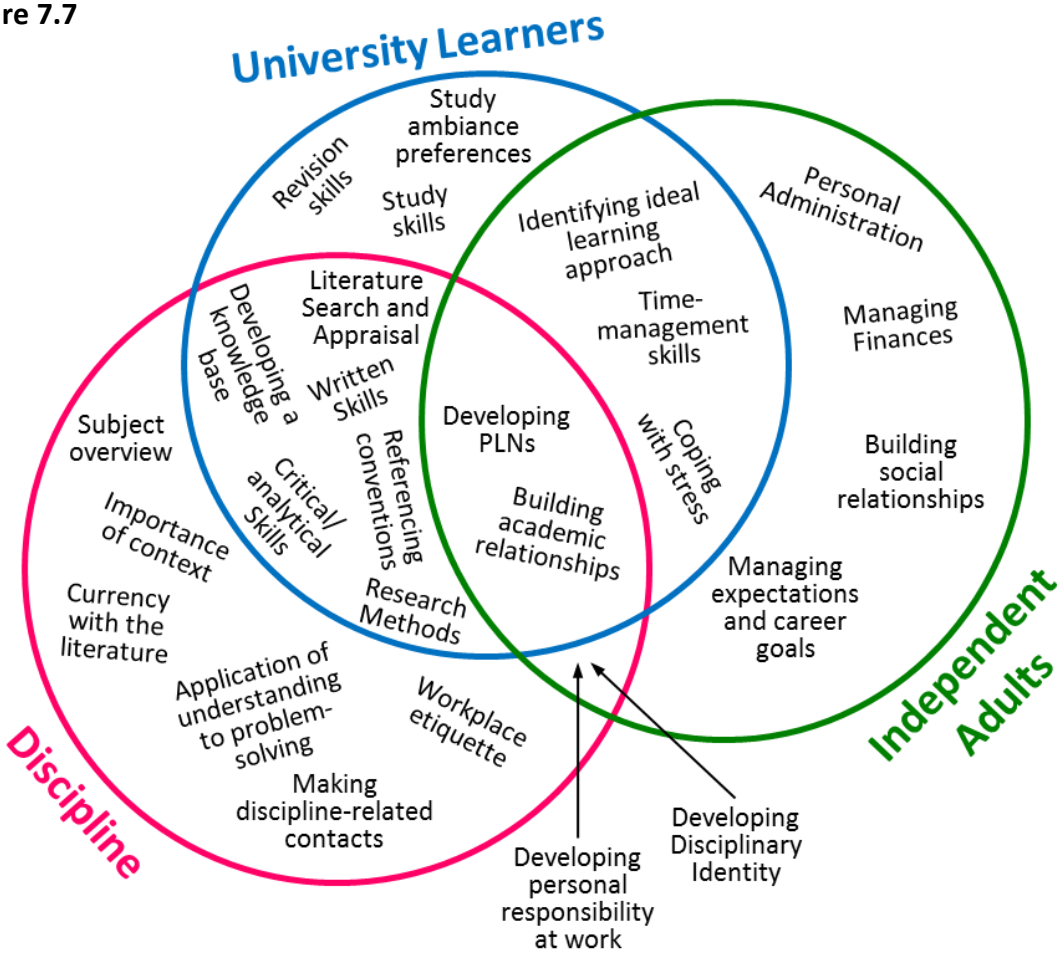

Figure 7.7 – Alignment of key factors into three social arenas. Three arenas are identified - Being an independent adult (green); being a University learner (blue) and the discipline being studied (Pink). Each social arena comprises of essential factors and competencies, which may or may not be shared with other arenas (identified by the position within the intersecting regions).

7.5.3 Impact of learning the 'Rules of the Game' on self-regulated learning

When discussing their experiences of the year as a whole during the final round of interviews, the participants reflected that they had developed significantly over the year. Common to students beginning university (Maunder et al., 2013), the participants initially had varying (but generally limited) understandings of the expectations of university, and the academic literacies required of them. All Participants had clear expectations of, and reached confident inclusion in the community of independent adults; reasonable expectations of, and increasing expertise in being university learners, and a partial understanding of the requirements of the discipline, even if there was little if any inclusion within it. Learning the rules of the game is integral to the development of SRL for the discipline, and in turn effective SRL is essential for success in that discipline. Without effective SRL strategies, integration into The Academy is inhibited, but without the attraction and support of the

discipline, and its community (for example lecturers, researchers, post-graduate students), development of SRL will be inhibited. Certainly Tinto's models (Tinto, 1975, 1998)) identify lack of engagement with the discipline as a key factor for students leaving their courses, and Probst and Borzillo (2008) cite lack of direct engagement with the academic community as a factor for failure to persist in HE.

One of the key fears of the participants was that without guidance they might be learning the wrong things, or developing in the wrong way. As the participants were reconstituting their SRL strategies over the course of the first year at university, there was a real threat that without proper guidance, they might revise these strategies to support the learning requirements that they *thought* they needed to develop, rather than those they actually did require.

7.6 Summary and putative model for empowering students to learn the 'rules of the game'

The analysis of the social worlds and arenas around the participants suggested that a key factor for the development of SRL was the concurrent development of understanding the 'rules of the game' for the academic discipline in which the participant was engaged. However, this process of becoming embedded within the community of the discipline faced several barriers. Two major barriers were the need to first become an independent adult (albeit in a highly-supported environment, such as a University Hall of Residence), and secondly to become embedded within the community of university learners overall.

The process of becoming embedded within the community of the discipline required active interactions between students and the academic staff (both lecturers, Personal Tutors, post-graduate seminar tutors and teaching assistants), and also between peers (both within the discipline and external to it). A lack of engagement between these constituencies potentially leads to a delay in embedding the student within the discipline, and in several cases in this study led to confusion and/or frustration. These findings have implications for professional practice, as they suggest a framework of key stakeholders who need to interact in order to support the student in learning the professional practices of the discipline. Repetition of the core fundamental messages about the academic discipline may be required here, as here was evidence that although the academic Schools had explained the conventions of the discipline, this was not fully either understood or remembered by the participants.

Figure 7.8 illustrates a putative model for how such interactions between stakeholders could function to support the student in developing an understanding of the 'rules of the game', based on the findings described in the chapter. Formal teaching activities (shown by the black arrows) have the potential to be used to reinforce the established norms of the discipline. Lecturers were reported by some participants to provide useful guidance on academic skills, though due to the social situation of a lecture, where students would be unlikely to enter a dialogue, the arrow in the figure is unidirectional, highlighting that the communication is form the lecturer to the student. The possibility for more fruitful dialogue is through interactions either with a seminar tutor (in Year 1 this was usually a PhD student), or a teaching assistant in a laboratory practical, or the student's Personal Tutor, though tutorial sessions and mentoring. These interactions would be two-way discussions, hence the double-headed arrows. In addition, one of the potential benefits of a postgraduate student would be as a less-threatening person to whom the student could turn to for guidance about the discipline by asking questions that weren't part of a formal teaching session (white arrows). Each of these academic staff stakeholders need to present a co-ordinated message, however, as the data suggested that conflicting or contradictory messages caused confusion. Therefore there are also arrows between these in the figure.

There is the potential for student peers on the degree to be part of this learning of the rules of the discipline, as there were some limited examples of participants learning from each other, either during class sessions or outside of class. These course peer groups would also be impacted by the lecturers and post-graduate tutors. Peer interactions could be either facilitated discussions within formal teaching sessions or tutorials (black arrows), or informal conversations outside of formal teaching (white arrows). There is also a role to be played by the domestic peers (and possibly family for those students living at home) in supporting the development of the student as an independent individual and university learner.

The key factor with the proposed interactions is that they are rich in dialogue. The lack of effective dialogue about the rules of the game for the discipline was evident in the data, and where there was successful progress (for example Jane's experience with the supportive lecturer, or Bryn and Hannah's interactions with their peers) dialogue was a key feature. Equally, where there was stagnation (for example Kate's frustration at what she saw as the lack of effective guidance) the situation was static, though printed media or didactic instructions. So, as in the development of SRL, there appears to be a key social element to learning the rules of the game for the discipline. Embedding within, and understanding the conventions of, the discipline was also important for the ongoing development of SRL, and of the development of the student's identity as an agentic learner. The impact of identity is discussed in Chapter 8.

Figure 7.8

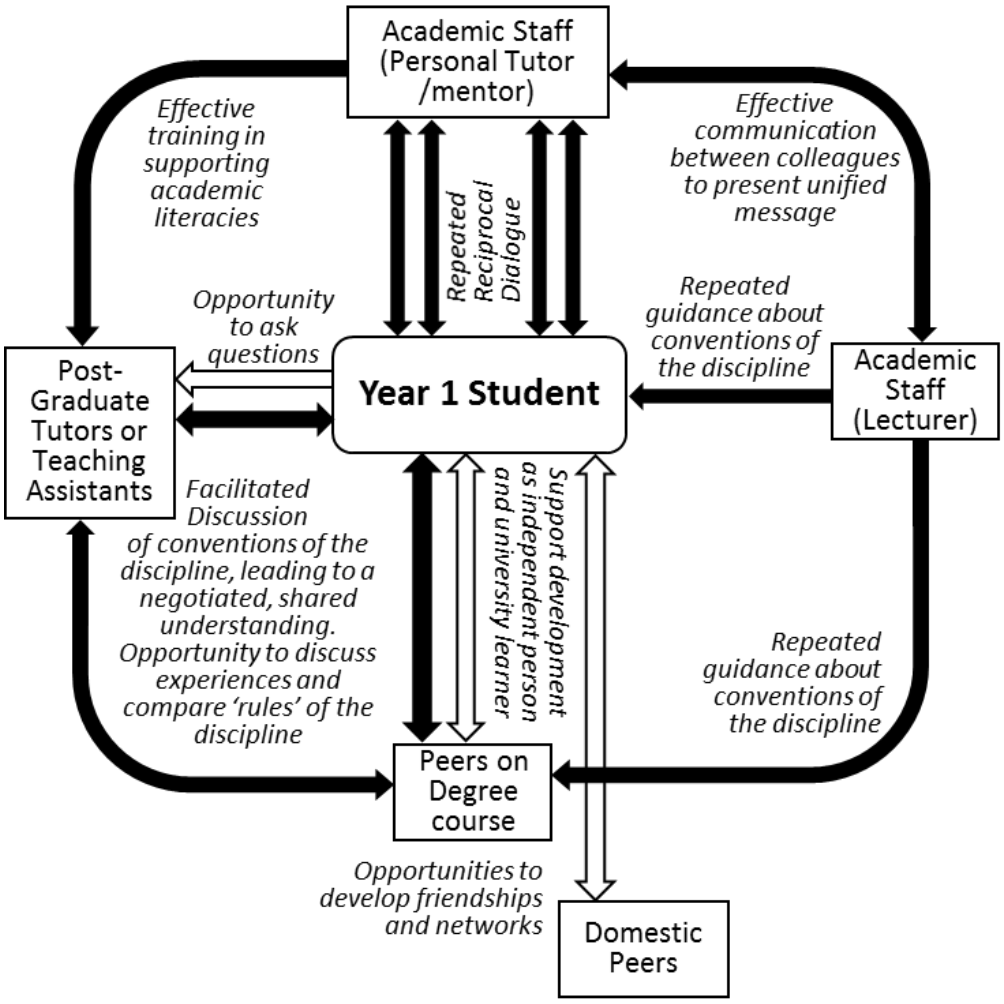

Figure 7.8 – A putative model for support of a Year 1 student in the development of an understanding of the conventions of an academic discipline. Key stakeholders are identified by boxes, with interactions between them shown by arrows. Black arrows represent formal instruction or formal classes. White arrows represent informal interactions outside of taught activities. Two headed arrows indicate dialogue, single headed arrows indicate direct (didactic) instruction. Italicised text shows the nature of the interaction.

Chapter 8

IDENTITY AND AGENCY IN THE DEVELOPMENT OF SELF-REGULATED LEARNING

8.0 Context to the analysis

This chapter aligns with Research Question 3: "What are the perceptions of Year 1 undergraduate students regarding SRL; and the extent of their agency and responsibilities within the HE setting?" The aims of this research question were initially to investigate the participants' perceptions of their own responsibilities in the learning experience at University. A common concern in contemporary HE is that students at school are 'spoon-fed' information (Stoten, 2015a). The concern is that students are overly taught-to-the-test, and provided with all of the information they require, with little need to investigate knowledge themselves. The transition to an HE environment where the syllabus is less-closely defined, and where much of the studying is expected to be self-directed can therefore be a challenge (Newman-Ford, 2018). This research question aimed to explore students' understanding of their own roles and responsibilities in their learning at University, compared to school.

One of the key principles of Grounded Theory is that the researcher remains open to unexpected concepts emerging from the data (see section 3.4.1). This was indeed the case with this aspect of the analysis, the outcomes of the CGTh and SA suggested that the understanding of roles and responsibilities was more-nuanced than originally expected. As a result it became apparent that a better lens through which to explore the participants' experiences and perceptions was that of identity. This revised focus enabled the consideration of how perceptions of roles and responsibilities for learning were informed by students' perceptions of their own agency, their self-view, and how they believed they fitted-in to a wider educational and social context. This outcome also exemplified the potential benefit of a non-positivistic analytical approach, such as CGTh, for identifying themes and concepts that had not previously been anticipated.

8.1 Overview of the super-codes and categories

The theme of identity consisted of four categories (summarised in figure 8.1): Identity development; challenges to identity development; positive feelings; and developing long-term strategies. Using Positional maps to support the CGTh analysis, this chapter will focus on the key identities that the participants presented. In addition, the barriers that impede identity development were defined as a super-code, as these also directly impact the effective development of SRL strategies.

Figure 8.1

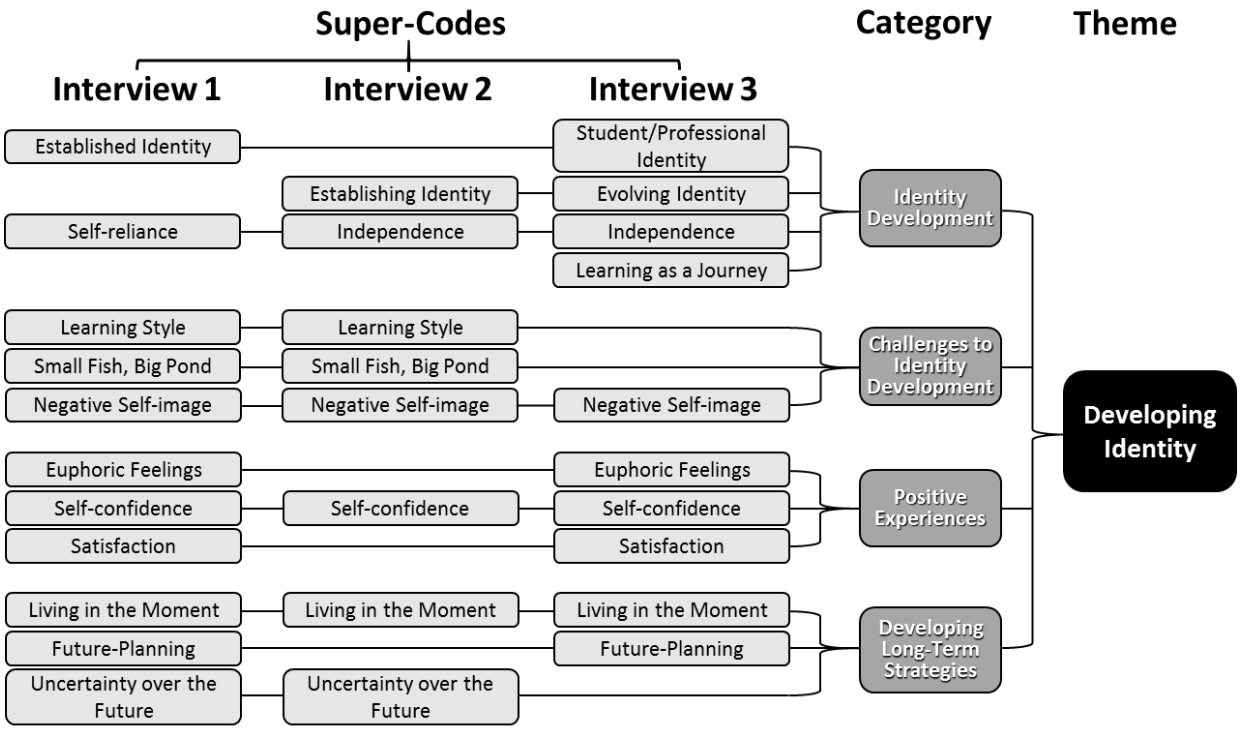

Figure 8.1 – Summary of the super-codes and categories the 'Developing Identity' theme. Identification of the super-codes determined from the CGTh analysis of each interview cycle, showing the categories into which they were consolidated. Super-codes (light grey boxes) are aligned with cognate Categories (dark grey boxes), which are combined to make the Theme. Lines show clustering of supercodes into categories, and categories into the theme.

8.2 Drivers of identity development

In the analysis of all three interview cycles there were codes relating to factors that impacted upon either established or emerging identities (illustrated in Figure 8.2). The emergent codes could be broadly clustered into intrinsic factors (personal motivations and perceptions), similar to the factors identified by La Guardia (2009), and extrinsic factors (social or societal factors established by others and acting upon the participant). Each factor could have enhancing or inhibitory influences on the participant's initial and evolving identity (Wenger, 1998). The emergence of identity as a factor from the data aligns with similar themes in the literature around transition. As discussed in section 2.1, external factors such as interactions with social groups (Hughes and Smial, 2014), class (Reay, 2002), and a sense of belonging (Palmer et al., 2009) were key in facilitating transition. These are all external factors relating to student identities. Similarly, the identity of 'in-between-ness' that Palmer et al. (2009) proposed is an intrinsic impact on identity, as is how the student relates to their own family

Figure 8.2

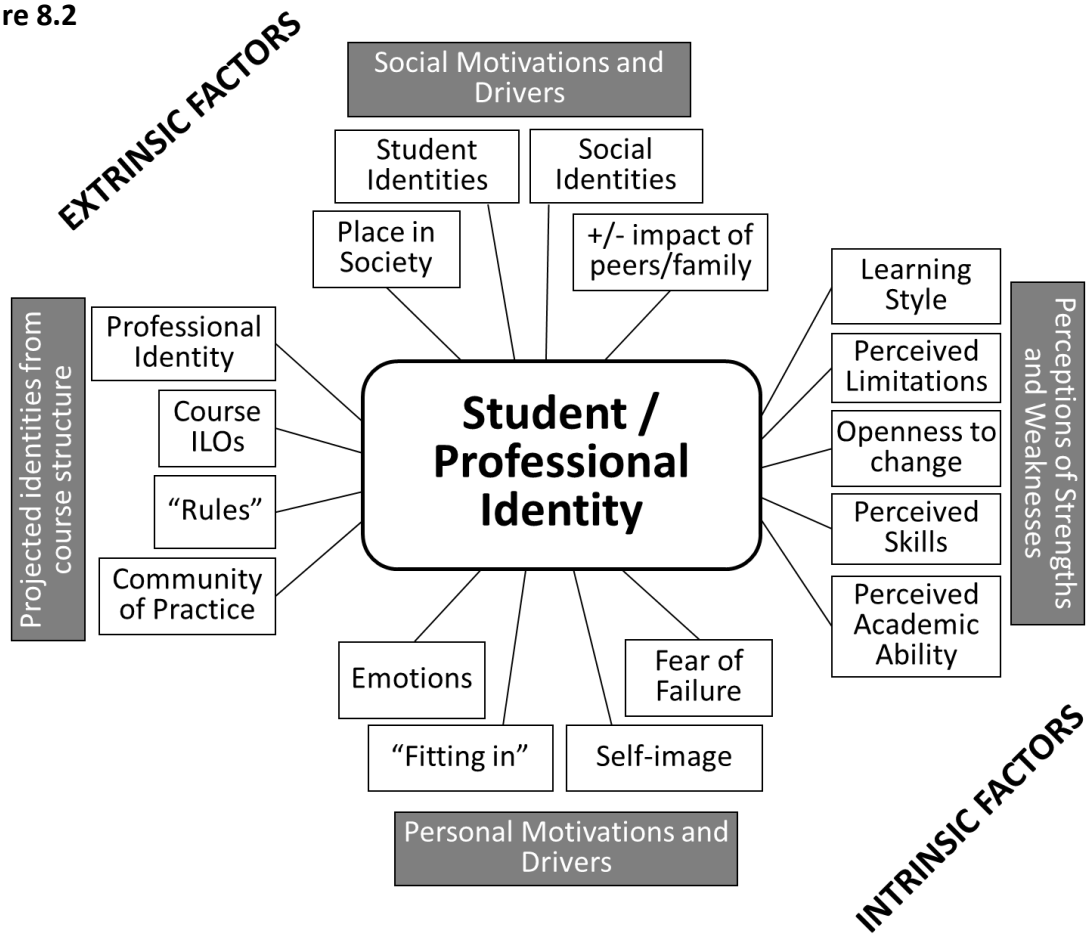

Figure 8.2. Summary of codes comprising the 'Student/Professional Identity' category. Codes emerging from the data are clustered into Extrinsic and Intrinsic factors, each of which is subdivided into two further clusters (grey boxes). White boxes indicate codes related to student/professional identity category. ILO = Intended Learning Outcomes (Biggs & Tang, 2011).

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and friends (Baxter & Britton, 2001). Taken as a whole, these external and internal factors that influence transition, have concepts of identity and self-image at their core.

8.2.1 The impact of extrinsic factors on identity development

Extrinsic factors could be divided into societal factors and course-related factors, and broadly align with key concepts discussed in chapters 6 and 7. Participants used these factors as benchmarks for their own general position in their course, the university, society, class, their world-view (in particular those participants who were part of religious communities), or political persuasions. For example, religious communities were an important part of the identity for Mary, Emily and Raashid, while sport was fundamental to Will's identity, and Welsh, American or French culture were important drivers for Bryn, Grace and Camille, respectively. This latter factor was particularly potent for shaping self-perception and identity relative to their peers.

> …as an international student, it's just a bunch of British people. So it's a little bit difficult for me to get into the group, especially as I have so much different from them.
>
> Raashid (Interview 1)

> I always tell myself, "No it is okay to be different, and people are just asking because they are interested. They are not trying to single you out, they are not trying to reinforce that you are different and you are not part of this group here.".
>
> Grace (Interview 2)

Focusing on how the society impacted on their own identity empowered participants, as they were able to situate themselves and their aspirations within a larger context. An example of this was the quote from Grace in 7.3.3 regarding her being challenged over American grammar and spellings. Although this experience situated Grace as an 'outsider' within the cultural context of her studies, her response to the experience was proactive in revising her study approach to address the issue.

> So what I do now is I write the essay or creative writing piece or whatever. I write it how I would write it, my spelling, my referencing, my everything, and then at the very end I run it through an English spell check, and I have like this [programme] it's called Grammarly, and you can change the language. So I changed that, and then also changed … because sometimes commas are different. The weirdest things are different. I am learning something new every day.
>
> Grace (Interview 2)

Grace's response to this issue was to turn it into a learning experience, that meant her cultural isolation was a source of growth rather than a limitation. Grace's interaction with tutors, technology and peers though this experience suggests that the experiences she faces were integral to the formation of her PLN and the development of her approach to SRL, and to her framing her identity as an 'outsider' into a positive experience.

Extrinsic factors typically had little impact on the development of SRL, but did have some impact on their ability to settle and become confident independent adults. In particular, participants' views of the societal perception of students was a factor here. The overriding social identity of a student, experienced by participants, was of students being hedonistic and work-shy. Some participants (e.g. Kate, Mary, Tony or Nick) took this as a challenge to refute, whilst others (e.g. Andrew, Grace, Raashid and Quentin) saw it as being more limiting, and it affected their own self-worth and self-confidence.

The projected identities from course structure were important for how the participant saw themselves in relation to their discipline, and their future identity as a graduate. The 'rules of the game' theme (discussed in chapter 7) was key here, showing that there was considerable overlap between the themes of identity and communities. The extent to which the participant viewed

themselves as part of the discipline was a major factor in how they identified themselves throughout the course, and in particular at the end of the first year (discussed in more detail in section 8.3).

8.2.2 The impact of intrinsic factors on identity development

Intrinsic factors could also be subdivided, into motivational factors and self-perceptions. Codes relating to motivational factors were primarily related to self-image and emotions. For example, participants who were more positive or content saw themselves as agentic and capable (such as Grace, Will, Simon, Lucy and Andrew). Contrastingly, participants who were less-satisfied with their environment, such as Jane, Kate, Ursula, Orla, Penny, or Quentin, saw themselves more as individuals caught in a process over which they had little control, or were dissociated from.

Fear of fitting in to the peer group or academia was also major driving factor, in particular for those who perceived themselves as coming from different backgrounds such as: Class (such as Ffion or Orla); coming from overseas (such as Camille, Raashid, and Grace); or returning to study after a break (Lucy). Fear of failure was also particularly potent, either based on self-perception, or previous experiences. Typically a lack in self-confidence in participants' own abilities was based on previous experiences of failure prior to University, such as Ursula's previous experience having panic attacks when faced with what she saw as unsurmountable problems, Jane's lack of confidence after failing Year 1 of a maths degree, or Orla experiencing mental health issues at school. Ffion and Isla had both struggled at school. Lucy, as a mature student, had the perception, which is typical of non-traditional student entrants (Mallman & Lee, 2016), that she did not have the academic skills of traditional entrants, and would not be able to adapt or fit-in to university. Quentin, as a dyslexic, was worried that his disability would be a limiting factor.

These motivational 'perceptions of belonging' impacted on the rate at which the participants embedded themselves socially at university, and saw themselves as part of the university community. These factors led to some participants viewing themselves as an 'imposter', and one who did not deserve to be at university.

> I've got a big fear about failing my first year. … I was talking to another guy today, who's a mature student as well, and we met on the first day, and he was like, "I can't believe I'm in University", so I think we're both in the same boat.
>
> Lucy (Interview 1)

Those participants with more confidence and less fear of failure, such as Andrew, Emily, Grace, Kate, Mary, Nick, Simon, Tony, Vic, Will and Zach, fitted-in with their peers very rapidly. As discussed in Chapter 7, time spent settling in socially tended to impact on the development of SRL strategies – especially for formation of PLNs.

The second intrinsic factor, 'perceptions of strengths and weaknesses' arose from super-codes related to self-evaluation and self-criticism. A comparison of these codes highlighted commonalities that we used to develop a series of Positional Maps of declared positions or behaviours in the participants. In particular self-perceptions of academic ability, learning style, openness to change, perceived skills and perceived limitations. The perceived limitations appeared to be the most potent of these factors affecting identity – especially at the beginning of the year. Self-perceptions were particularly powerful in defining the identity of the learner as agentic or otherwise. The perceived scope of the participant's perceived capabilities, and the extent to which they saw themselves as fixed or fluid in their development, were key factors in defining perceived level of agency in their studies. Figure 8.3 shows a positional map comparing participants' perceived academic ability against their perception of themselves as capable or incapable of change. Perceived capabilities and openness to change formed boundaries to their identity, suggesting to them that they were incapable of, or limited in, further development, and whether or not it was worthwhile developing as a learner.

If one reviews the positions associated with those participants open to the concept of change (the right-hand of Figure 8.3), the key features of those positions are the expectation of improvement and development. If the participant viewed themselves as academically capable, then this expectation of change was linked to personal development and reflecting on their transferrable skills.

> I'm definitely going to be changing over the next maybe two or three years. Enormous amount. …it's going to happen. What it's going to look like, I don't know right now, but I can say for sure that I will not be the same person in two years.
>
> Zach (Interview 3)

When viewing the map through the dimension of academic achievement, those participants who reported being high-achievers at school (scoring high grades and receiving good feedback on their work) were less-open to change viewed themselves as restricted or static. They did not see themselves as growing or developing, or see the need to do so, but were confident in what they had achieved and were comfortable how they were. For example, Kate felt that she was capable of completing her course already, and her success was not dependent on personal development, but thorough understanding her own capabilities. Kate did not see change or compromise as an integral and necessary part of her ongoing progress through the course.

> I think I've come more to terms with myself in a way. … I've had to come to terms with who I am … and I've realised that I don't have to do certain things if I don't want to.
>
> Kate (Interview 3)

Figure 8.3

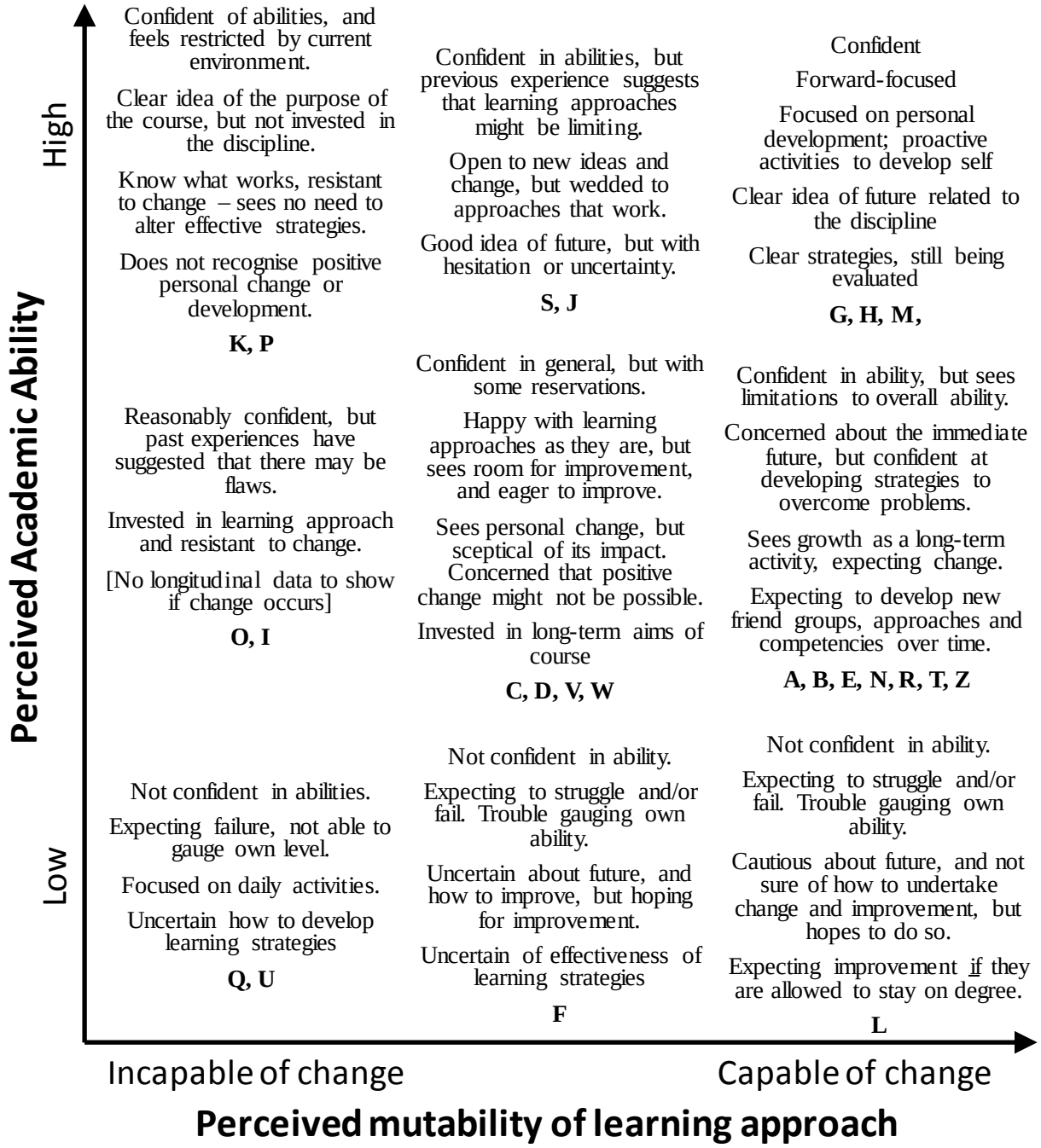

Figure 8.3 – Positional Map of perceived academic ability compared to perceived mutability of learning approach and personal growth. Individuals are positioned into quadrants of the map based on their reported perceptions from the first cycle of interviews. Individuals are identified by their initials in bold (e.g. A = Andrew, B = Bryn, C=Camille, etc).

Those participants who exhibited less confidence in their academic ability (Camille, Ffion, Jane, Lucy, Orla, Quentin, Raashid and Ursula) felt pessimistic about the future, as they saw that there were challenges ahead, but did not see how they could overcome these. For participants who were less confident in their abilities, but open to change (e.g. Ffion and Lucy), they saw improving academic skills as the means to be successful, and were confident of achieving success, but were limited by the concern of whether they would be permitted to stay on the course long enough to see that improvement realised. So academic ability gave confidence about the future, while openness to change empowered the participant to see themselves as capable of growth.

The factors that led participants to see themselves as less-capable of change were primarily based on previous experiences, or belief in a pre-set identity. In particular, especially in the initial interview cycle, it was common for the participants to describe themselves in terms of what there were *not*, rather than what they *were*. For example, not being good at maths or science, or not good at grammar. Tony identified himself as being unable to apply information he had learned, and Camille focused heavily on her difficulties in focusing and concentrating. Quentin saw his dyslexia as a significant limitation, and this strongly impacted on his own self-perception. By identifying their limitations, the participants were not engaging in a self-reflective cycle, but rather identifying areas of themselves that defined them, and that were immutable as a result. Jane's perceived failure in her previous cause was a recurrent factor in her self-image through the year. Similarly, Ffion's conviction that she was not sufficiently capable of her course did not change over the course of the year, despite her reporting receiving good grades in her work in the final interview. This lack of openness to change has significant potential limitation on the iterative nature of SRL, which requires continual re-evaluation of perceived skills and limitations (Doyle, 2011; Dweck, 2006; McGuire, 2015).

An example of an identity which potentially discouraged change was that participants often defined themselves by their perceived 'learning style', most commonly labelling themselves as 'visual learners'. 15 of the participants clearly identified with a learning style, based on their own research and/or experiences.

> I soon began to realise that … I'm quite a visual learner. So, what helps me is not just writing it down a few times, but writing in different forms, different colours, on…coloured paper
>
> Grace (Interview 1)

> So it's very difficult for me, especially as I am a very visual type of a learner, so I visualise stuff and then learn stuff. So I can't sit on one page and memorise things, it's very difficult.
>
> Raashid (Interview 1)

Tony was encouraged by teachers at school to identify his 'learning style', and categorised himself by his findings:

> We did a few things, like, what sort of learner are you (are you visual, audio, kinetic [kinaesthetic], stuff like that), and I found that I was more audio … I've never really been kinetic, ... But I'm quite visual and auditory.
>
> Tony (Interview 1)

Mary, while not identifying with a single learning style herself, did identify a style in a friend. Mary's perception that this defined her friend's learning approach acted as a comparison against which Mary gauged herself.

Despite the general dismissal of learning styles in the recent literature (Newton, 2015), it was clear that these labels were still pervasive in the participants' schools and prior educational environment. This identity was potent to the development of SRL, as it clearly delineated how they felt they learned the best, and informed their choices of PLSs. The perceived learning style was the basis for the study approaches they found most successful, and so it was not necessarily a restrictive factor. But the potential impact on SRL here is that participants might dismiss a novel study approach or a methodology on the basis of this fixed perception, if it did not fit with their perceived learning style.

Professing having a particular learning style also aligned on the positional map with openness to change. Participants such as Andrew, Mary, Nick, Raashid, tony and Zach saw themselves (to a varying degree) as capable of changing and developing as a person, or as a learner. When asked to reflect, in the final interview, on how they had changed over the year and if they felt they would change in the future, these individuals saw themselves very much as undergoing a process of change, in which they were at the opening stages.

8.3 Disciplinary identity

The course-related factors encouraged the participants to see themselves as within a 'tribe' (Becher, 1989), either of the discipline (though this was rare), as a student, or as a student of the discipline (e.g. an 'English student' or a 'Chemistry student'). This disciplinary identity was investigated specifically in the final round of interviews, at the point in which the participants had spent a year embedding themselves within the course. When asked how they would describe themselves to a stranger, only Tony referred to himself as a practitioner of his discipline, rather than as a student:

> I'd probably say [I'm] a chemist. I do like that. I'd love to be able to fully say that eventually, because that's the goal really. Yeah, I'm a chemist, and then they'd be what can you do? I can say yeah, I can make things really. I can take two things and put them together, and make whatever I really want.
>
> Tony (Interview 3)

Figure 8.4

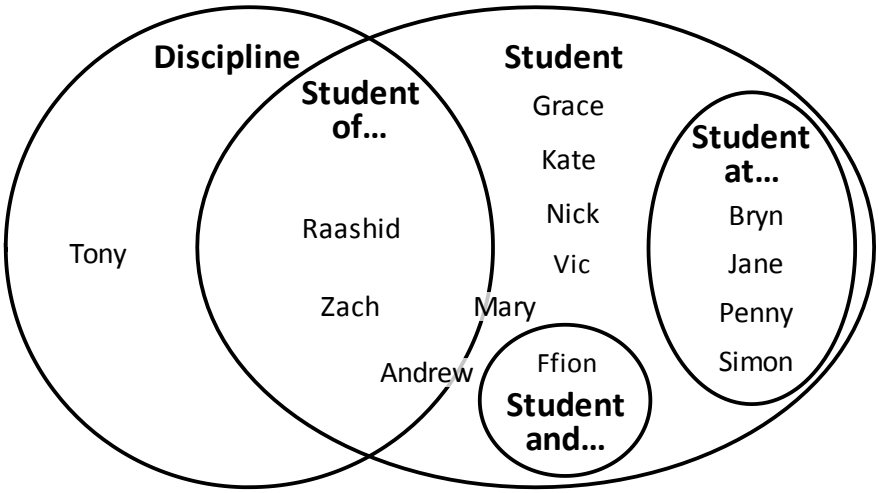

Figure 8.4 – Summary of personal descriptions made by participants. When asked how they would describe themselves to a stranger in the final interview, the participants either identified as a student (in some cases a student of a subject, a student and something else, or a student of their institution), or as a member of the discipline. Mary and Andrew both qualified their answers with conditions, meaning they could be considered part of two groupings. Camille was not asked this question in the interview, and so is missing from the data.

Tony's identity was one of a trainee professional, rather than a student, which aligned well with his clear ideas of his career pathway. All of the remaining participants described themselves as a student, but that identity as a student was nuanced. Figure 8.4 summarises the distribution of these responses: Some defined themselves simply as a student; others as a student of a subject, or a student at their named university.

For some participants, the nuanced description of themselves as a student seemed to be highly significant to their identity. Raashid and Zach perceived themselves as a student of a discipline, while Andrew and Mary said they would explain that they would define themselves as a student first, and then, if asked, emphasise their discipline. It is interesting that the three participants with a strong discipline alignment were all Chemistry students. Perhaps this trend was because there is a clearer discipline identity in this subject, but there was insufficient data to be conclusive. In a similar manner, Ffion identified herself as a student and a mother, because her daughter was a major factor in her life. The reference to the institution of study was a significant factor for those that mentioned it (Bryn Jane, Penny and Simon), suggesting a greater affiliation to the institution rather than the discipline for a collective identity. Bryn noticed this, as it was a cultural and linguistic difference, he felt, related to Welsh and non-Welsh individuals:

> …the way that you'd communicate what you're doing in Welsh and in English, it's quite different. … I've noticed it, and it's a very small detail, but if someone asks you [in Welsh] what you do, it's "I'm in Uni in Cardiff", rather than saying the subject that you study. Whereas if you talk to someone in English, then they say the subject first.
>
> Bryn (Interview 3)

In some cases, participants said they would modify their response depending on whom they were addressing. For example, Andrew and Nick said they would provide more or less detail, depending on their conversational partner's background. Mary preferred to refer to herself as studying ancient history rather than religion, because she felt that mentioning religion would potentially cause a socially-awkward negative reaction. Mary retained this perception, despite having already decided to change to Religious Studies as a single honours subject. There was a clear sense of being apologetic about being a student in most participants' answers, which reflected their own perceptions of negative societal attitudes towards students. Identity was particularly impacted by self-consciousness about others' perceptions – especially perceived negative societal perceptions about being a student.

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The 'established identity' super-code (Figure 8.1) from the third interview cycle parallels codes related to 'establishing identity' in the second interview cycle. At the second interview cycle, the participants had clearly identified their role and position within their social group, and their role in their own (and others') PLN. For example, English students often established an identity based on their writing and proof-reading skills, as Hannah emphasised (see section 6.5.4). Hannah's comment suggests that this identity gave the participants a purpose, and reinforced self-confidence and perceived value in their own worth. In turn, this confidence led to motivation and a feeling of being part of a larger community. Despite the lack of feeling embedded in the discipline (see chapter 7), participants' establishment of an identity as part of a tribe, or series of tribes, appears to be a key factor in the transition during year 1. Along with the issues of enculturation in the discipline, raised in Chapter 7, there is also a key issue of aligning new students with a sense of belonging to a positive and supportive group. Inclusion in a group can help define identity, and lead to feelings of self-worth and agency (Tinto, 1998, 2012). This was the case with those participants who were part of a defined social group. For example, Bryn felt empowered as part of the Welsh community in the University.

> Yeah, I've been up quite a bit with Welsh society, and made lots of friends there. Plus there's a lot of friends my block of flats, … I think the Welsh society is starting to settle in, and so I'm starting to know more people on my course. Something you can focus more on that next year, really, because you get more out of university the more people you know.
>
> Bryn (Interview 3)

Agentic identity can potentially suffer if this sense of belonging is impaired. Ffion, for example, partly due to her commuting to university, and having a child to raise, did not see herself as her own agent of change, but rather as a passive partner in the process of her learning.

> I think I need to perfect some ways of doing work. And sometimes, I'm just … deadlines just creep up on you, and it's just a huge panic; and I don't think That should be happening. Hopefully well, it won't happen next year.
>
> Ffion (Interview 3)

Developing an agentic identity was therefore a fundamental factor to the successful transition and developing SRL.

8.4 Investment in the discipline, and perceived levels of ability

Agentic identity was also influenced by the extent to which the participant was personally invested in their chosen subject. Some individuals had a strong passion for their subject, and were highly motivated by this; others saw their choice of subject as a means to an end for obtaining a good degree grade outcome. This integration of factors led to characteristic positions and self-identities, as being either agentic drivers of their own learning, and capable to developing as self-regulated learners, or passive passengers in a process which was largely enacted *upon* them, rather than driven by them. Figure 8.5 illustrates a positional map of these perceptions, between the two axes of perceived academic ability and investment in the subject. It should be emphasised that the positional map was drawn based on the participants' own *perceptions* of their abilities, rather than from any direct quantitative measurement of engagement, or reference to previous grades.

Highly-invested individuals who were confident in their own academic ability, such as Grace, Simon, Mary, or Hannah, each showed openness to ongoing development, but identified themselves as being limited by their environment and the course structure. These individuals saw themselves as highly agentic, and able to define their own future development, if the opportunities were afforded them.

Participants, such as Kate and Penny, who were confident in their own abilities, but relatively lacking in personal investment into their subject, were confident in their progress, but did not see themselves as agentic within their studies. They felt restricted by course structures, logistical issues, and what they saw as activities that were needless or obstructive. For example, Penny was intensely frustrated at being forced to study ancient history due to over-recruitment of students onto the history course that year. Kate and Penny felt that that they had the potential for growth, but were being restricted

Figure 8.5

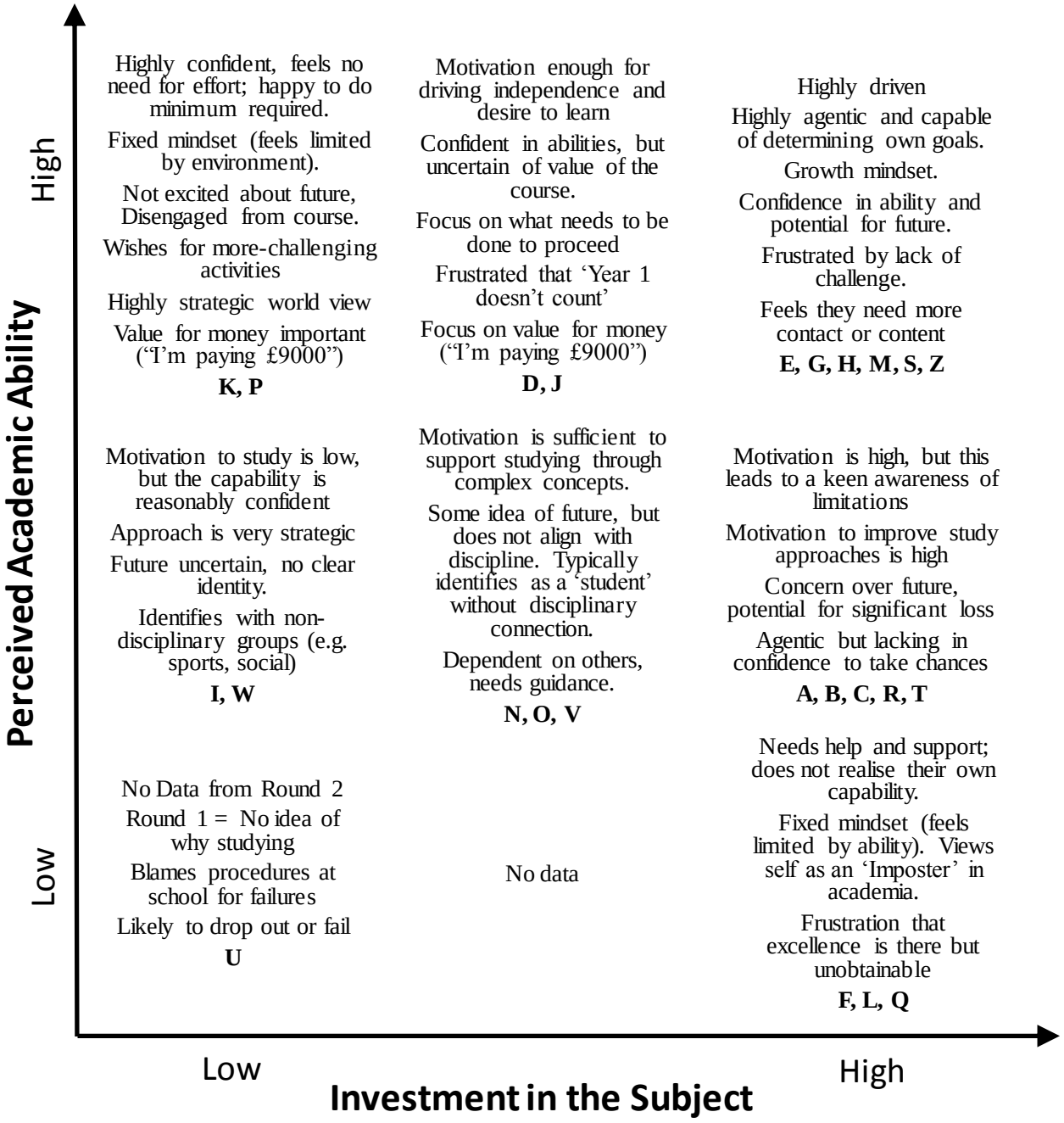

Figure 8.5 – Positional Map of perceived academic ability compared to personal investment in the subject. Individuals are positioned into quadrants of the map based on their reported perceptions from the interviews. Data were used from all interviews with each participant. Individuals are identified by their initials in bold (e.g. A = Andrew, B = Bryn).

from realising that potential by what they perceived as needless bureaucracy or course structures (such as a focus on format of essays rather than content, limited numbers on modules of interest, or seemingly needless reading assignments before seminars). As a result, they did not identify with their discipline, seeing their degree as a necessary step to enable future career options.

> I've always been interested in history, but I see it as a stepping stone. If I didn't have to come to university I wouldn't. … but it's a lot harder to go into teaching without a degree.
>
> Penny (Interview 3)

Individuals with high perceived ability, but low-to-medium investment typically saw themselves very much as consumers of a product, rather than active participants in the learning process, and mention of value for money, or the importance of the cost fees, was common. Individuals who were highly-invested, but lacking in confidence in their ability (such as Lucy, Quentin and Ffion) also viewed themselves as being restricted, but due to their own inability to cope with the academic demands of the course, either based on their own perceived intelligence, and/or ability to cope with disabilities. These individuals also presented as feeling inadequate for effective growth, and unsure of what constituted a good outcome. However, both Ffion and Lucy completed the year successfully, and Ffion saw herself as more agentic at the end.

> I think I need to perfect some ways of doing work … So, I'm going to I need to be more organised; I've become more organised, but I was the most unorganised person before. … I'm looking forward to next year, because there's a lot a lot more choice With modules and things. And I'm excited to learn more.
>
> Ffion (Interview 3)

Those individuals with medium levels of perceived ability saw themselves as agentic and able to grow, but with limitations. They could identify restrictions to their development, but usually could think of ways around these limitations, or were confident that they would overcome them in future. Increasing levels of investment meant that they identified more with their discipline. Raashid and Tony (high levels of investment) saw themselves as fundamentally embedded in the discipline, but potentially limited from full integration by their academic skills and competencies. Conversely, Will (low investment) was not motivated by Chemistry, and identified more with social and sports groups within the university.

Intrinsic factors of motivation and perceived ability therefore appeared to have significant impacts on how the participants perceived themselves in relation to the subject and their role in the learning process. In particular this caused them to align with particular discourses, such being 'customers' of the university, or victims of an unfair system; or to feel trapped or empowered by their own academic ability. Their ability to identify as agentic individuals was therefore impacted by perceived ability and investment in the discipline.

8.5 Investment in the subject and perceived levels of agency

Identity also appeared to be defined by how investment in the subject was related to perceived levels of independence and agency. Figure 8.6 shows another positional map of these factors, and how they manifested themselves in the identity of the participants. Highly-invested and highly-agentic individuals saw themselves as 'works in progress', and that they were at the beginning of a journey of self-development. These individuals typically saw themselves as having changed significantly across the course of the year, and that this was part of an ongoing process of self-development that would continue for the near future.

> I believe a person changes from one day to another. It's probably not obvious change, but I believe that you always change as a person.
>
> Zach (Interview 3)

> I think I've become more open-minded, just in terms of ideas. So, concept that I read in books, but I have no idea of before, is just those sorts of things that you realise that obviously there are more things I have to learn.
>
> Bryn (Interview 3)

> I would definitely say I have become more independent. Especially, being at home, it's not the place I'm most comfortable being; it's here.
>
> Simon (Interview 3)

Zach felt that he had changed significantly in his personality, and continued to do so; while Bryn and Simon recognised that their outlook had changed to become either more open-minded, or more independent and comfortable as a student. This view of identity development as part of an ongoing process of change is characteristic that correlates with those who manage transition to university successfully (Christie et al., 2016; MacNamara & Collins, 2010). Therefore seeing identity as malleable and an ongoing 'journey' is an important factor.

Participants with lesser investment in their studies, or perceptions of agency, focused more on the social aspects of change. Penny claimed to have become less-sociable, while Jane identified that she was in a better social group now than before.

> I think a bit less sociable. I should be more, but I think I'm less. Definitely less. … I don't feel the need to be social any more. It sounds terrible, I'm happy with them, and I don't feel the need to push myself out of my comfort zone, and to force myself on other people.
>
> Penny (Interview 3)

> My mum says I have [changed]. She's like, "I liked you more when you were at [former university]". … I think it's because … I think she wants me to be really posh, and my friends

Figure 8.6

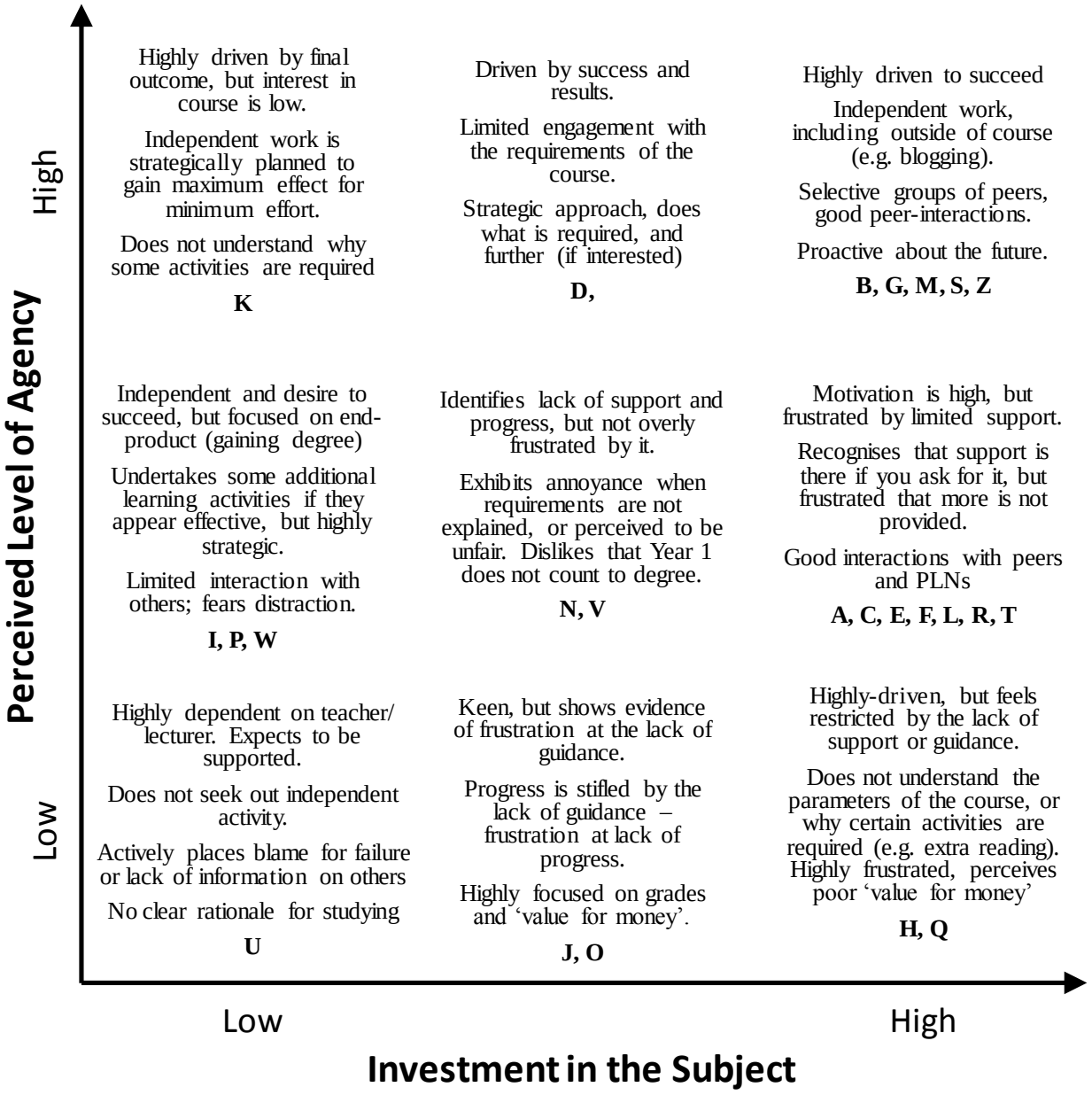

Figure 8.6 – Positional Map of perceived agency vs personal investment in the subject. Each quadrant identifies positions taken by individuals who map to each axis (individuals representing the data are identified by their initials).

> in Bristol were very posh …and she liked that influence on me. Whereas my friends here and not posh, really. ...I like myself more now, I'm not posh but I'm happy."
>
> Jane (Interview 3)

Both Penny and Jane recognised that they had changed personally and socially, but similarly they felt very much driven by their degree and their current situation, rather than agentic drivers of their own experiences. Kate, who was highly agentic, but lacking personal investment in the subject, saw herself as being able to achieve excellent results without the effort that others required. Kate did not feel at all stretched by her degree, and was very practical about her relationship to the course, seeing the final outcome as a goal, rather than the developmental journey being of importance. A similar approach was taken by Penny and Will, who saw the course as progress towards graduation and a qualification, rather than a learning process of self-discovery and development.

High levels of agency associated with investment with the idea of personal development, only if they were also matched by high degrees of motivation. Identity can change for the worse if the activity of the student is not matched with their eventual goals or aspirations (Lindblom-Ylänne & Lonka, 1999). Without the motivational drivers, the agency almost became a hindrance to identity development, with participants feeling restricted by their progress on the course, rather than supported by it. Motivational drivers are highlighted by Wenger (1998) as key fundamentals to the development of agentic identity. Agency therefore needs to be tempered with other factors, and can impact on identity in both positive and negative ways.

8.6 The importance of challenge in developing identity

Participants were posed a hypothetical situation whereby they could travel back in time to speak to their younger selves during enrolment week. When asked what they would say in such a situation, the responses were grouped into one of two ways. Some individuals, such as Andrew, Raashid, Vic, or Camille, suggested very specific pieces of advice, such as specific things to do or not do. Examples of these suggestions included starting revision early, managing workload, or avoiding a particular kind of study technique.

> Calm down, do a sport (because I haven't, and I feel I should have), and just keep on top of it. Because there were a couple of points during the year where I had let my work lag behind where it should have been. I felt like that was a big mistake because then during the next week I'd be forcing myself to do twice the amount of work to catch up again because last week I had a week off for no reason except laziness. So yeah, keep on top of it.
>
> Vic (Interview 3)

The vast majority of participants, however, suggested that they would not provide any guidance other than a reassurance that things would work out, and their younger self would cope. This was the case for all but two of the participants (Camille and Vic). Even Andrew and Raashid who had also made specific suggestions, also offered broad advice that the future would work out and not to worry.

> Don't worry so much about things, don't worry about things socially or academic things, because everyone is in the same process in the first year … everyone is in the same boat.
>
> Bryn (Interview 3)

> I don't know. I properly tell myself to chill out a little bit. I don't really get nervous though, but I can tell when I'm nervous, because I bite my nails. Like I'd tell them, it's not the end of the world of I don't pass all of this.
>
> Penny (Interview 3)

> I think I would tell them that this is the right course for me, because for the first few weeks I wasn't sure about that. And that it's going to get easier … but yeah, general stuff like that. Just more assuring.
>
> Simon (Interview 3)

> You've done well, you'll figure it out.
>
> Zach (Interview 3)

This avoidance of offering direct advice was related to the participants viewing the transition to HE as a learning journey and a process of discovery. To them, the act of experiencing both the good aspects and the bad, complete with frustrations and problems, was a fundamental part of the learning experience. In addition, as shown by Camille below, several participants suggested that they probably would not have listened to the advice anyway, and needed to discover it for themselves.

> I think I needed to try different things. … So I don't think I would say much, because even if it wasn't always successful, I think I would have tried things anyway, even if I had been told the right way to do it.
>
> Camille (Interview 3)

This observation suggests that all of the participants who reached the third interview cycle saw themselves as part of an ongoing learning process, which involved both successes and mistakes, positive experiences and struggles. The mistakes and struggles were just as important as the positive outcomes. Even Vic's advice quoted above, was based on his reflection on what would have been a general improvement for him. In this regard, which was quite separate to the course itself, the participants did identify themselves as being part of an ongoing process of development, even if they saw their own academic development as limited or fixed. This metacognitive understanding that

learning requires failure and struggle, as well as success, is a key component of self-regulation (Schraw, 1998), and reinforces that the participants who took part in the final cycle of interviews were effective and reflective self-regulated learners.

8.7 Conclusions

The formation of an agentic identity (see section 2.5.2) is fundamental to a student developing self-reflective learning (Ashwin et al., 2015). These identities are both intrinsic (personal) and extrinsic (social), so that the identity develops in parallel between personal drivers and those of society around them. Students are constantly reconstructing identities from when they begin to plan on their choice of university, to the choices they make when on their course (Ashwin et al., 2015). Identity can be impacted by events as well as social groups, and is closely aligned with the development of learning approaches and academic progress (Wortham, 2006). Students who perceive themselves as capable or successful were better able to overcome challenges to their development (MacNamara & Collins, 2010). A student who struggles with finding their place within the institution and/or social groups will struggle academically, even if they are academic high-achievers (Mendaglio, 2013). Identity is highly significant for effective transition to an andragogic style of learning.

The identities revealed in this analysis suggest that the key factors to students' identity development were self-perceptions of academic ability and their own sense of agency, linked closely to motivations such as their investment in the subject and feelings of self-worth. Of all of the factors, it appears to be that self-perceptions (in particular the negative self-images pervading the students' views of ability and worth) are the most limiting to the development of an agentic identity. However, social and societal factors are also important, as they influence the development of personal self-perceptions. The importance of social and societal influences is supported by previous work (Billett, 2006; Nixon, 1996; Schwartz et al., 2016; Ugur, Constantinescu, & Stevens, 2015) highlighting the impact of social and wider-societal factors on identity.

Those who were less confident in their academic ability, such as Ffion, Lucy or Ursula, struggled to acclimatise to the course at first. Ursula withdrew from her course during the first semester, but Ffion and Lucy did manage to acclimatise and gain confidence throughout the year. Indeed, Ffion was one of the first to understand the requirements of university study, although she remained unconfident in her academic ability, and in the second interview, where she was awaiting the results of her first assignment, she had no idea of whether she had been successful or not. Jane quickly developed confidence in her abilities, using her previous experience as a benchmark for her progress. So based on these participants' experiences, it is possible that motivational factors for those with less confidence can either be a route to catastrophic failure or accelerated success.

A potential model of identity development, based on the data and the literature, is proposed in Figure 8.7. Identity is formed from both personal, social and societal factors, and these are depicted as concentric rings to highlight that each layer is impacted by the other layers around it. The most immediate to the student are the personal factors – motivations, self-image, perceptions of strengths and limitations, personal goals and reactions to emotions. Personal factors are affected by immediate social factors, such as relationships with peers, friends, family, their teachers/tutors, and the discipline with which they are aligned. Finally, over-arching societal factors influence both social and personal factors. For example, negative perceptions of students in the media, societal images of class, gender, ethnicity, social demographics, treatment of foreigners, or people perceived as 'different', as well as the expectations placed on young people. These factors all impact upon the degree to which the student can identify with their discipline, engage with their studies, and develop SRL.

The finding that the participants saw themselves as fluid or fixed for certain characteristics or aspects of their learning was highly reminiscent of Carol Dweck's model of 'fixed' and 'growth' mindsets (Dweck, 2006). Although challenged by some (e.g. Hattie, 2017), Dweck's theories might potentially

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Figure 8.7

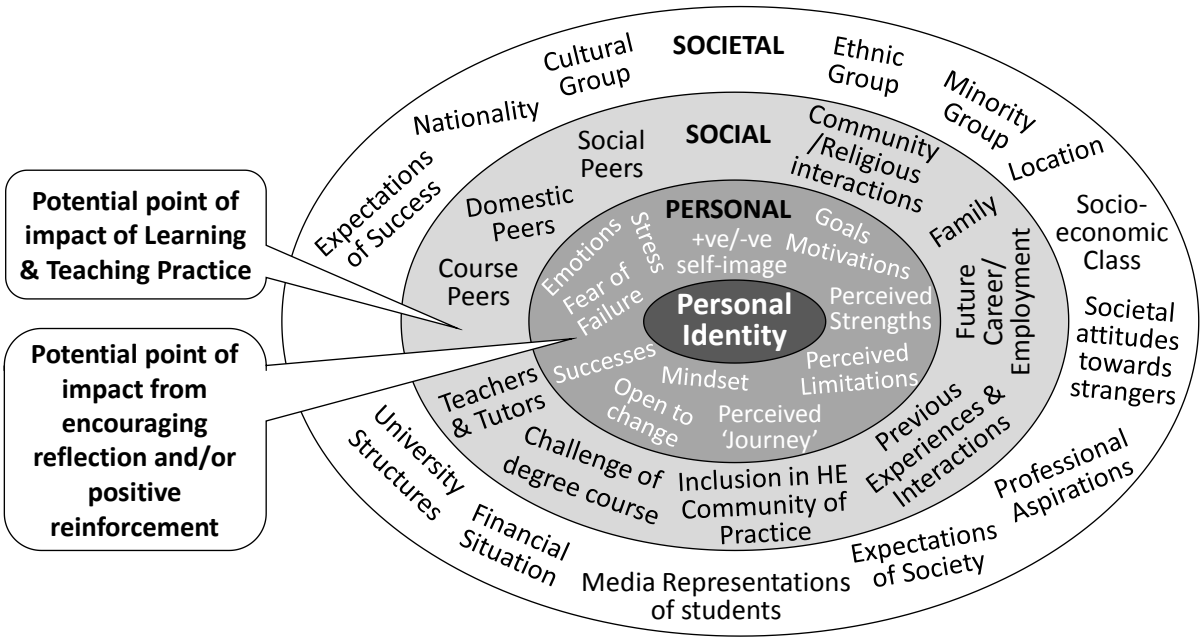

Figure 8.7 – Model for the factors impacting the development of identity as a learner in HE. The concentric layers of intrinsic and extrinsic factors define identity as a learner. Personal factors, such as self-image, mindset and self-perceptions of ability are informed by social interactions with peers, family, teachers/tutors and non-human factors such as previous experiences, future aims, and the extent of inclusion in the community of HE practitioners. Societal factors influence both of these layers, defining personal perceptions and social interactions. Two points of impact from changed learning and teaching practice are indicated on the left.

be an interesting model against which to review these findings. Fixed mindset individuals (such as Jane, Kate, Quentin, Ursula or Ffion in this study) are incapable or unwilling to forsee significant development in their cognitive abilities. A refusal to be reflexive and open to change regarding SRL could parallel this concept, and potentially stifle academic growth and development over the course of a degree.

In his guidance for encouraging development of SRL, Doyle (2011) suggests approaches for encouraging reflexivity through scaffolded social interactions and group discussions between peers, and between students and the teacher. The challenge to academics therefore may be to support the identity development of students, so that they can acclimatise and enculturalise themselves into the new community of learners that they find themselves in. The two boxes in figure 8.7 highlight those layers of influence over identity that could potentially be supported - either by change in educational practice, or the support of students. The key appears to be linking perceptions of agency and confidence in their academic ability, as well as inspiring engagement with the discipline, and involvement with the practical community of the discipline. The balance between these factors can be either positive or inhibitory for the development of a proactive agentic identity. Identity may be a gatekeeper to willingness to attempt the academic development required for effective transition to University. Openness to change may impact upon outlook and metacognitive ability and the learner's ability to define their position, relative to their peers, the teachers, disciplinary experts, and even their past selves. Examples of openness to change in this study include Simon's willingness to revise his tried-and-tested technique of copying out his notes, or Grace's recurrent proactive reaction to setbacks or challenges

> I sat there and said okay, I'm getting bad grades, I'm not understanding it, I'm feeling frustrated, and overall I'm not feeling happy. So I thought, I started to think what helps me. So, I tried out different things.
>
> Grace (Interview 1)

Philosophical models of perceptions of the self may also be an interesting additional layer of analysis that could be applied to these data. In particular essentialist versus non-essentialist models (Dulaney, Graupmann, & Quinn, 2019). Essentialist models of self suggest that an individual perceives themselves as an entity capable of agentic change towards a particular goal or aim. Non-essentialist models suggest that the self is fundamentally impacted by external factors, which push the individual in one direction or another. These notions align closely with the concept of agency, and it would be interesting to investigate the participants' own perceptions of self, as being primarily either essentialist and agentic, or non-essentialist and subject to external impacts.

The findings summarised in this chapter suggest that identity is formed in concert with the development of social interactions, and particularly PLNs. This finding aligns with the findings of

Christie et al. (2016), whose longitudinal study of student experiences, showed that identities continually re-shaped themselves over the course of a degree. These identities were defined by social interactions and relationships, and so they changed and morphed with each stage and its new relationships that were formed. This does imply that identity is something that can be shaped, and even assisted in its development. Identity development has an implication for practice within the sector, that support for identity development may be as important as support for SRL methodologies, as well as delivery of content, and courses potentially need to adjust to accommodate this requirement.

The identification of identity within this study was not an explicit focus within the initial research questions, but instead emerged from the CGTh analysis. Identity and identity change are extensive and complex issues, with numerous impacting factors, especially in relation to education (discussed extensively in Chickering & Reisser, 1993). Therefore, this aspect of the analysis requires considerable further investigation. In particular, it will be important to identify how identity changes over the course of the degree, and what disciplinary differences there are between students of vocational or professional degrees versus more-academic subjects. The link of identity to agency, and of these to perceptions of one's own roles and responsibilities in andragogic learning. would be interesting to evaluate further. Each of these will have significant impact on how self-regulation develops, and how the learner involves others in their learning development.

Chapter 9

DISCUSSION, FUTURE DIRECTIONS, AND IMPLICATIONS FOR PRACTICE

9.1 Aligning key findings to research questions and implications for practice

The findings addressed the research questions (RQs) and provided insights to inform professional practice. The four themes, and the categories within them, each addressed one or more RQ. Figure 9.1 summarises the alignment of RQs to categories/themes. RQ1 and RQ2 align closely with 'Developing Study Approaches' and 'Social Interactions' respectively. 'Learning the Rules of the Game' addresses RQ3, as this theme focuses on participants' views of their relationship to the discipline. 'Developing Identity' addresses elements of RQ4; this theme focuses around a major factor that influences the progressive development as an independent learner. 'Developing Identity' also helps address RQ3, as identity is linked to perceptions of agency and responsibility within the disciplinary social world.

The categories and themes in Figure 9.1 are positioned to show the strength of alignment with each RQ. Some categories are more-closely aligned to one RQ, whereas others exhibit alignment with more than one. 'Learning Cues' and 'Importance of Effort', for example, address RQ1, and have little relevance to other RQs. 'Personal Learning networks' is most strongly aligned with RQ2, as it refers to interactions with peers. This category also focuses on a participant understanding their role in the learning community, and their potential impact (RQ3); the PLN is a social and environmental construct, which addresses RQ4, and the support offered as part of a PLN impacts on the study approaches that individuals develop (RQ1). 'Identity development' is focused around the participant developing independence (RQ4), but also addresses the developing self-perceptions of agency and responsibility, and so is equally relevant to RQ3.

9.2.1 Research Question 1: What self-regulated learning activities do Year 1 undergraduate students undertake, and why did they adopt these?

Each participant had developed 'personal learning strategies' (PLSs) that worked for them in school, and this had been an iterative process of trial and error over an extended period. Participants then attempted to revise these PLSs over the initial stages of their degree course. PLSs were highly bespoke, and based on both personal experience, experimentation, and the advice of others, although typically personal preference was the key decider in which strategy was to be adopted.

Figure 9.1

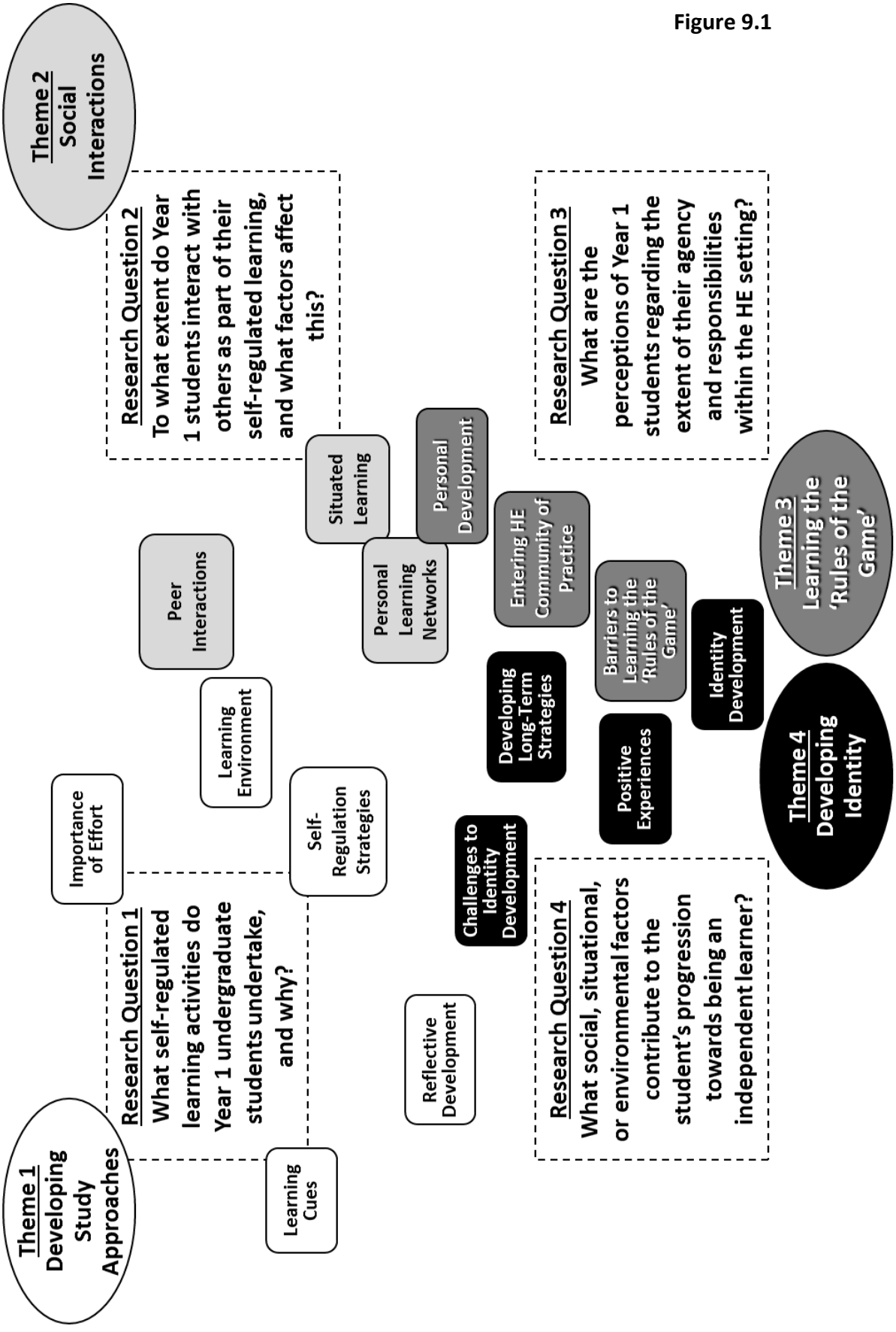

Figure 9.1 – Alignment of themes and categories with the research questions. The four research questions are summarised in the dashed-line boxes. Each of the themes (ellipses) and categories (lozenges) is positioned relative to the research question(s) they are most-instrumental in addressing. Themes and their cognate categories are indicated by the same colour of shading.

While there are commonalities in approaches to each PLS, each individual approach was tailored firstly to the individual's own conceptual framework (e.g. how they related to colour and structure, how they remembered things, or understood difficult concepts). This approach required metacognitive ability, a core element of the Leahmann et al. (2014) and Boerkarts (1999) models of SRL (see section 2.3.1). Participants also tailored their PLS to the needs of the subject discipline, a key aspect of andragogy, as defined by Knowles (1990) in section as well as the 2.2.1. They developed different strategies for factual-based (e.g. science), procedural subjects (e.g. maths), or discursive subjects (e.g. English, history, or philosophy). These PLSs were often highly strategic in nature (see section 2.2.3), and directed towards performing well in examination conditions.

The key finding for RQ1 was that the participants actively selected each study approach, and used these to build a PLS which they aligned with the participant's identity, and perceptions of how best they learned. Participants aligned well with all elements of Boerkarts's (1999) three-layered model of SRL. ***Regulation of the self*** was evident, as participants were capable of identifying their own goals, and the resources needed to achieve them. ***Regulation of the learning process*** was clearly evident from the participants' adoption of bespoke PLSs. ***Regulation of processing modes*** was also evident, as the participants had identified clear cognitive strategies that worked and were efficient for their needs. A common assumption within the HE sector is that undergraduate students lack the capability for SRL (Doyle, 2011). This study has identified that the participants *already* evidenced highly-developed SRL, and exhibited characteristics of effective self-regulated learners.

The challenge to participants was adapting those strategies to the different requirements of learning in HE (as discussed in section 2.1.2). The needs of the university discipline were quite different to those at school or college, a gap that was a potential cause of student failure in Tinto's (1975) model. The strategic approaches adopted prior to university were no longer effective for the volume of content (in both science and humanities students), or to address the different (and poorly-explained) academic competencies required for university. The *adaptation* of SRL was therefore the key difficulty in the transition of the participant to university study, not the adoption of SRL from first principles. This aligns with the findings of Maunder et al. (2013) that successful transitions to HE were ones of adaptation of pre-existing experiences and perceived as an ongoing journey of self-development. The adaptation of SRL to the new andragogic environment needed to be supported, and for the participants, that support was typically limited. Indeed, there was a range of barriers to effective adaptation of SRL approaches that inhibited their development (section 7.4.1).

Implications for practice: A key implication of these findings is that SRL does not need to be *taught* to new undergraduates, but the adaptation of PLSs and SRL strategies needs to be supported. A typical approach in HE curricula is to develop 'academic skills' modules/courses, or to provide 'transition activities' at the beginning of the academic year that introduce new students to university, and teach them to be self-regulated learners. This study suggests that teaching students to be self-

regulated is unnecessary, possibly even counter-productive. Instead, a better approach might be a two-step process. The first stage might be to facilitate sharing of best practice between students. Instead of imposing recommended study methods on students, there should be opportunities to link with peers who use similar PLSs. Some of these PLSs might be effective, some less so, and there will most likely be differences between PLSs for different disciplines. However, discursive talk between these individuals should empower them to evaluate and adapt their current favoured approaches (Martin, 2004; McGuire, 2015). The second stage in this process might be to provide students with an opportunity (or, ideally, several opportunities spread out over time, as this is a developmental process) to put their PLS into practice within the HE discipline they have chosen. There would need to be opportunities to reflect-upon the success of the PLSs, and discuss how they need to adapt their PLS to meet the needs of the HE curriculum, compared to their previous experiences (Christie et al., 2016). The learners would then have ownership of their new PLS, which would still be personalised to them, but would have been encouraged to critique, evaluate, and develop it to meet the different needs of their new disciplinary environment.

It is important to note that these findings are based on the experiences of a self-selecting group of students at a research-led university with a high entry tariff. The same findings may not apply to lower-achieving students, students from failing schools or disadvantaged social backgrounds, or students whose educational histories mean they did not have the opportunity to develop strategies at school. In these cases a more-supported approach, facilitating the trial-and-error experiential learning enjoyed by the participants in this study, would be preferable. Encouraging students to reflect on what is effective and what is not would be the key here, and supporting them in metacognitive strategies to identify effective learning approaches would be required.

9.2.2 Research Question 2: To what extent do Year 1 students interact with others as part of SRL, and what factors affect this?

A major finding of this study was that peer interaction is of fundamental importance to the development of SRL. Participants utilised others in their learning in a variety of ways. Study partners or groups were sometimes used to co-create ideas, or collaborate towards a shared understanding of a subject. A common approach was to develop effective networks for knowledge sharing, reinforcing understanding, or mutual support. Key to effective learning was the establishment of 'personal learning networks' (PLNs), involving both individuals, groups, activities and technologies (Elliott, 2009). PLNs were highly personal and bespoke to each individual. PLNs were well-established at school, and were remodelled quickly at university, and underwent ongoing adaptation over time. Participants typically featured in the PLNs of others , and there was a strong element of building social capital (Bourdieu, 1986) through the reciprocity of support. What was surprising from the data was that course-based peers were of little impact on the development of PLNs, in particular for the

humanities students, who rarely interacted with others on their course. Instead, the domestic peers (housemates) of the participants were more impactful. This finding was unexpected, as humanities disciplines, being highly discursive and based on argument and opinion, might *a priori* be expected to be the more social disciplines. However, limited class contact time, and concern over plagiarism or theft of original ideas, meant that the humanities students typically failed to interact with their course peers. The science students, by contrast, were forced into mutualistic groups, such as in laboratory practical classes, and therefore quickly grew to know peers on their course.

The strategic requirements of a school-based environment, and the requirements of a fairly-strategic view of the Year 1 course, meant that the constitution of the PLN at either level was highly functional. The PLN was primarily peers who could perform functions such as answering questions or proof reading; individuals whose function was to motivate or provide moral support; or individuals who could challenge ideas and help confirm or develop ideas. However, by the third interview cycle, the participants were beginning to redefine their PLNs and gain a more-holistic view of their subject. This follows the findings of Dabbagh and Kitsantas (2012), who noted that students continually redefined their PLN as they developed. With a few exceptions, the participants were interested and engaged in their subject matter, and keen to develop a broader understanding. They had begun to understand the wider focus and aims of the degree, and in some cases had begun to form networks focused on more conceptual understandings, rather than highly strategic solutions to short term problems.

Implications for practice: Implications for practice centre around supporting social interactions between peers. Approaches could be the encouragement of personal interactions, such as including regular group work, or bonding, teamwork, or discussion activities in groups small enough to encourage social bonds to form. In addition, care needs to be given to remove barriers to interaction, such as discourses around plagiarism and originality. The clear effect of this on the humanities students was to stifle discussion and communication, which potentially limited the academic development of the students. Certainly it bred an environment of self-absorption, rather than collaboration and critiquing of each other's ideas. In addition, identifying the PLN as a concept to new students, and encouraging them to reflect on their own current PLNs, might be a beneficial approach. Providing social spaces where students can work and collaborate together would also be beneficial to this development.

As the domestic peers are of major importance to the development of SRL, there is a potential argument for social-engineering peer groups by locating students of specific disciplines together in university accommodations. However, the nature of the PLNs formed by the participants was enriched by the diverse nature of their social groups. Each member of the group was able to contribute differently to the PLNs that were created, with some supporting writing, others proof-reading, maths, or study skills, even life skills and answering everyday problems of being an independent adult. Therefore there is a clear potential benefit to having diverse groups of domestic

peers. What is more important is to strengthen *additional* opportunities for course-peer friendship groups to form, so that students are provided with more social links, and more opportunities to construct enriched PLNs.

A key factor for consideration in this aspect of the project is regarding those students who did not have domestic peers within the first year, such as students who lived at home and commuted. These participants had potentially-limited PLNs, and were therefore potentially challenged in their development of SRL. This challenge is a particular issue for institutions whose student populations do not typically populate halls of residence in their first year. Courses with high proportions of non-traditional students, commuter students, students with caring responsibilities or part-time students who are in employment, will not have environments conducive to the establishment of PLNs. In addition, distance-learning courses will be limited in their scope for encouraging peer-to-peer interactions on their courses. The students on these courses will still develop their own PLNs, but these PLNs are likely to involve non-academic individuals (friends, family, work colleagues), and therefore the development of PLSs may be affected. Care needs to be given, therefore, in courses of this nature to encouraging course-based peer interactions as much as possible.

A final, and important, consideration for this element of the research is to recognise that not all students will wish to interact with others. Indeed, some might actively eschew this form of learning support. The diversity of the student body means that a high number of students will identify as introverts, and for these individuals extensive collaboration may be unproductive (Cain, 2013). As a consequence, consideration needs to be given over how to support more-introvert students in developing networks with which they feel comfortable, but which still provide the vital element of community support.

9.2.3 Research Question 3: What are the perceptions of Year 1 undergraduate students regarding self-regulated learning; the extent of their agency and responsibilities within the HE setting?

It was clear that the participants understood that independent learning was required of them at University, although it was not always clear to them what this would entail. However, independent study is different to SRL, as SRL involves more than just studying on one's own, or managing your own time and deadlines. To truly appreciate their role in the learning process, the participants needed to be able to position themselves relative to others, and to their developing world view being shaped as they learned about the new environment of the university. Key to understanding their role in the learning process was development of an identity that included a degree of individuality and agency.

However, a strong common theme in the data was that identity was primarily characterised as negative, and based on a perception that there was a limitation, or fixed capability in the participants'

learning. This aspect of their identity was often constructed around negative perceptions- what the participants felt they were *not*, or skills they felt they could not master (see section 8.4). Open-mindedness and willingness to change could potentially support the development of SRL, as the individuals themselves were reflexive and open to new approaches, if those approaches proved to be effective.

Agentic identity is linked fundamentally to self-perceptions of independence, academic ability, and personal investment in the subject (Wortham, 2006). Identity is also linked to enculturation within the discipline, and so identity and learning the conventions of the discipline are interlinked and interdependent. A key absence from participants' identity was an identity that aligned with the profession of the discipline. This lack of investment in the discipline could have potentially-limiting impact on the development of SRL, and misdirection or limitation of activities (Matheson & Sutcliffe, 2018). In order to develop appropriate competencies, the student will need to align themselves with a disciplinary framework, and use this to scaffold their development. When this framework is obscured or absent, then both their study approaches and identity have the potential to develop inappropriately, and therefore inhibit learning. Failure to embed within the discipline was a key factor in Tinto's models of why students withdrew from university (Tinto, 1975, 1998), and participants in this study rarely identified themselves with their discipline when considering their own identity.

Implications for practice: The implications from this aspect of the study are twofold: Firstly, identity is interwoven with alignment to the discipline, and each are mutually-dependent (Wortham, 2006). Therefore, in order to support full enculturation within the discipline, a positive identity, aligned to the discipline, and invested in that discipline, is an important aspect to cultivate. This could be achieved as part of a programme of discipline-related events, aimed at promoting the identity of the student as an early-stage practitioner of the discipline, rather than a student, or a customer.

The second implication is that negative experiences, or perceived failures appeared to lead to the learner identifying themselves as limited and incapable of improvement in some or all aspects of their learning. Restrictive or perjorative labels such as a VAK/VARK learning style, being 'good' or 'bad' at a certain subject or skill, or being labelled as lacking worth, led the learner to adopt that external locus of identity (Krotosky & Hammersley, 2015), rather than being truly reflexive about their own potential. Therefore, teaching practice needs to support students in being reflexive about their learning approaches, and to see themselves as 'works in progress', rather than finite and immutable entities (Christie et al., 2016). In particular there needs to be encouragement to challenge their own preconceptions about themselves, so that they can question labels that have little or no validity (such as VAK/VARK learning style; Newton, 2015) that they might have adopted (or had placed on them) previously. Regular reflexive discussions with an academic mentor (such as a Personal Tutor) would be an ideal means of facilitating this process, providing genuine opportunities to discuss capabilities and skills.

9.2.4 Research Question 4: What social, situational, or environmental factors contribute to the student's progression towards being an independent learner?

There are several social, situational and environmental factors which impact upon the development of SRL. These factors can be logistical and interactive – involved in the development of effective strategies and networks to support learning. However, a fundamental aspect not greatly anticipated in the initial plan for the project was the importance of understanding the 'rules' of the disciplinary communities in which they were embedded. Mastery of at least three social worlds was required – learning to be an independent adult, adapting to being a university-level learner, and enculturation in the discipline. Achieving competence in these three areas was fundamental to the effective development of SRL. Without being able to function as an independent adult, redefining SRL strategies was impeded. Similarly, without understanding the expectations of the discipline, SRL approaches might potentially be misguided or developed along inappropriate lines. Conversely, being an effective learner at university was fundamental to being part of the disciplinary community.

The major limiting factor in the process of understanding these social worlds was the lack of active engagement in the culture of the discipline experienced by participants. Although it was probable, based on Jane, Bryn, Kate and Grace's references to taught study skills sessions or documentation, that the 'rules of the game' were explained at some point during the early part of the courses still there was little recall or acceptance of these by the participants, or buy-in to the concepts. Repetition of the message would appear to be the key here, and inclusion of the students in authentic activities of the disciplinary community.

The Social Worlds identified in the analysis are strongly reminiscent of the concept of a 'Community of Practice' (Lave & Wenger, 1991; Wenger, 1998), and so a CoP might be a valid framework with which to view these interactions. Wenger-Trayner and Wenger-Trayner (2015) describe a CoP as "groups of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly". The CoP model implicitly suggests that the more-central members of the community interact with the less-experienced ones on the periphery, involving them in authentic tasks to increase their active participation in the community as a whole. While there did appear to be some interactions experienced by the participants in this study, these were limited. Interactions did not appear to encourage the peripheral members of the community to become more central. This paucity of interaction is a potential severe limitation for the more-peripheral members of the community. Such interaction was, however, what the participants were expecting, and the lack of it could possibly be why there was a restricted sense of inclusion within the discipline. Extensive use of postgraduate students as demonstrators in laboratory practical classes, or seminar tutors, had the potential to provide an un-threatening bridge-point into the community. However, use of postgraduates typically insulated students from experienced practitioners of the discipline, thus limiting integration.

Implications for practice: The implications for practice here are to structure academic courses so that they support and encourage understanding of the conventions and norms of academic practice in the respective disciplines. This is particularly challenging for subjects, especially humanities subjects, where there is no clearly-defined profession associated with the discipline. Repeated reinforcement from teacher and tutors is potentially the key to this enculturation process. Postgraduate student researchers are a potential means of providing an un-threatening point of access for undergraduate students to the discipline, and bridging the gap between new students and experienced academics. However, this needs to be managed so that the postgraduate students utilise their own experiences of adapting to the discipline as a means of helping the undergraduates understand the conventions of The Academy. Repetition and self-discovery are likely to be key to the enculturation process. Perhaps an approach of providing students with a trail of hints at the requirements of the discipline (perhaps repeatedly through tutorial sessions, formative assessment, or guidelines for/feedback on summative coursework) each of which is mutually-reinforcing, rather than a one-off or limited explanation, would be ideal.

The key factor to successfully learning the rules of the game' for the participants was effective dialogue with several stakeholders. Regular and repeated dialogue with academic staff (experienced members of the discipline) would be fundamental to success of this model. Dialogue is fundamental to the success of a community of practitioners of a discipline (Wenger, McDemott, & Snyder, 2002), and in particular dialogue across different levels of involvement in the community is essential for new members. Where participants were able to experience a moment of close mentorship (which very few participants reported, so must be assumed to be infrequent) the result was transformative. A lack of effective dialogue, and ofthe ability to moderate and review progress, were great challenges for the participants' development, and led to frustration and disengagement. More direct contact and dialogue with academic staff, and the inclusion in authentic activities for the discipline (such as teaching or assignments that clearly aligned with academic research or professional workplace activities such as Nick's practical session in Archaeology, or sessions applying core chemistry concepts to industrial problems) could potentially bridge that divide.

The practice of using postgraduate students as seminar tutors had the potential to provide a less-daunting interaction for the students than being faced with an eminent academic. However, the relative lack of experience of the postgraduate tutor meant that they were not able to provide the experiential-based insights to the professional discipline that more-experienced faculty could have provided. Some participants (Ffion, Jane, Kate, Mary and Penny) noted that the post-graduate students did not always seem as informed to the broader concepts of the discipline as their lecturers appeared to be. This interaction has the potential to be highly effective, provided that the PG tutors are trained not only in mediating discussions, but also in supporting academic literacies. An aspect of this support could be discussing their own journey learning the conventions of the discipline with

students, to demystify the process, provided that students were able to ask questions in return. More focus on developing academic literacies, compared to discussion of academic content, would be a potential benefit to students' development.

There needs to be effective communication between personal tutors/academic mentors and staff delivering Year 1 teaching to ensure that messages are consistent and there is a supported process of understanding the academic expectations of the course, alongside the delivery of content. Explaining the rules early in the course, and repeatedly reinforcing them at key points afterwards, may also support students understanding them. Being mindful that different individuals will come to understand the rules at different rates is also an important consideration. Finally, opportunities for students on the course to discuss their academic expectations and the requirements of the degree with each other would enable students to negotiate those meanings collaboratively. Collaborative discussions would enable those who had understood the rules to guide those who still did not.

The lack of discussion of the conventions of the discipline has the potential to limit the development of SRL and engagement with the course in general. Repeated, but not repetitive, reinforcement of the core concepts of the rules is perhaps the key to success here. Focus on explaining the rules of the game could potentially have more profound impact than any other activity during the transition period to University. A radical approach might be to focus primarily on supporting understanding of the 'rules' before any other aspect of the course. A common approach for HE curricula is to teach content from the outset of the course. However, a better approach may be to focus more on academic concepts at the outset, using a moderate amount of core factual content as a vehicle for the teaching of these practical academic skills and concepts. In this way, the conceptual framework of The Academy could become well embedded, while the students were introduced to the content at the same time as the core conventions of the discipline. Content could still be delivered as part of this developmental process, but with the focus on taking that content and developing the academic skills that would provide the foundation for future application of higher-order academic skills, such as evaluation, application, or creativity (Krathwohl, 2002) in later years of the degree.

9.2.5 Additional findings not aligned to research questions

A broader finding of this study was that transition to University is a complex process, involving the coordinated development of a range of skills and competencies, of which SRL is a central factor. Transition involves the student revising and developing a range of skills, from interpersonal skills, to academic skills, to logistical understandings around living independently. Negotiating these new experiences is set against a backdrop of learning complex theoretical concepts and content to a level and depth not previously encountered as a part of their studies. The transition process is challenging, and difficult to navigate. In particular, additional challenges can make this process even more challenging, such as personal lack of confidence, or a lack of understanding of the aims and

expectations of university. A new student is unlikely to adapt immediately to this new environment, and will need to be supported in the transition process. This finding has significant implications for the practice of academic schools in university. The need to support transition is not a major design focus of most curricula, and yet may have significant impact on student success.

There did not appear to be fundamental differences between genders in the study, although it was unfortunate that the only female Chemistry student withdrew from the course of study before the end of the first semester, and so could not be followed further in the project. As women are in a minority demographic in HE in Chemistry (Bertozzi, 2016), it would possibly have been useful to follow women's experiences throughout the academic year, identifying any potential limitations or strictures faced. However, in adoption of PLSs, the development of PLNs, or the establishment of identity, there were no clear differences between men and women, and each gender adopted or avoided similar approaches to the other.

Finally, an interesting finding from the study was that the participants acknowledged that the development as a learner, and the transition to university were challenging, and that a necessary part of this challenge was the difficult or uncomfortable situations required as part of the learning process. Järvelä et al. (2007) suggest that effective learning involves 'effortful interactions'. Similarly, the action of the expert challenging the learner with activities that place the learner outside of their comfort zone is fundamental to Vygotsky's models of the Zone of Proximal Development (Vygotsky, 1978). When offered the hypothetical opportunity to revisit their younger selves and offer themselves some advice, most participants chose not to offer specific guidance, but rather to merely reassure their younger self that their eventual outcome would be positive. This appreciation that learning involves challenging situations is characteristic of the metacognition required for effective SRL (Boekaerts, 1999; Lehmann et al., 2014).

9.3 Student-Mediated Learning

9.3.1 A proposed revision of the concept of Self-Regulated Learning

SRL appears to be a highly-social process, and social interaction needs to be supported and encouraged for effective development of PLNs and learning strategies. This study proposes that SRL is too-limited a term, as it implies that learning is egocentric and individualistic, and ignores the important social aspect of the learning process. I propose an alternative terminology, ***student-mediated learning*** (**SML**). The term 'student-mediated' suggests that the student is still in control of the process, and adapts their activities according to their own needs, for example following the dimensions of Boerkarts's (1999) three layer model. However, in SML there is no implicit implication that the self alone is undertaking the regulation, but rather the student is mediating an interaction

between their own metacognitive abilities and the support and interactions of others. Figure 9.4 proposes an adaptation of Boerkarts's model, adding an additional layer, '*Regulation of Interactions with Others'*, which involves the regulation of interactions with peers, teachers or family, based on the needs of the learner for their discipline-specific or personal requirements.

Figure 9.2

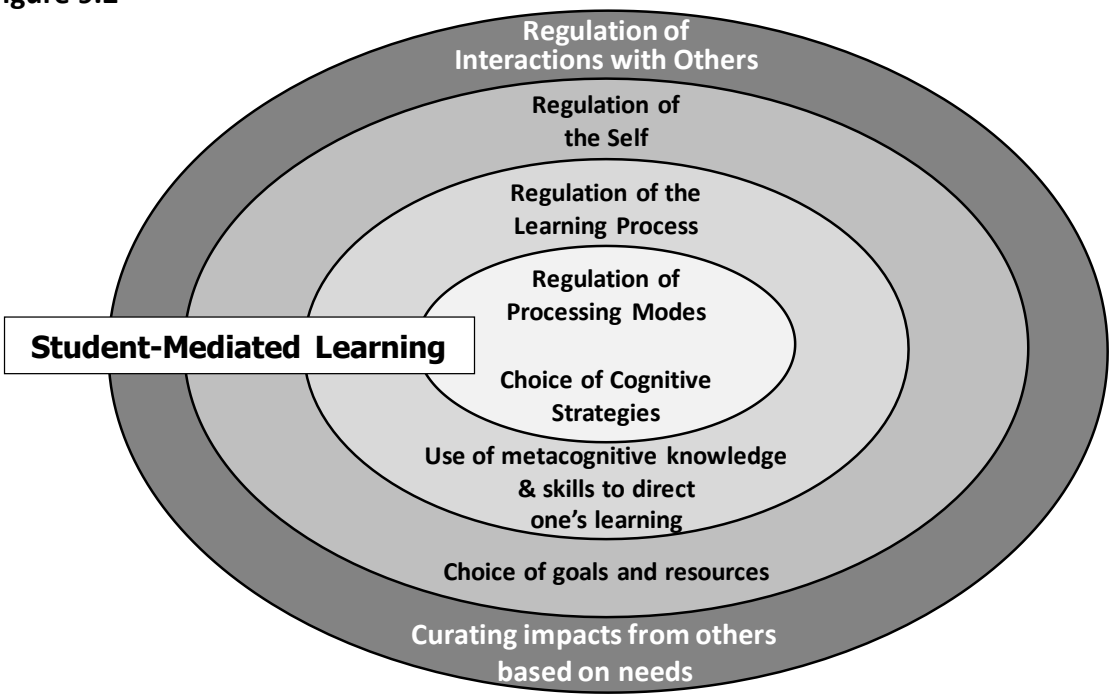

Figure 9.2 – Student-Mediated Learning. A re-imagining of the three-layer model of SRL (Boekaerts, 1999). In addition to the three concentric layers of self-regulation, a further layer has been added: *The regulation of interactions with others*. The skills required for this form of regulation involve utilising and *curating the impact of the involvement of others* in the learning process, adapted to and according to the needs of the learner.

9.3.2 A model for the supported development of Student-Mediated Learning at University

A model for the supported-development of SML during the first year of university is illustrated in figure 9.3. Four key factors identified by this analysis directly drive the effective development of SML: *(i)* establishing effective personal learning strategies; *(ii)* establishing effective personal learning networks; *(iii)* establishing a clear understanding of the rules and conventions of The Academy in a disciplinary context; and *(iv)* establishing an agentic and positive identity, embedded within the discipline. Each of these factors also influence each other, so the formation of a PLN will support the

Figure 9.3

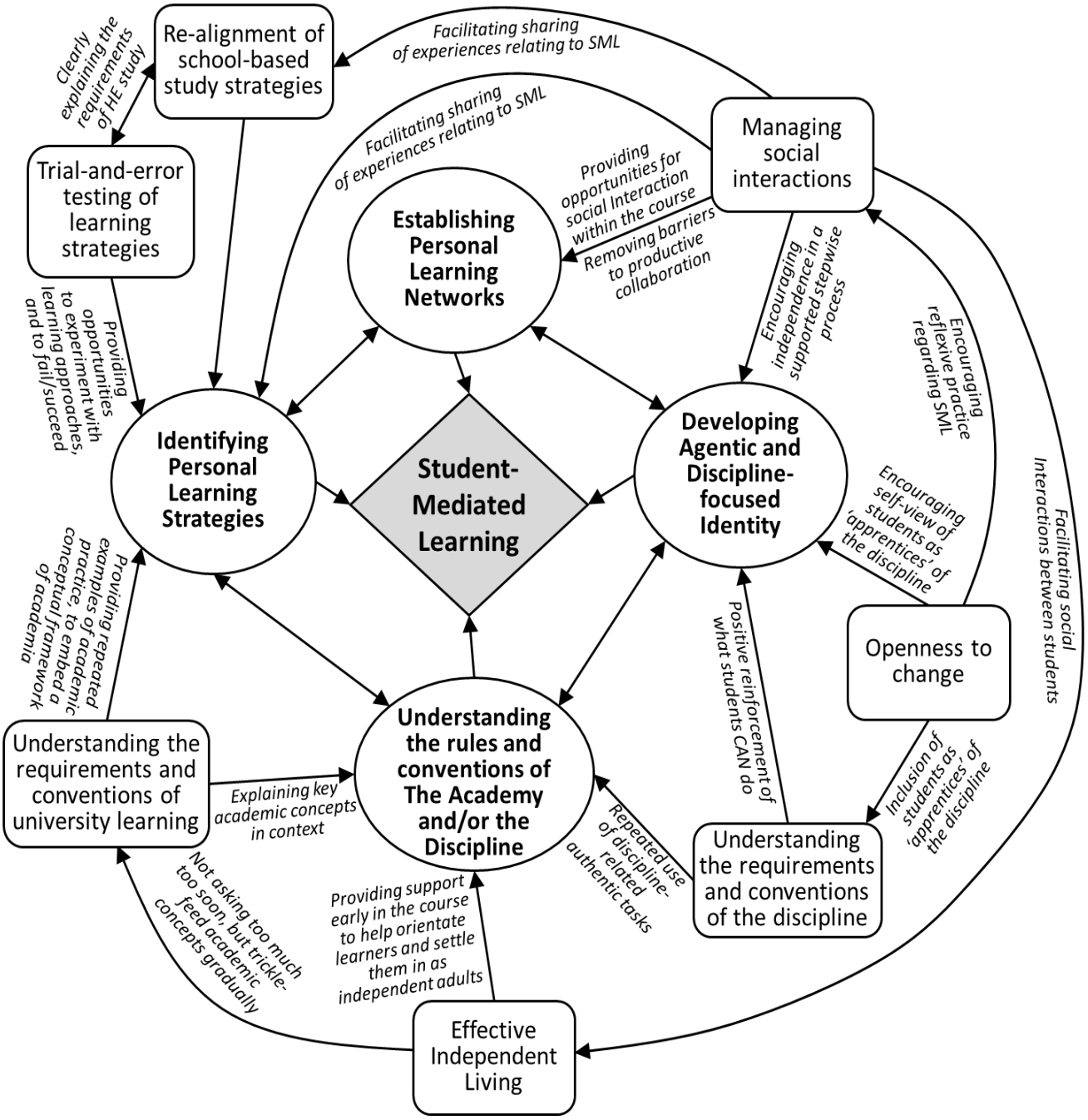

Figure 9.3 – A model for the supported development of Student-Mediated Learning (SML) during the transition to university. Ellipses represent key factors that impact directly upon the development of effective SML strategies. Rectangles represent factors that influence these primary factors, and enable their development. Text in italics suggests practical approaches that might be taken to facilitate the development of the primary factors.

development of an agentic identity and effective personal learning strategies. Various secondary factors are required to support these four core requirements, such as managing social interactions with others, and how these inform the development of study strategies, support understanding and knowledge acquisition, and help one settle in to university.

There are various approaches that academic staff can adopt to facilitate the development of the four factors above, and encourage the establishment of effective SML strategies. Example approaches include providing opportunities for social interaction within the course, encouraging students to be reflexive about their learning approaches and identity, or providing opportunities for students to discuss their learning approaches with their peers. In some cases the removal of barriers is important, such as barriers to effective and productive collaborative learning activities. Other approaches involve the repeated use of authentic tasks or conceptual frameworks, to effectively embed an understanding of the context and validity of learning activities that are part of the curriculum.

Above all, the key concept driving this model is that the development of SML in students is not entirely the responsibility of the student themselves; academic staff also need to be active agents in this process, through their learning and teaching activities, assessment and feedback approaches, guidelines to students, and curriculum design. Experiences of the participants in this study (see section 6.5.5, 7.3.2, and 7.4.2) suggested that there were pockets of active engagement by academic staff to develop the participants' SML activities, but that this was inconsistent and generally minimal.

9.4 Implications for development of academic practice

9.4.1 Suggested Development of practice for the researcher

This work has already begun discussions on the best way to support transition to University within my own academic School, the School of Biosciences. In particular the importance of supporting students in becoming part of the disciplinary community. Even though the majority of our students do not remain in the academic or industrial bioscience sector, in order for them to function effectively within the parameters of the programme, they need to be part of the research culture of the discipline. Perceiving the students not as 'students', but as 'trainee bioscientists', and (possibly more importantly), ensuring that *they* see themselves in this manner, is an important change to make to our teaching environment. Embedding learning and teaching activities within a clear and authentic professional environment for a scientist is key to this, especially in a discipline such as the biosciences, where factual content and practical skills are often emphasised over academic competencies and critical skills (Virtanen & Lindblom-Ylänne, 2009). The importance of peer-support has also been emphasised, and future practice will increase peer-to-peer and near-peer mentoring of new students.

In particular, with the repetition of the 'rules' of the discipline being important, a structured programme of tutorials with staff has been modified to emphasise the focus on the discipline and its conventions.

The final element of practice that will be instituted is the use of workshop discussions in the early weeks of Year 1 that will encourage students to identify their preferred PLSs for different disciplines. Core to these workshops will be encouraging students to reflect on the effectiveness of their PLSs, and to discuss these with peers. An important aspect of this discussion will be reflecting on how these PLSs will need to change to adapt to University learning.

9.4.2 Suggested Development of practice for the Higher Education sector

The key implication for the sector is that students are not typically a *table rasa* regarding SML, and may have already developed effective and personalised strategies. The development of these strategies to be effective in an HE setting, and aligned to the objectives of HE, is the key factor. The redevelopment of SML therefore needs to be embedded within curricula from the outset of each course. Additionally, SML is not a solitary activity, and its effective development requires the development of social links and networks, and the sector needs to consider what implicit barriers are presented which might inhibit this development process. Discourses, such as the importance of original thought, or the primacy of content over application present conceptual barriers and cause confusion among novice members of the discipline. Moreover, inclusion of students within the discipline is a key priority, in particular where HE across the UK, and much of the world, is facing increasing challenges as part of a marketised economy for education. Within the sector it is important to approach students as novice, but active and agentic, members of a community of the discipline, rather than customers purchasing a product.

9.5 Impact

9.5.1 Impact on participants

Informally, the participants did report a beneficial outcome form the project. When asked if they would be interested to continue the research beyond the scope of this Ed.D. project, all of the participants who had continued to the end of the year were keen to do so. The reasons given for wanting to continue were all that they reported that discussing their study approaches had been beneficial to their ongoing learning. This finding suggests that reflection on study and learning approaches is a beneficial activity for the long-term development of SML. A structured approach to discussing and reflecting-upon learning strategies, as part of a curriculum, could therefore be highly effective in supporting learning development.

In some cases, the participants were eager to hear the findings of the study, as they were interested to hear the experiences of others, and to compare their learning approaches to the other participants in the study. This suggests that discussing learning approaches with peers is a potential benefit for some students, and that some students are naturally curious about others' approaches, possibly as a benchmark to their own methodologies.

9.5.2 Impact on the teaching practice of the researcher

A key finding was the importance of developing PLNs and supporting social integration with supportive peer groups. In my School, we aim to encourage interactions between students through a range of approaches including mentoring, groupwork and forming peer-led communities. In particular we encourage students to form student-led, academic support communities (Scott, Mistry, et al., 2014; Scott, Moxham, et al., 2014), but engagement with these is often limited. Understanding the social dynamics of students may help us identify benefits and limitations for these communities, and identify ways of improving their impact. For example, focusing them on developing discipline identity, or sharing experiences of study approaches, might be highly beneficial.

In particular, I plan on making four key changes to my academic practice as a result of this research:

(i) Previously, our approach has been to *tell* the students how to study, but the findings here suggest that this is wasteful at best, and even potentially damaging. During induction week for new students, I plan to facilitate discussions between students over their learning/studying approaches, and through this to firstly group students with similar approaches for studying together to share their experiences; then to group students with differing approaches, so that they can enlightened their peers to possible approaches the peers might not have considered.

(ii) We already encourage social interaction between students, but the importance of social networking revealed by this study means that I will embed more opportunities for students to form these smaller peer-based communities, as well as those within their halls of residence.

(iii) Enhancing the reinforcement of the relevance and application of the 'rules' of the discipline of academia. Couching all assignments within a disciplinary framework, and referring to academic concepts during class contact time, would follow the model of repeated reinforcement suggested in chapter 7.

(iv) Actively encouraging students to reflect on their strengths and weaknesses needs to be a key activity throughout the degree curriculum. Re-evaluating what are perceived as weaknesses and strengths – based on empirical evidence (i.e. aligning the strategies with results from those subjects), rather than supposition, would encourage students to apply a process of continual

change to themselves and their perceived capabilities, and keep them open to potential improvements – even if they do not perceive the need for improvement.

Dissemination of these findings has already taken place within my School, in other Schools within the University, and externally. In particular the academic schools whose students participated in the study will receive a summary of the key findings of relevance. In particular the importance of embedding the humanities students in the culture of academia, and encouraging group-based activities will be a key priority.

9.6 Critical reflection on the methodology

9.6.1 The use of qualitative research methodologies to investigate development of SRL

This study addressed e potential of qualitative research methodologies for addressing the research questions of this project were revealed clearly. The codes, categories, and themes that emerged from the data were highly-nuanced, and provided a rich variety of experiences, whilst also showing key commonalities between participants. The CGTh approach in particular was fundamental to the success of the analytical process. CGTh enabled several aspects of the data to emerge that were unexpected, and would not have been highlighted in a more-positivistic analysis. The benefit of CGTh, compared to other GTh paradigms, was that it facilitated the involvement of myself as a researcher within the data generation process. The questions asked, and insights gained, were therefore potentially richer than if the process had been undertaken with the theoretical agnosticism suggested by Strauss and Corbin (1990). The insights gained by the qualitative analytical paradigm have the potential to reveal the lived experiences of the participants, and from these to reveal the factors that impact positively and negatively upon the development of SRL.

The aim of this study was to investigate factors that influenced the development of self-regulated learning strategies during the transition from a pedagogic to andragogic learning environment. The development of SRL and the transition to university are closely linked, such that the issues that impact on one invariably impact on the other. An unsuccessful transition to university can be caused or exacerbated by an unsuccessful development of effective SRL methodologies. Conversely, a turbulent transition to university can potentially inhibit or delay the development of effective SRL. The development of SRL was multi-faceted and involved a range of interacting factors.

9.6.2 Critique of Qualitative methodology

This thesis details an analysis of the factors affecting the development of self-regulated learning in students as they transition from a pedagogic to an andragogic environment. It was important to undertake this approach as a qualitative study, as the key requirement for the research was to identify individuals' experiences and the stories behind these. An interview-based methodology was effective in investigating the participants' experiences in full, and gave sufficient rich deep data for an effective analysis. Individual interviews were an effective approach, rather than a discussion-based approach such as focus groups

The methodology focused on three interviews, one near the beginning of the academic year, one mid-way through, and the final one at the end of the academic year. These were reasonably-spaced to enable a good contrast between each sampling stage, and to show progression in the participants through the year. However, the methodology did rely on participants' recollections of their school-level study approaches, rather than capturing them in the moment. There is a possibility of reporter bias (Brinkmann & Kvale, 2015; Cohen et al., 2011) with the interview process, with participants potentially telling the researcher information that they think the researcher wishes to hear. However, the open-intensive interview process, involving open questions, should have minimised this potential bias by inviting the participants to describe and explain their experiences, rather than answer direct questions. The qualitative approach enabled the detailed experiences and perceptions of the participants to be revealed, enabling their motivations and decision-making processes to be analysed in depth. This allowed for a range of insights to be drawn over the factors that impacted their development and thought processes, that could only be revealed in depth as part of a qualitative methodology.

The questions asked in the interviews were sufficient to engage the participants, and encourage them to reflect on their experiences and practice. The questions were sufficiently open so as not to encourage the participants to answer in brief responses. However, responses did vary by individuals – Vic and Emily, for example, tended to answer in short focused answers, while Mary, Kate and Grace were more loquacious. Follow-up questions were important to ask to help guide the discussions towards relevant areas, if the participant had not discussed the information in particular depth. On reflection, some of the more effective questions at encouraging reflection were those where the participant was asked to describe an experience or an incident (such as Q6 in Interview 2, and Q5 in Interview 3). This encouraged the participant to reflect on the impact of that event, and consider the change to their practice that it induced. A 'critical incident technique' approach (FitzGerald, Seale, Kerins, & McElvaney, 2008; Kain, 2004) might, therefore, have been useful to incorporate into the interviews.

9.6.3 Reflection on the demographics within the study

Recruitment to the study was challenging, and meant that the sample of participants was not representative of the full range of diversity within the University. A potential limitation to this study was therefore the relative homogeneity of the sample of participants involved. The participants were all students of an elite university with high entry tariffs, and therefore the study would not have included students who struggled academically, or who did not have effective learning strategies. The relative lack of cultural and socioeconomic diversity was also potentially limiting. Although this was not objectively tested, the participants' descriptions of their own backgrounds identified that the majority were from middle-class backgrounds, and none were from significantly underprivileged socioeconomic demographics. Only one of the participants was non-white, which again is a potential limitation as there is evidence of challenges to transition to, inclusion in, and progress through HE, for black and minority ethnic (BME) individuals (OfS, 2017). Similarly, a focus on student with disabilities would be an important additional focus, both physical disability, and learning/written-word disabilities, and these students are also noted in the literature to face challenges with either adaptation to academic study (Belch, 2004; Field, Sarver, & Shaw, 2003; Getzel & Thoma, 2008) or social inclusion (Gil, 2007). Only two participants self-identified as diagnosed with a recognised disability. Finally, only one student had returned to university after a break of several years. There is extensive literature regarding mature students and their transition to university (e.g. Mallman & Lee, 2016), so it would have been helpful to have a stronger perspective from such students in this study.

This current study can act as an effective benchmark for comparison, but a major priority for this research would be to see how the findings of this study apply to key variations of the student experience. A future development will therefore be to recruit participants from minority ethnic, gender, or other social demographics for the degree courses included in this research. It would also be important, to apply a similar approach with students at a university where students perhaps enter with lower qualifications, or where there is a higher proportion of students from underprivileged backgrounds, non-traditional entry, a higher proportion of first-generation HE entrants, and students who commuted to university, or were part-time. It would be important to identify where there were commonalities, and what was the basis of any differences to this study.

The study focused on a science and a humanities cohort, based on the assumption that the former would involve more didactic content than the latter. However, an alternative comparison, in the light of the significance of identifying as part of a subject discipline, would be to compare vocational and non-vocational degree courses. A highly-vocational course, such as medicine, dentistry, music, or nursing, would provide a clear destination discipline to which the student would be strongly aligned. It would be if interested to see how a strong sense of disciplinary identity impacts upon the development of independence and self-regulation. However, a potential limitation to this approach might be the teaching approaches involved in a highly practical or clinical-based discipline, which

might itself obviate the need to effective self-regulation, if the course structure is highly-scaffolded, and also often impacted by placement elements to the curriculum. However, evidence from the literature suggests that effective SRL is just as challenging to develop in vocational students (Agrawal, Norman, & Eva, 2012; Corrigan, 2012; Premkumar et al., 2013; Weurlander, Scheja, Hult, & Wernerson, 2014) as in non-vocational courses.

9.6.4 Reflection on the use of Constructivist Grounded Theory and Situated Analysis as research paradigms

This study adopted a CGTh approach to generating and analysing the data. This approach was fundamental to the study, as it was important to reveal the factors that impacted on the students themselves, rather than to investigate pre-determined factors from previous research or my own personal experience. As educational practitioners it is highly beneficial to be able to view the learning experience from the perspective of the learner rather than the educator. This study identified aspects of the participants' lived experiences that were both surprising and significant, such as the importance of domestic peers in establishing SML, the impact of identity, or the lack of inclusion in the discipline. These factors were not anticipated, and therefore would possibly have been missed if a more-positivistic analytical approach had been adopted.

The distinctive feature of CGTh compared to previous iterations of the approach is the inclusion of the researcher as a key element in the data collection and analysis. This was a useful approach, especially for an EdD project where an application of the research for practice is a core factor. Although it was important not to overtly guide the research based on my own experiences and interpretations, in the generation of the data, and interpretation of the findings, it was useful to be able to phrase questions and follow-up questions, and to situate the findings based on my own experience as an educator. In particular, the CGTh approach of encouraging a dialogue between the participant and the researcher was useful in generating deep rich data, describing experiences in a genuine manner. Developing a relationship with the participants reduced reporter bias from the participants, and enhanced the validity of the data.

The use of Situated Analysis itself grew out of the data, as the first round of interviews, and the pilot study, suggested that social interactions might be significant. The benefit of the SA approach to this study was significant, and the various mapping approaches from SA were important heuristic devices for interpreting the data. In particular, situational maps and positional maps were useful in identifying commonalities and making comparisons of dimensions within the data. In turn, the finding that the three mapping approaches in SA were each useful for understanding three of the four themes, supports the validity of the SA approach as a paradigm for investigating qualitative data that contain a component of social interactions. The limitation of some of the approaches for large datasets – such as this study – was that above a certain level of complexity, some of the mapping approaches

(especially situational maps) become too unwieldy to be practical. However, the SA approach was important to identify key positions and interactions that drive the participants' lived experiences.

9.6.5 Reflection on potential alternate methodologies for the study

With any study it is useful to reflect on the 'path not taken' in the data collection and/or analysis. The most immediate question might be to question the exclusion of quantitative methodologies from the study. However, the over-arching aims of the study were to identify students' experiences, and to investigate how those experiences informed the decisions they made and approaches they adopted. Revealing the individuals' stories, their lived experiences, was fundamental to that, and were best revealed by using a qualitative approach. A qualitative analysis empowered the participants to share their experiences, feelings, motivations and perceptions, and in turn enabled them to reflect on their own learning approaches. A qualitative approach also offered the potential to discuss aspects of the findings with the participants themselves, and to further-investigate their perceptions of the findings, and how they potentially impacted upon them. A highly-qualitative methodology was therefore beneficial to both the study, the participants, and in identifying the nuance of the findings. While other methodologies might be able to address the broader applicability of the findings, they would not be able to investigate the rationale behind these from the perspective of the participants.

An interesting alternate analytical approach might have been a phenomographic analysis (Åkerlind, 2008). This study focused very much on commonalites between participants, while a phenomographical approach would highlight areas of difference (Åkerlind, 2012). An alternative data generation methodology to interviews might also have provided different insights into the developmental journeys of the participants. A Life History approach (Floyd, 2012; Goodson & Sikes, 2001) would have been very useful in identifying the progression of choices and experiences over a longer period of time, and to see how those worked together to define the participant's later choices in HE. As the development of SML is a long-term process, a methodology that was grounded in the longitudinal timeframe might have provided a different perspective

The timeline of the study, being across only a single academic year, was potentially restrictive to the overall analysis. Ideally a longitudinal study would be undertaken to follow ongoing changes and developments in participants. In particular, taking a further round of interviews in the second year of study would have investigated how the participants used their experience of the school-university transition to inform their year-to-year transition in University, and follow-up on those individuals who had not yet learned the rules of the game for their discipline. It would be interesting to see if the vacation after the end of Year 1 had an impact as a time of reflection and growth. However, within the scope of an EdD project, this longitudinal study was not feasible, and so the time period with potentially the highest rate of change for the participants was chosen instead.

9.7 Future directions

There are several aspects of this research that warrant further development. One approach, which is already underway, is to extend the scope of this study into a longer longitudinal study, following individuals throughout their degree, and mapping how they develop over an extended period of time. This approach would provide insights into how individuals embed themselves within their discipline, and how they manage their increasing levels of agency, independent thought, and complex academic skills. Charting how the chemistry students developed within a more-easily-definable professional framework for their course, compared to the less-professionally-aligned humanities students would be an interesting approach to develop.

A key area of development would be to parallel this study with participants from a non-Russell Group university, ideally one where students were a broader mix of demographics, with more commuter students, non-traditional entry, and/or part time students. This current study provides a baseline for how interactions can lead to the development of SML, but it would be interesting to apply these principles to students who are less-academic, who have barriers to forming PLNs (either personal or logistic), or who are from backgrounds that might make social integration more-challenging. How does the model for the development of SML stretch in these other situations?

In a similar manner, it would be useful to apply this analysis to students with a clear vocational outcome of their degree (such as medicine, nursing or music). It might be anticipated that these students develop a disciplinary identity sooner, and perhaps learn the conventions of that discipline as a result. The conventions of a clearly-defined profession (such as nursing or law) might encourage more-rapid identification of effective SML strategies, but equally might inhibit those by the high-level of practical application of the knowledge, compared to the more-conceptual academic disciplines of this current study.

Another aspect of this research would be to extend the analysis to earlier stages in the educational process, such as pre- and post-compulsory (or even primary) schooling. Investigating how SML strategies develop in highly-scaffolded learning environments would be of significant benefit to supporting effective learning, and potentially even reducing the pressure placed on young people in the secondary (and increasingly also primary) environment.

Finally, an area worthy of investigation might be the practical engineering of social interactions between learners by combining domestic and course-based peer groups. Placing students studying the same course together in student accommodations, compared to those in mixed groups, would be an interesting strategy to adopt and monitor. Identifying whether this approach enhanced or restricted the PLN of each individual involved would provide useful insights into the ideal way to support holistic PLN development, and how this impacted on the students' own revisions of the SML strategies. There are clear ethical implications of this proposal, however, as the study could have

negative as well as positive outcomes. So a better approach might be to identify examples of institutions where this is already common practice, and to gather insights from students' experiences, and infer comparisons from this.

9.8 Conclusions

9.8.1 Reflection on my development as a researcher

As stated in chapter 1, my background as a researcher prior to this project was highly quantitative. The use of qualitative research methods was a novel experience, but one which was highly illuminating. The use of qualitative methods enabled the understanding of the rationale behind the participants' behaviour. Qualitative methods also helps reveal the factors which impacted upon the participants' development of their SRL strategies. The use of the visual mapping tool provided by SA facilitated the development of theory in a similar manner to Charmaz's 'diagramming' approach (Charmaz, 2014) for enhancing theoretical sorting. The combined use of CGTh and SA, supported by my own experiences in presenting and charting quantitative data, provided mechanisms for investigating the data in depth. This combined approach represented a novel method for approaching the analysis of qualitative data.

Undertaking this research reinforced my own epistemological and ontological positions, stated in Chapter 3. Undertaking a qualitative study highlights clearly that individuals' perceptions of truth and reality are highly contextualised, and based on their own experiences and motivations. As an educator, and a lifelong learner, it was transformative to hear the experiences of other learners. Due to the massification and ongoing commercialisation of HE in the UK (Hornsby & Osman, 2014), there is an increasing risk of seeing students as a homogenous collective. This study clearly showed that although there are many commonalities, students are highly individualistic in their study approaches and the ways they relate to their discipline. Each has their own motivations for study, differing levels of engagement with the discipline, and differing perceptions of their identity, strengths, limitations, and futures. As a result, it will be important to highlight this diversity to colleagues, and to encourage curricula and teaching approaches to reflect this.

9.8.2 Contribution to knowledge and practice - methodology

A significant finding revealed by this study was the high degree of complementarity between CGTh and SA as research methodologies and analytical tools. The complementary use of coding and the development of maps through SA enabled the data to be considered in a holistic manner. The use of SA as a heuristic device was the primary aim of its inventor (Clarke, 2003). This study highlights the

potential power of the combined use of SA (which requires the inclusion of the researcher and their experiences in the analytical process) with the equally-reflective approach of CGTh.

In addition, the adoption of arguably more-quantitative approaches to presenting data (e.g. graphs and maps) facilitated the analysis of a large qualitative dataset. The use of incident-with-incident coding was particularly helpful in the analysis of commonalities or trends/differences over a timescale. The approach enabled the larger picture of how the participants developed, or compared to each other.

9.8.3 Contribution to knowledge and practice – learning and teaching

This research project has two broad findings of particular significance to learning and teaching practice. First is the observation that SRL is far from being a self-focused and oriented activity, as name would suggest. Instead, the learner appears to act more as a mediator of several interconnected and interacting support mechanisms (of which their own personal agency and learning activities are two factors). By reconsidering SRL as a student-mediated learning, there is the potential to recognise this interactivity, and to encourage it. By supporting the development of networks for learning support, we may have more impact as educators - especially upon individuals who are part of a highly-connected society which features collaborative technologies and diverse online communities. Use of these technologies for collaborative learning needs to be encouraged (Kitsantas & Dabbagh, 2011; Rutherford & Standley, 2016), provided that students are guided in their proper use and the need to critique information obtained from these sources (Brabazon, 2007). Encouraging students to see themselves as part of the learning community, and to identify their place within this community, has potential benefits for both the students themselves and the Academy in general.

The other significant finding, which reflects back upon the aims of this project, is that these findings suggest that students potentially already are self-regulated learners when they arrive at University. The pervasive opinion, highlighted in section 1.4, that undergraduate students are incapable of SRL, and need to be taught these rudimentary skills, is pejorative and overly simplistic. Instead of suggesting remedial support for students, a better approach might be to support them in exploring their own capabilities and potentials, and learning from their colleagues. By reflecting on their own experiences, students have the potential to identify strategies that work to support their learning, and to develop an agentic learning identity that is essential for an independent, lifelong learner.

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APPENDIX A1

INTERVIEW SCHEDULES

Interview 1

1) Introduction from researcher and brief discussion of process.

2) Can you tell me a little about yourself and why you chose to study [subject] at University?

3) What have you done in [subject] so far, and how have you interacted with other students?

4) Can you tell me a little about how you manage your study time outside of class?

5) Can you tell me a little about studying activities you did outside of class, prior to University, that involved other students?

6) Can you tell me a little about the sort of learning activities you are expecting to undertake, as part of your upcoming course?

7) Can you tell me a little about how you feel about your future studying on your course?

8) Thinking about when you are studying something on your own, can you explain how you know whether you have understood something?

9) Is there anything you would like to add, or anything else you would like to comment on?

Interview 2

1) How have you found your course so far?

2) Could you tell me in what ways has your experience of the course differed from your expectations of it when you started?

3) Could you describe to me how your approaches to working outside of class have changed compared to A-Level?

4) Could you describe to me how your approaches to revision have changed compared to A-Level?

5) Could you describe to me any interactions you have with other people regarding your studying?

Could you describe to me how your interactions with other students have changed compared to A-Level?

6) Can you describe to me an example of something on your course that you didn't understand at first, but which you came to understand after a while? Can you describe the process you went through? [follow up reflecting on how that was different to A-Level]

7) Could you describe to me whether you think expectations of you as a learner have changed between A-level and now?

8) Could you tell me how you feel about the rest of your course? Has that changed since you began your course?

Interview 3

1) Can you tell me a bit about how you think your first year at university has gone?

Sub-questions: How have you found your first year socially?
How have you found your first year academically?
What would you say were the main challenges you faced during year 1?
How successful were you at overcoming them?
What did you *do* to overcome the challenges you mentioned?

2) Can you describe to me what you think is the *most effective* way of studying outside of class?

Sub-questions: How did you develop these approaches?
How did the methods change compared to those you used for A-level?
How effective were they?
How did you identify approaches that weren't effective?
How do you get the most out of your learning?

3) Can you describe to me what you think is the *most effective* way of revising for exams?

Sub-questions: How did you develop these approaches?
How did the methods change compared to those you used for A-level?
How effective were they?
How did you identify approaches that weren't effective?

4) Can you describe to me if there are any ways you expect you will change your study approaches next year? [Follow-up – Can you explain the reasons for those changes?]

5) Can you tell me a bit about any person or people who you think have had a significant impact on your learning over the past year, and why?

Sub-questions: If you need help/advice about your studies, whom do you go to, and why?
Can you describe if/how you involve any others with your studying?
When you study or do coursework, can you describe the ideal environment for you? Do you prefer to be alone or around others?

6) Can you describe to me how effective do you think you are at studying independently?

Sub-questions: Do you think you have developed as an independent learner over the year?

7) Can you tell me a bit about how you would describe the differences between university study and study at school?

8) Can you tell me in what ways do you think you have changed as a person over the past year?

9) If you were to describe yourself to a stranger at a party, what would you say?

9) If you could go back and meet yourself during enrolment last year, what would you say to yourself?

10) Can you tell me a bit about how you feel about next year? (either academically or socially, or both)

APPENDIX A2

ETHICAL APPROVAL DOCUMENTATION

University of Reading

Institute of Education

Ethical Approval Form A (version May 2015)

Tick one: Staff project: _____ PhD ____ EdD X

Name of applicant (s): **Stephen Rutherford**

Title of project:

Investigation of individual and collaborative self-mediated learning activities in Year 1 undergraduate students

Name of supervisor (for student projects): **Dr Elizabeth McCrum and Dr Naomi Flynn**

Please complete the form below including relevant sections overleaf.

	YES	NO
Have you prepared an Information Sheet for participants and/or their parents/carers that:		
a) explains the purpose(s) of the project	X	
b) explains how they have been selected as potential participants	X	
c) gives a full, fair and clear account of what will be asked of them and how the information that they provide will be used	X	
d) makes clear that participation in the project is voluntary	X	
e) explains the arrangements to allow participants to withdraw at any stage if they wish	X	
f) explains the arrangements to ensure the confidentiality of any material collected during the project, including secure arrangements for its storage, retention and disposal	X	
g) explains the arrangements for publishing the research results and, if confidentiality might be affected, for obtaining written consent for this	X	
h) explains the arrangements for providing participants with the research results if they wish to have them	X	
i) gives the name and designation of the member of staff with responsibility for the project together with contact details, including email . If any of the project investigators are students at the IoE, then this information must be included and their name provided	X	
k) explains, where applicable, the arrangements for expenses and other payments to be made to the participants	N/A	
j) includes a standard statement indicating the process of ethical review at the University undergone by the project, as follows:	X	

'This project has been reviewed following the procedures of the University Research Ethics Committee and has been given a favourable ethical opinion for conduct'.			
k)includes a standard statement regarding insurance: "The University has the appropriate insurances in place. Full details are available on request".	X		
Please answer the following questions			
1) Will you provide participants involved in your research with all the information necessary to ensure that they are fully informed and not in any way deceived or misled as to the purpose(s) and nature of the research? (Please use the subheadings used in the example information sheets on blackboard to ensure this).	X		
2) Will you seek written or other formal consent from all participants, if they are able to provide it, in addition to (1)?	X		
3) Is there any risk that participants may experience physical or psychological distress in taking part in your research?		X	
4) Have you taken the online training modules in data protection and information security (which can be found here: http://www.reading.ac.uk/internal/imps/Staffpages/imps-training.aspx)?	X		
5) Have you read the Health and Safety booklet (available on Blackboard) and completed a Risk Assessment Form to be included with this ethics application?	X		
6) Does your research comply with the University's Code of Good Practice in Research?	X		
	YES	NO	N.A.
7) If your research is taking place in a school, have you prepared an information sheet and consent form to gain the permission in writing of the head teacher or other relevant supervisory professional?			X
8) Has the data collector obtained satisfactory DBS clearance?			X
9) If your research involves working with children under the age of 16 (or those whose special educational needs mean they are unable to give informed consent), have you prepared an information sheet and consent form for parents/carers to seek permission in writing, or to give parents/carers the opportunity to decline consent?			X
10) If your research involves processing sensitive personal data[1], or if it involves audio/video recordings, have you obtained the explicit consent of participants/parents?	X		
11) If you are using a data processor to subcontract any part of your research, have you got a written contract with that contractor which (a) specifies that the contractor is required to act only on your instructions, and (b) provides for appropriate technical and organisational security measures to protect the data?			X
12a) Does your research involve data collection outside the UK?		X	

[1] Sensitive personal data consists of information relating to the racial or ethnic origin of a data subject, their political opinions, religious beliefs, trade union membership, sexual life, physical or mental health or condition, or criminal offences or record.

12b) If the answer to question 12a is "yes", does your research comply with the legal and ethical requirements for doing research in that country?			X
13a) Does your research involve collecting data in a language other than English?		X	
13.2) If the answer to question 13a is "yes", please confirm that information sheets, consent forms, and research instruments, where appropriate, have been directly translated from the English versions submitted with this application.			X
14a. Does the proposed research involve children under the age of 5?		X	
14b. If the answer to question 14a is "yes": My Head of School (or authorised Head of Department) has given details of the proposed research to the University's insurance officer, and the research will not proceed until I have confirmation that insurance cover is in place.			X
If you have answered YES to Question 3, please complete Section B below			

Please complete **either** Section A **or** Section B and provide the details required in support of your application. Sign the form (Section C) then submit it with all relevant attachments (e.g. information sheets, consent forms, tests, questionnaires, interview schedules) to the Institute's Ethics Committee for consideration. Any missing information will result in the form being returned to you.

A: My research goes beyond the 'accepted custom and practice of teaching' but I consider that this project has **no** significant ethical implications. (Please tick the box.)	X

Please state the total number of participants that will be involved in the project and give a breakdown of how many there are in each category e.g. teachers, parents, pupils etc.

18 Year 1 Undergraduate students from Cardiff University;

9 from a Humanities discipline and from a Science discipline

Give a brief description of the aims and the methods (participants, instruments and procedures) of the project in up to 200 words noting:

1. title of project
2. purpose of project and its academic rationale
3. brief description of methods and measurements
4. participants: recruitment methods, number, age, gender, exclusion/inclusion criteria
5. consent and participant information arrangements, debriefing (attach forms where necessary)
6. a clear and concise statement of the ethical considerations raised by the project and how you intend to deal with then.
7. estimated start date and duration of project

Investigation of individual and collaborative self-mediated learning activities in Year 1 undergraduate students

The aim of the project is to identify the key approaches students take in self-mediated learning (SML) outside of the classroom, to identify their perceptions of the effectiveness of strategies taken, and students' perceptions on the relative benefits of solitary vs peer-supported SML. The rationale for this approach is to inform support of students during the development of independent learning strategies in undergraduate higher education.

Participants recruited will be divided between two Schools (History and Chemistry) at Cardiff University, to gain insight into potential subject-specific differences. Year 1 students are targeted as subjects in order to highlight issues related to transition between school and University learning.

Data collection will be by means of individual semi-structured interviews with an **open-ended** question strategy (see Appendix A for indicative Interview Guide), following an Interview Guide specifying specific questions which will then be elaborated-upon dependent on the participant's answer. The analytical approach will be a Constructivist Grounded Theory approach, the analysis of Interview 1 will inform the design of questions for interviews 2 and 3; therefore the detailed questions for Interview 1 are attached. Although interviews 2 and 3 questions are likely to be similar, they cannot be specified exactly at this stage. Each interview will last no more than 60 minutes.

efore students are approached for permission to participate, the Director of Learning and Teaching for the relevant School will be approached to request permission for their School's involvement (see information sheet – Appendix B).

The 18 participants will be volunteers from the targeted academic Schools (different to the researcher's home school), recruited after a short presentation to the Year cohort by the main researcher at the start of the academic year. Age and gender will be selection variables only to achieve a representative demographic balance of participants, where possible.

Participants will be asked to commit to completing a short pre-interview questionnaire (Appendix C) and 3 interviews across the academic year (September/October 2016, January/February 2017, May/June 2017).

Participants will be informed of the study via email (with the permission of the Director of Learning and Teaching for that School) during the enrolment week of their Year 1. Subsequent to this, the project will be introduced to students, and volunteers requested, at the beginning of a timetabled teaching session, with the participant information sheet being distributed (Appendix D). Students may volunteer by completing the pre-interview questionnaire (Appendix C) which will include their name, contact details and some basic demographic information which will be used in the selection procedure if more than the required number of interviewees respond. Students may volunteer in person during the session, or via email or internal mail after the introductory session.

If more than 6 students volunteer per School, then participants will be selected using the demographic information on the proforma, in order to achieve an equal gender balance and a representative age range. If further selection is needed, this will be done randomly by pulling names out of a hat.

A pilot set of interviews will be undertaken with 6 volunteer students from the researcher's home School prior to the commencement of the data gathering. These volunteers will be sought via email to the current Year 1 student cohort, including the pilot-participant information sheet (a version of the Student Participant Sheet, modified to refer to one interview rather than three). The same selection procedure as above will be used for these participants. These interviews will be transcribed and analysed before the commencement of the main data gathering period, subsequent to which the audio files will be deleted.

Participants will receive details of the interview process, and a list of the questions (see Appendix A for Interview Guide) at least 5 days prior to the date of the interview. Interviews will be arranged by the researcher with the participants, and will be held at a mutually-agreed location. Participants will be briefed before the interview and debriefed afterwards. Consent will be sought to record the interview using a digital audio recorder. Transcripts of the interviews will be created and held in a password-protected file. Audio files will be retained until the completion of analysis and then deleted. Participants will be offered a copy of the transcript of each interview for their records and provided an opportunity to redact any information prior to analysis.

Written consent for the interview and for permission to record the interview will be retained for each interview session.

Ethical Considerations:

Anonymity: All names and place names in the transcripts will be anonymised. Each participant will be asked to specify a pseudonym to be used in data analysis and publication, and the matching of the pseudonym with their real name will be kept in a password-protected file. No demographic details

will be used in publication that could identify the participants. No record of participants' identities will be shared with any 3rd Party.

Asking students to list their prior academic attainment and to rate their ongoing academic attainment: This information will be kept confidential and will not be possible to link back to a named individual.

Personally sensitive information: The interview questions are not anticipated to require the participants to reveal information of a personally-sensitive nature, however if a question elicits a response in this manner from the participant then the situation will be handled appropriately.

Data Security: Proformae and details of identities of participants will be kept in a locked filing cabinet. Recordings of interviews will be held in a password-protected folder on a desktop computer. Audio files and transcripts of interviews will be identified by pseudonym only. Proformae and interview recordings will be destroyed following publication of the research, or after 5 years, whichever is sooner.

Potential power-difference relationship: To minimise this concern, as the researcher is a lecturer at the participants' institution, all participants in the main analysis will be from other Schools and Colleges (Faculties) within the institution. Pilot interviews will be held with individuals from the researcher's own School, but these students will only be asked to participate in one interview each. Interviews will be held in a mutually-agreed location between the participant and interviewer.

The pilot interviews will occur in June/July 2016; main data collection will be between 1/9/16 and 30/6/17. The project analysis is anticipated to complete in December 2018.

B: I consider that this project **may** have ethical implications that should be brought before the Institute's Ethics Committee.	

Please state the total number of participants that will be involved in the project and give a breakdown of how many there are in each category e.g. teachers, parents, pupils etc.

C: SIGNATURE OF APPLICANT:

Note: a signature is required. Typed names are not acceptable.

I have declared all relevant information regarding my proposed project and confirm that ethical good practice will be followed within the project.

Signed: [redacted] Print Name **Stephen Rutherford** Date **9/5/16**

STATEMENT OF ETHICAL APPROVAL FOR PROPOSALS SUBMITTED TO THE INSTITUTE ETHICS COMMITTEE

This project has been considered using agreed Institute procedures and is now approved.

Signed: [redacted] Print Name Andy Kempe Date 23.5.16

(IoE Research Ethics Committee representative)*

* A decision to allow a project to proceed is not an expert assessment of its content or of the possible risks involved in the investigation, nor does it detract in any way from the ultimate responsibility which students/investigators must themselves have for these matters. Approval is granted on the basis of the information declared by the applicant.

APPENDIX A3

INFORMATION SHEETS FOR PARTICIPANTS

Principal Researcher: Dr Stephen Rutherford
Phone:
Email: [redacted]

Supervisor: Dr Elizabeth McCrum
Phone:
Email: [redacted]

Student Participant information sheet

Research Project: **Investigation of individual and collaborative self-mediated learning activities in Year 1 undergraduate students**.

Researcher: Dr. Stephen Rutherford

Dear Sir/Madam,

I would like to invite you to take part in a research study about self-mediated (self-directed) learning in Undergraduate students.

What is the study?

This study is part of a Doctorate in Education (EdD) research project undertaken by me, Stephen Rutherford of the School of Biosciences at Cardiff University. The Ed.D project is registered with the University of Reading (Ed.D supervisors Dr Elizabeth McCrum and Dr Naomi Flynn).
The study aims to investigate students' experiences of self-mediated learning during the transition between school/college and university education (during Year 1 of an Undergraduate degree). The project aims to identify strategies for self-mediated study that students find effective, how these change over time, and the extent to which study approaches are individualistic or collaborative in nature. The findings of the study are anticipated to help inform the way in which Higher Education study support is provided to students.

Why have you been chosen to take part?

The main aim of this project it to investigate student study approaches, and how these develop as undergraduate students move towards the independent learning that is typical of a University degree course. Therefore, I am specifically interested in the experience of Year 1 students, as you will be undertaking a transition process from studying at school/college to studying at University.
In order to investigate any discipline-specific factors which might impact on students' self-mediated study activities, I aim to recruit participants from two contrasting disciplines – a science and a humanities subject. I aim to recruit 9 participants from each School, who represent an appropriate balance of ages, genders and background that will enable the project to reflect the balance and diversity of students on your course.

Do you have to take part?

It is entirely up to you whether or not you participate. Approval has been gained from your Director of Learning and Teaching to approach you, but participation is entirely your decision.

Should you agree to participate, you may subsequently withdraw your consent for participation at any time during the project, without needing to give a reason, by contacting me either by telephone ([redacted]), or by email: [redacted]

University of Reading

Principal Researcher: Dr Stephen Rutherford
Phone: [redacted]
Email: [redacted]

Supervisor: Dr Elizabeth McCrum
Phone: [redacted]
Email: [redacted]

What will happen if you take part?

With your agreement, I will ask you to complete a very brief proforma (see attached) which will provide some basic demographic information about you and your background. This information will be used to select a balanced mixture of participants, and as background for the first interview.

If more than 9 individuals volunteer, the proforma will be used to identify 9 participants that have an appropriate range of ages and pre-University subject qualifications, as well as a gender balance, that will be conducive to a balanced study of your peer group. If there are still more than 9 volunteers after this selection process, then participants will be further selected by drawing names out of a hat. It is therefore possible that you may volunteer but not subsequently be asked to participate in the study. I will respond to all volunteers, regardless of the outcome of this selection process.

Subsequent participation will involve a series of 3 interviews, undertaken during the forthcoming academic year (in September/October 2016, January/February 2017 and May/June 2017, respectively). Each interview will last no more than 60 minutes. Interviews will be undertaken in a mutually-agreed location. The interviews will ask you to discuss your prior and current experiences regarding your study activities, as well as your future expectations regarding your studies.

If you agree to participate, you will be asked to give your written consent (see attached proforma). You will be asked permission for the interviews to be recorded with a digital audio recording device, however participation in the study is not conditional on consenting to this audio recording.

What are the risks and benefits of taking part?

The information given by you, and your identity, will remain confidential and will only be seen by myself and my Ed.D supervisors, Dr Elizabeth McCrum and Dr Naomi Flynn, of the University of Reading. Neither you nor your academic School will be identifiable in any published output resulting from the study. Please note that information about you and your responses will be confidential, and will *not* be shared with your School, or any other third party. Responses that you give will not, therefore, impact either on your assessment, or your progress, within your degree course.

Participants in similar studies have found it interesting to take part. In addition, you may find it beneficial to reflect upon your study strategies and approaches. I anticipate that the findings of the study will be useful for helping to develop support for future students in Higher Education, in developing their study skills and in identifying what approaches to study are most effective. The project will hopefully be beneficial to both your learning experience, and that of future students.

What will happen to the data?

Once each interview has been completed, the audio file will be transcribed into a typed document. At this point you will be offered the opportunity to review the transcript if you wish. You may also ask to review any of your interview transcripts at any point subsequent to this.

Any personal data collected will be treated as strictly confidential. No real names will be used in this study or in any subsequent publications. You will be asked to choose a pseudonym, and will be referred to by that pseudonym in all subsequent analyses and publication. No identifiers linking you or your School will

University of Reading

Principal Researcher: Dr Stephen Rutherford
Phone: [redacted]
Email: [redacted]

Supervisor: Dr Elizabeth McCrum
Phone: [redacted]
Email: [redacted]

be included in any published output of this research. Research records and data will be stored securely in a locked filing cabinet and on a password-protected computer and only I and the Ed.D supervisors, Dr McCrum and Dr Flynn, will have access to the records. The original audio recordings and any records identifying participants will be destroyed securely once the findings of the study are written up and/or published, or after five years, whichever is sooner. The results of the study may be presented at national and international conferences, and/or in written reports and articles. If you wish to be sent copies of these publications, please email me at [redacted]

What happens if I change my mind?
You can change your mind at any time without needing to give a reason. If you change your mind after data collection has occurred, we will discard all data from your interviews.

What happens if something goes wrong?
In the unlikely case of concern or complaint, you can contact the primary Ed.D project supervisor, Dr Elizabeth McCrum, University of Reading; Tel: [redacted], Email: [redacted]

Where can I get more information?
If you would like more information, or to discuss this project further, please contact Dr Stephen Rutherford Tel: [redacted] email: [redacted]

I do hope that you will agree to your participation in the study. If you do, please complete the attached proforma, and return it to me, either at the end of this class in the box provided, or as a scan/photograph by email to [redacted]
If asked to participate in the interviews, you will be asked to complete a further consent form prior to the commencement of the first interview.

This project undertaken a risk assessment in accordance with the University of Reading guidelines. The project has been reviewed following the procedures of the University Research Ethics Committee and has been given a favourable ethical opinion for conduct. The University has the appropriate insurances in place. Full details are available on request.

Thank you for your time.

Yours sincerely

[redacted]

Stephen Rutherford

APPENDIX A4

EXPRESSION OF INTEREST FORM

CONFIDENTIAL

Expression of Interest in participation in Educational Study

Information on this sheet will remain confidential and will not be shared with any third party. This information will be used only to inform selection of participants, and as background for the interviews and analysis.

Please return to the box provided, by email (scan or photograph) to [redacted]; or by Internal Mail to Dr S. Rutherford, School of Biosciences.

Name:

Degree Course:

Email Address:

Age:

Gender:

Country of residence immediately prior to attending University (please tick one) :

Wales	England	N.Ireland	Scotland	Other EU	Non-EU

Please can you outline your previous qualifications used as entry qualifications for University (e.g. A-Level, Bacculaureate, Access Course, or equivalent)

Qualification	Subject	Year Taken	Grade

APPENDIX A5

ETHICAL ISSUES AND MEDIATION FOR POTENTIAL PROBLEMS

Informed Consent: All potential participants were provided with a hardcopy of the information sheet outlining the aims of the study, and clearly outlining the time commitment, the framework for the interviews, for what purposes the data would be used, and highlighting issues of confidentiality and anonymity. The potential participants were also informed of the potential benefits of participation, such as the ability to reflect on the efficacy of one's learning methods. At the start of the interview, participants were provided with another hardcopy of the information sheet, and a verbal summary about the study and their role as a participant. The parameters for their involvement were explained that the start of the interview. All participants were asked to sign consent forms prior to the first interview, and were also asked to provide consent for the interviews to be recorded using an electronic audio recording device. Consent forms have been kept on file in a locked cabinet.

Confidentiality and Anonymity: Audio recordings of the interviews were kept confidential, and available only to myself, until the transcript was made and the participants anonymised appropriately (BERA, 2011, pp. 7-8; Brinkmann and Kvale, p.91). In cases where the transcription was undertaken by a third party, this was a professional transcriptional service experienced in the transcription of confidential material, and audio files were identified using the pseudonym of the participant. Interview audio files were transferred to a computer and kept in a password-protected folder, as was a spreadsheet aligning individual participants with their pseudonym. All participants were allocated a pseudonym for anonymity, and the names of people or places identified in the interviews were also changed in the written transcript. It was made clear to the participants that their home School was unaware of their participation, and it would not be possible to trace their identity in any subsequent written reports. Participants were offered the opportunity to review the transcripts, if they wished to do so, and were also offered the opportunity to be informed of the outcomes of the analysis of the data. Participants were also informed that the any comment made in the interviews would be confidential and would not be reported to any third party (including their home School), unless as an anonymised quote within a publication.

***Avoidance of coercion and power differential*:** An important consideration for the main longitudinal study was that the participants should not be of the same academic School as myself, as I am well known to, and an authority figure for, students within my own School. Such a relationship would potentially provide a restrictive, or potentially coercive, environment for the participants. Within the Schools of Bioscience, History and Chemistry, there is a tradition of formality between students and staff, with most staff preferring to be addressed by their title and surname, rather than their forename. This therefore could potentially have created a power differential between the researcher and participants, and so it was important to remove all trappings of institutional status (such as academic title in emails, and email signatures) when communicating with participants.

Ability to withdraw from the study: It was made clear to all participants that they could withdraw from the study at any time, without needing to provide a reason for doing so. Similarly that they could decline to answer any question without needing to provide a reason. All interviews were held at a neutral venue, such as a university classroom, so that the participant could leave the interview at any time, should they wish to do so. For the pilot interviews and the first two interviews in the main cycle, the location was my own office, but for all other interviews it was a university classroom, or an open social space if a room was unavailable. The choice of space was agreed by both parties before the interview, and it was important to identify a space that did not belong to the participant, so that if they wished to terminate the interview, they could simply leave the space without the need to remove me, the researcher, from that space. Participation in the study was not conditional to any reciprocal arrangement, and the participants were not paid for their time.

Avoidance of harm to participants: Another major ethical consideration was to consider possible consequences of the interview for the participant (BERA, 2011, pp. 7; Brinkmann and Kvale, p.91). Although there was no danger of physical harm to participants, there was a possibility of a participant becoming upset by a question, or retrospectively upset by something they had revealed. It was made clear to participants that they did not have to answer the questions asked, and could review or redact information after the interview if they wished to do so. On occasion participants revealed either confidential or sensitive information, for example regarding their relationships, academic failure, areas of emotive impact, or revealed personal information about sexuality a disability or. In these situations, it could not be ignored that I had a role, and an institutional duty of care, as an academic member of staff for the institution. These issues therefore had to be treated with sensitivity, and supportive responses given as appropriate. However, equally an approach had to be taken to minimise the potential impact and discomfort of these issues for the participant in the interview situation. In cases where it was professionally important to offer advice on such issues, this was dealt with after the completion of the interview, when it was made clear to the participant that the audio recorder had been switched off, and that these discussions did not constitute part of the research study, and would not be used as such.

***Improvement of the situation being investigated*:** The ethical consideration that interviews should be considered with regard to improvement of the situation being investigated (REF), was fulfilled by emphasising in the information sheet distributed to prospective participants, that the reflective process endemic to the interviews would potentially be beneficial to the participants when considering their own study approaches. Indeed, this was the case, as several participants stated prior to, or after, the final interview that the interview process had been beneficial because it had encouraged them to consider and challenge their own study practices.

APPENDIX A6

CONSENT FORM FOR PARTICIPANTS

University of Reading

Principal Researcher: Dr Stephen Rutherford
Phone: [redacted]
Email: [redacted]

Supervisor: Dr Elizabeth McCrum
Phone: [redacted]
Email: [redacted]

Participant Consent Form

I have read the Information Sheet about the project and received a copy of it.

I understand what the purpose of the project is and what is required me. All my questions have been answered.

Name: _____

Name Academic School: _____

Please tick as appropriate:

I consent to being interviewed, as described in the Information Sheet ☐

I consent to the interviews being recorded using a digital voice recorder ☐

Signed:_____

Date: _____

APPENDIX B1

EXAMPLE OF LINE-BY-LINE CODING

B1.1 Summary of Outcomes from 'Line-by-line' coding

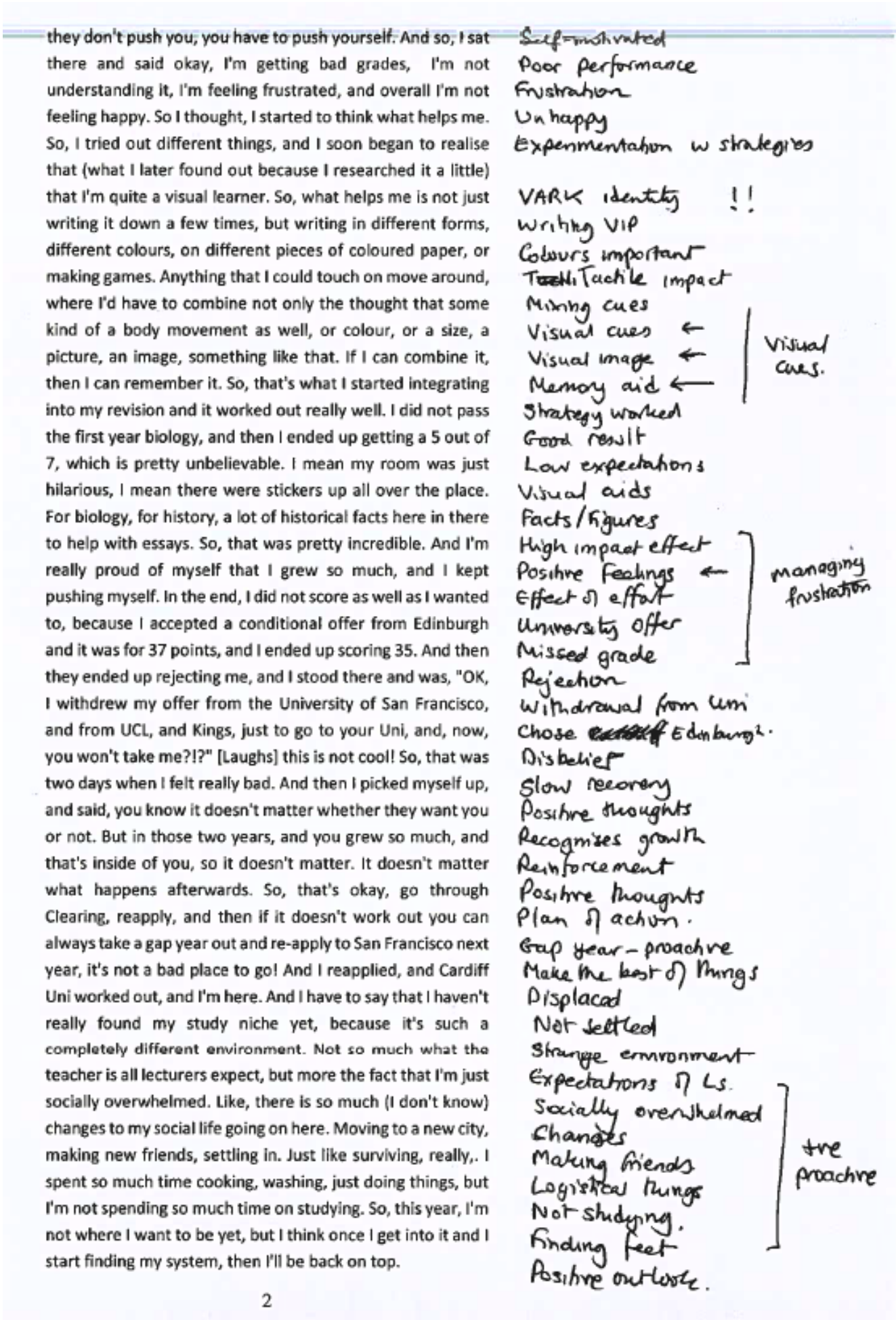
Line-by-line coding is a heuristic device, designed to support the researcher in gaining a broad understanding of the data, rather than for generating theory (Charmaz, 2014). This was the case during the analysis of the data. Not all of the codes identified in the line-by-line coding were useful, and codes were very numerous and diverse (a result of forcibly assigning a code to each half-line of text). Categories emerged from the coding, when codes were viewed holistically, which were useful in determining interview schedules for subsequent interview cycles, and for cross-referencing against outcomes of subsequent focused coding.

Figure B1.1 illustrates an example of line-by-line coding from the first interview with Grace (this has been chosen as it represents a long stream of unbroken speech from the participant). Grace is describing her experiences whilst studying the International Baccalaureate, which included her adapting her study approaches when she realised they were not working. The extract also includes her experiences while applying for, and then coming to, university. Each line has been given a descriptor. Line-by-line coding was undertaken by hand on a hardcopy of the transcript. Notes and memos were made on the pages as the coding was being performed.

Categories defined by line-by-line coding in each interview cycle are illustrated in Figure B1.2. Several categories were common across each cycle of interviews, such as the importance of social peers, self-defined study strategies; negative feelings or the lack of social contact on the degree course. Some categories appeared localised to one interview cycle, for example 'uncertainty about the future' and 'recognising a new challenge', were found only in interview 1, while 'evolving identity', 'disengagement', and 'learning is a journey' were only identified in interview 3. The distribution of the categories with other categories to which they clearly aligned sometimes changed. For example, 'negative feelings' in interview cycle 1 were strongly influenced by negative self-image. In Interview cycle 2, the focus of negative feelings shifted to frustration with the academic environment, as participants' confusion and uncertainty over academic expectations placed on them led to frustration, irritation and angst. Finally, negative feelings aligned more with 'disengagement' and 'strategic investment of effort' in Interview 3.

Figure B1.1 (overleaf) **Example of line-by-line coding**. Excerpt from Interview 1 with Grace, showing the allocation of codes to individual lines of the transcript. The transcript was presented as a narrow column, with an individual descriptor added for each line, where possible. The coding was undertaken by hand on a hardcopy of the transcript.

Figure B1.1 – Example of Line-by-line coding – Grace Interview 1



they don't push you, you have to push yourself. And so, I sat there and said okay, I'm getting bad grades, I'm not understanding it, I'm feeling frustrated, and overall I'm not feeling happy. So I thought, I started to think what helps me. So, I tried out different things, and I soon began to realise that (what I later found out because I researched it a little) that I'm quite a visual learner. So, what helps me is not just writing it down a few times, but writing in different forms, different colours, on different pieces of coloured paper, or making games. Anything that I could touch on move around, where I'd have to combine not only the thought that some kind of a body movement as well, or colour, or a size, a picture, an image, something like that. If I can combine it, then I can remember it. So, that's what I started integrating into my revision and it worked out really well. I did not pass the first year biology, and then I ended up getting a 5 out of 7, which is pretty unbelievable. I mean my room was just hilarious, I mean there were stickers up all over the place. For biology, for history, a lot of historical facts here in there to help with essays. So, that was pretty incredible. And I'm really proud of myself that I grew so much, and I kept pushing myself. In the end, I did not score as well as I wanted to, because I accepted a conditional offer from Edinburgh and it was for 37 points, and I ended up scoring 35. And then they ended up rejecting me, and I stood there and was, "OK, I withdrew my offer from the University of San Francisco, and from UCL, and Kings, just to go to your Uni, and, now, you won't take me?!?" [Laughs] this is not cool! So, that was two days when I felt really bad. And then I picked myself up, and said, you know it doesn't matter whether they want you or not. But in those two years, and you grew so much, and that's inside of you, so it doesn't matter. It doesn't matter what happens afterwards. So, that's okay, go through Clearing, reapply, and then if it doesn't work out you can always take a gap year out and re-apply to San Francisco next year, it's not a bad place to go! And I reapplied, and Cardiff Uni worked out, and I'm here. And I have to say that I haven't really found my study niche yet, because it's such a completely different environment. Not so much what the teacher is all lecturers expect, but more the fact that I'm just socially overwhelmed. Like, there is so much (I don't know) changes to my social life going on here. Moving to a new city, making new friends, settling in. Just like surviving, really,. I spent so much time cooking, washing, just doing things, but I'm not spending so much time on studying. So, this year, I'm not where I want to be yet, but I think once I get into it and I start finding my system, then I'll be back on top.

2

Self-motivated
Poor performance
Frustration
Unhappy
Experimentation w strategies

VARK identity !!
Writing VIP
Colours important
Tactile impact
Mixing cues
Visual cues ←
Visual image ←
Memory aid ←
Visual cues.
Strategy worked
Good result
Low expectations
Visual aids
Facts/figures
High impact effect
Positive feelings ←
Effect of effort
University offer
Missed grade
managing frustration
Rejection
Withdrawal from Uni
Chose Edinburgh.
Disbelief
Slow recovery
Positive thoughts
Recognises growth
Reinforcement
Positive thoughts
Plan of action.
Gap year – proactive
Make the best of things
Displaced
Not settled
Strange environment
Expectations of Ls.
Socially overwhelmed
Changes
Making friends
Logistical things
Not studying.
Finding feet
Positive outlook.
tve proactive

Figure B1.2

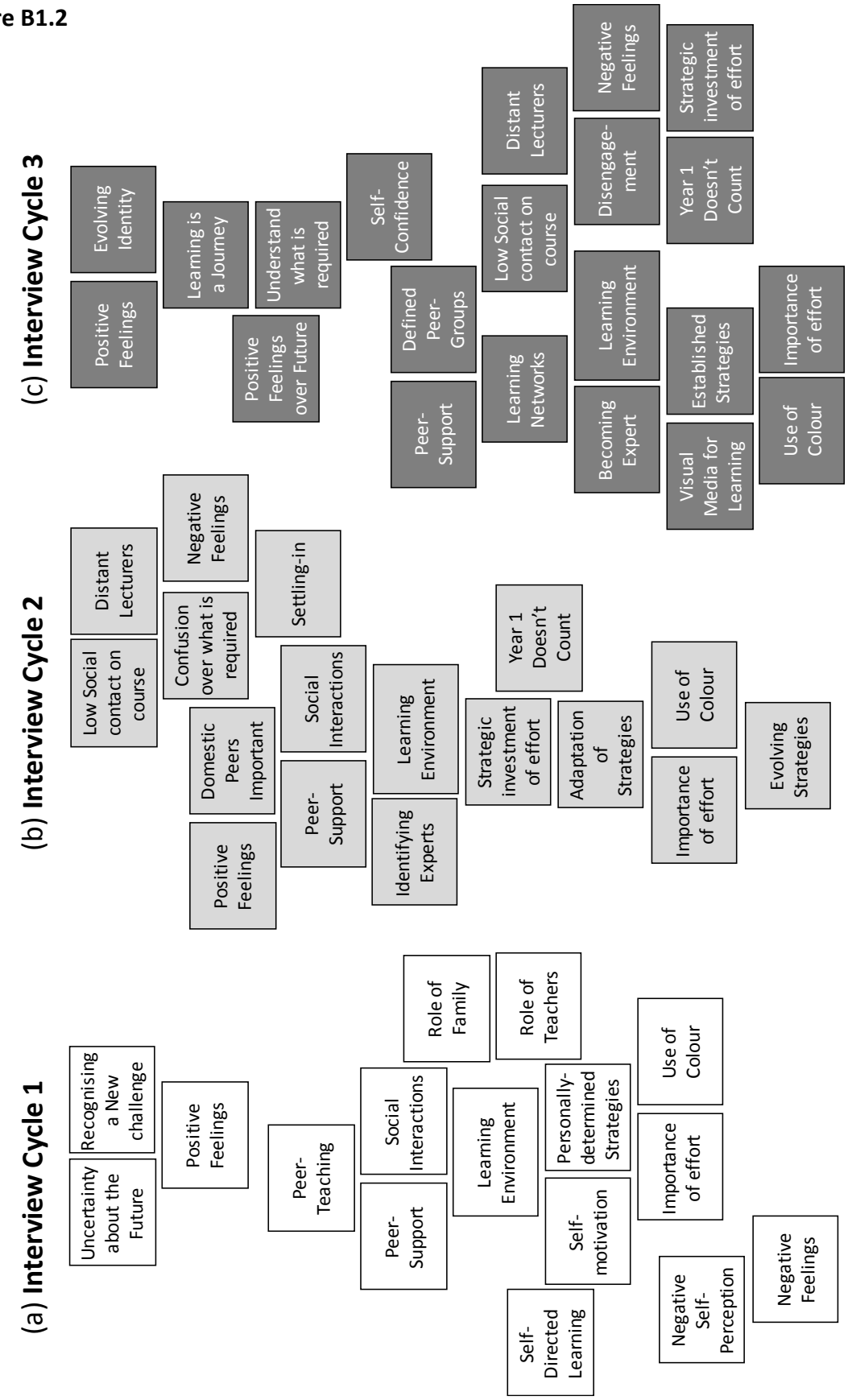


Figure B1.2 - Summary of common categories from line-by-line coding. Individual categories are represented by coloured boxes: (a) white = interview 1; (b) light grey = interview 2; (c) dark grey = interview 3. Position in the diagram is arbitrary, expect that that categories are clustered together with categories that either shared codes, or addressed similar concepts (e.g. school environment and class size).

APPENDIX B2

SUMMARY OF INCIDENT-WITH-INCIDENT CODING

B2.1 Summary of Outcomes from 'Incident-with-incident' coding

The incident-with-incident coding approach was an essential feature of the analytical process. As this study related primarily to the lived experiences of the participants, the process of comparison of the participants' experiences was an important activity. The principal benefit of incident-with-incident coding was to identify commonalities and/or differences between situations or experiences. This could either be a comparison between individuals (see figure 6.2(a) for an example), or across a time period (between school and university, and/or between interview cycles; see figure 6.2(b) as an example). The following is a list of the concepts mapped using incident-with-incident coding.

- Interactions with teachers
- Interactions with family members
- Advice from teachers
- Advice from partners/older siblings
- Positive experiences in studying
- Verification that one understands a concept
- Use of study partners
- Use of study groups
- Use of the library
- Problem-solving for others
- Interactions with peers on degree course
- Use of colour in study notes
- Engagement in peer-teaching
- Teaching others to confirm understanding
- Use of visual aids (post-it notes, mind-maps, whiteboard, learning resources)
- Explaining identity to others
- What would you say if you met your younger self?

Figure B2.1 illustrates an example of a section of coding from the NVivo project showing Jane's first interview that illustrates the coding for use of colour. Figure B2.2 shows a page from the NVivo report summary of codes identified through incident-with-incident coding, showing examples of codes from Bryn and Camille's Interview 1 transcripts.

Figure B2.1

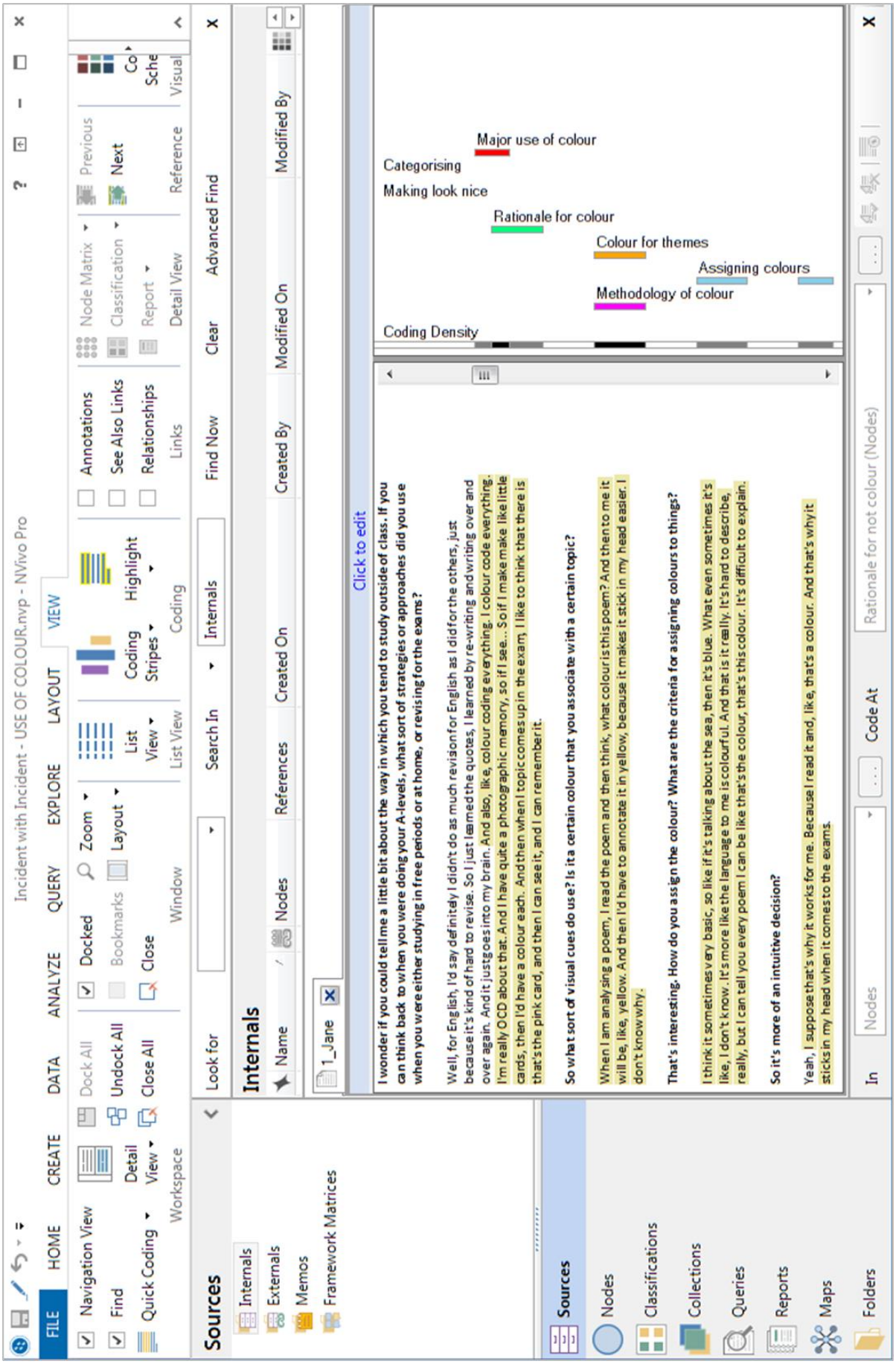
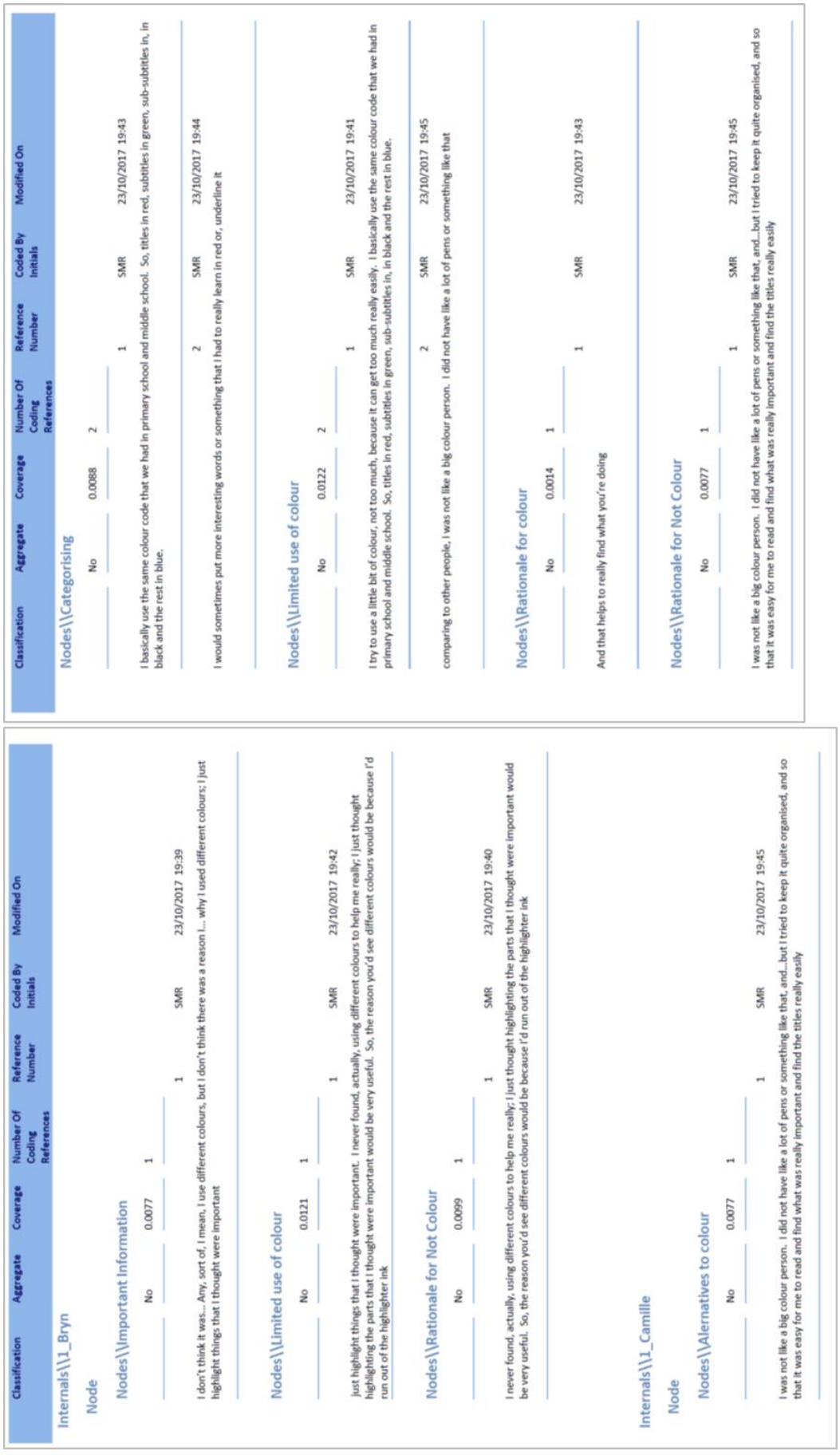


Figure B2.1 – Examples of coding of one transcript, Jane Interview 1, from incident-with-incident coding: 'Use of colour in study notes'

Figure B2.2



Classification	Aggregate	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On
Internals\\1_Bryn						
Node						
Nodes\\Important Information						
	No	0.0077	1			
				1	SMR	23/10/2017 19:39
I don't think it was... Any, sort of, I mean, I use different colours, but I don't think there was a reason I... why I used different colours; I just highlight things that I thought were important						
Nodes\\Limited use of colour						
	No	0.0121	1			
				1	SMR	23/10/2017 19:42
just highlight things that I thought were important. I never found, actually, using different colours to help me really; I just thought highlighting the parts that I thought were important would be very useful. So, the reason you'd see different colours would be because I'd run out of the highlighter ink						
Nodes\\Rationale for Not Colour						
	No	0.0099	1			
				1	SMR	23/10/2017 19:40
I never found, actually, using different colours to help me really; I just thought highlighting the parts that I thought were important would be very useful. So, the reason you'd see different colours would be because I'd run out of the highlighter ink						
Internals\\1_Camille						
Node						
Nodes\\Alernatives to colour						
	No	0.0077	1			
				1	SMR	23/10/2017 19:45
I was not like a big colour person. I did not have like a lot of pens or something like that, and...but I tried to keep it quite organised, and so that it was easy for me to read and find what was really important and find the titles really easily						

Classification	Aggregate	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On
Nodes\\Categorising						
	No	0.0088	2			
				1	SMR	23/10/2017 19:43
I basically use the same colour code that we had in primary school and middle school. So, titles in red, subtitles in green, sub-subtitles in, in black and the rest in blue.						
				2	SMR	23/10/2017 19:44
I would sometimes put more interesting words or something that I had to really learn in red or, underline it						
Nodes\\Limited use of colour						
	No	0.0122	2			
				1	SMR	23/10/2017 19:41
I try to use a little bit of colour, not too much, because it can get too much really easily. I basically use the same colour code that we had in primary school and middle school. So, titles in red, subtitles in green, sub-subtitles in, in black and the rest in blue.						
				2	SMR	23/10/2017 19:45
comparing to other people, I was not like a big colour person. I did not have like a lot of pens or something like that						
Nodes\\Rationale for colour						
	No	0.0014	1			
				1	SMR	23/10/2017 19:43
And that helps to really find what you're doing						
Nodes\\Rationale for Not Colour						
	No	0.0077	1			
				1	SMR	23/10/2017 19:45
I was not like a big colour person. I did not have like a lot of pens or something like that, and...but I tried to keep it quite organised, and so that it was easy for me to read and find what was really important and find the titles really easily						

Figure B2.2 - Example selection of text identified in coding from incident-with-incident coding: 'Use of colour in study notes'. NVivo 11 report of codes assigned related to use of colour in studying, showing codes from Interview 1 for Bryn and Camille.

APPENDIX B3

SUMMARY OF FOCUSED CODING

Figure B3.1 overleaf illustrates a screenshot of NVivo 11 software coding a section of Interview 1 with Grace. Beige highlights show the text being captured for coding, and the coloured bars to the right hand side show the individual codes as they appear in the transcript.

A scan of the hand-written Memo notes for this interview coding cycle are shown in Figure B3.2. Memos were made by hand as the coding process proceeded, and used to develop theories and ongoing themes as the analytical process proceeded. The memos shown are for the same section of Grace's Interview 1 used in previous appendices. Figure B3.2(a) also shows the last page of Memoing for the first interview with Bryn (left hand side of image). Memos highlight both common themes within the data and ideas of wider concepts and links that occurred during the coding.

Figure B3.1 – Example of Focused coding

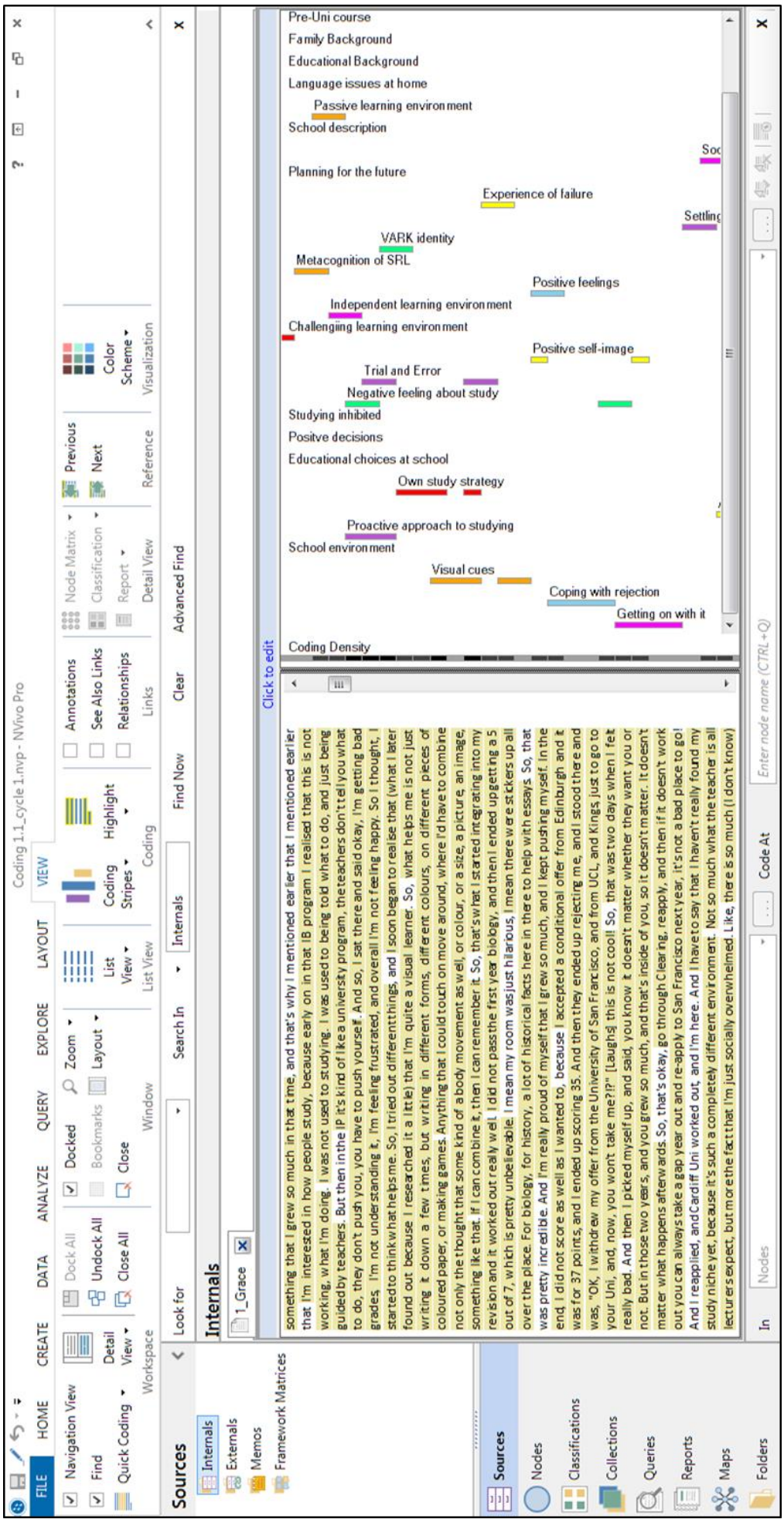


Figure B3.2 – Example of Memoing during Focused coding

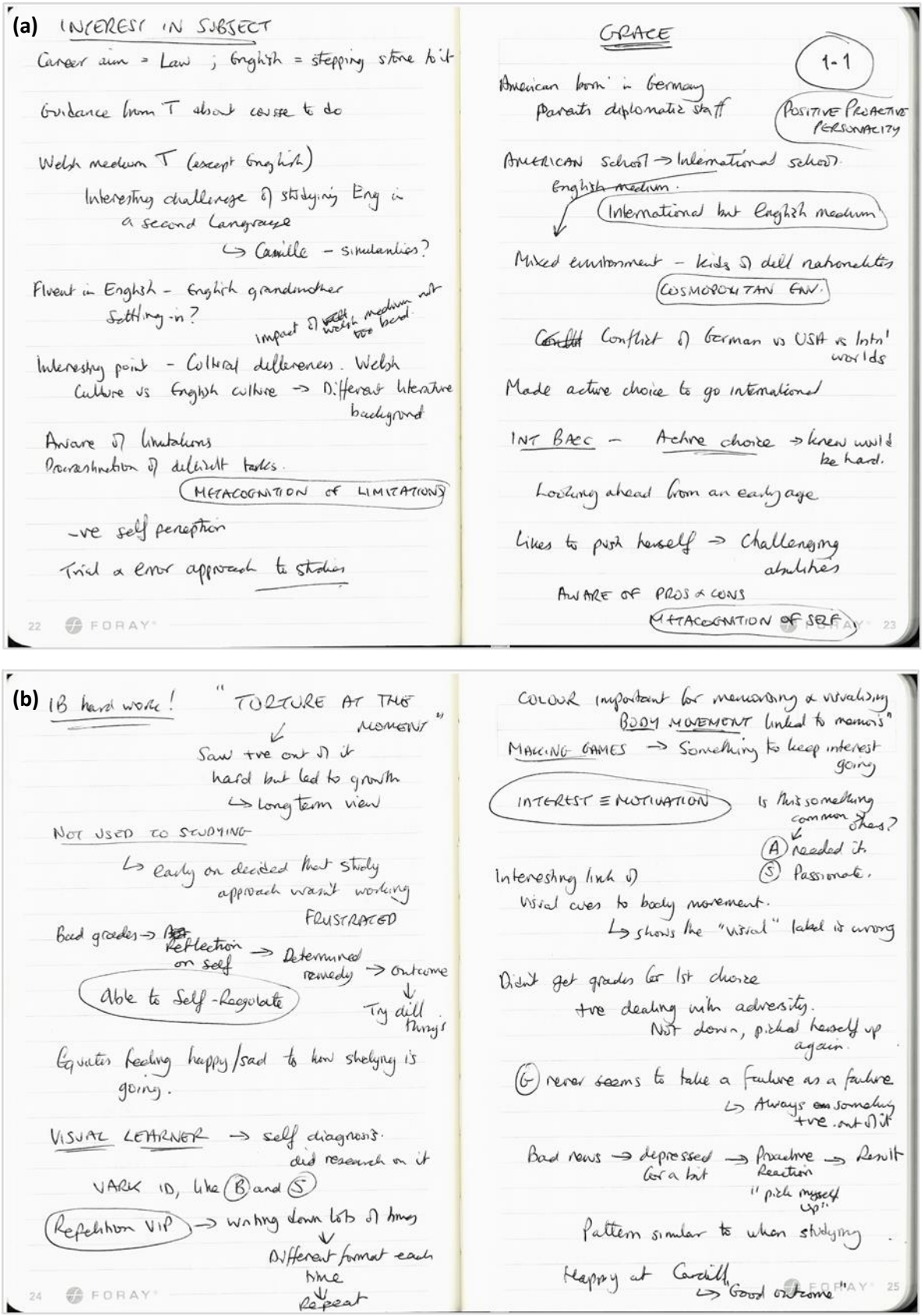


Figure B3.2 – Examples of Memoing undertaken during focused coding sessions. Images shown are from the Memoing during the first cycle of coding for Interview 1 for Bryn (panel (a), left hand side) and Grace (Panel (a) right hand side and panel 9b). Memos were made by hand alongside the NVivo coding of the transcripts.

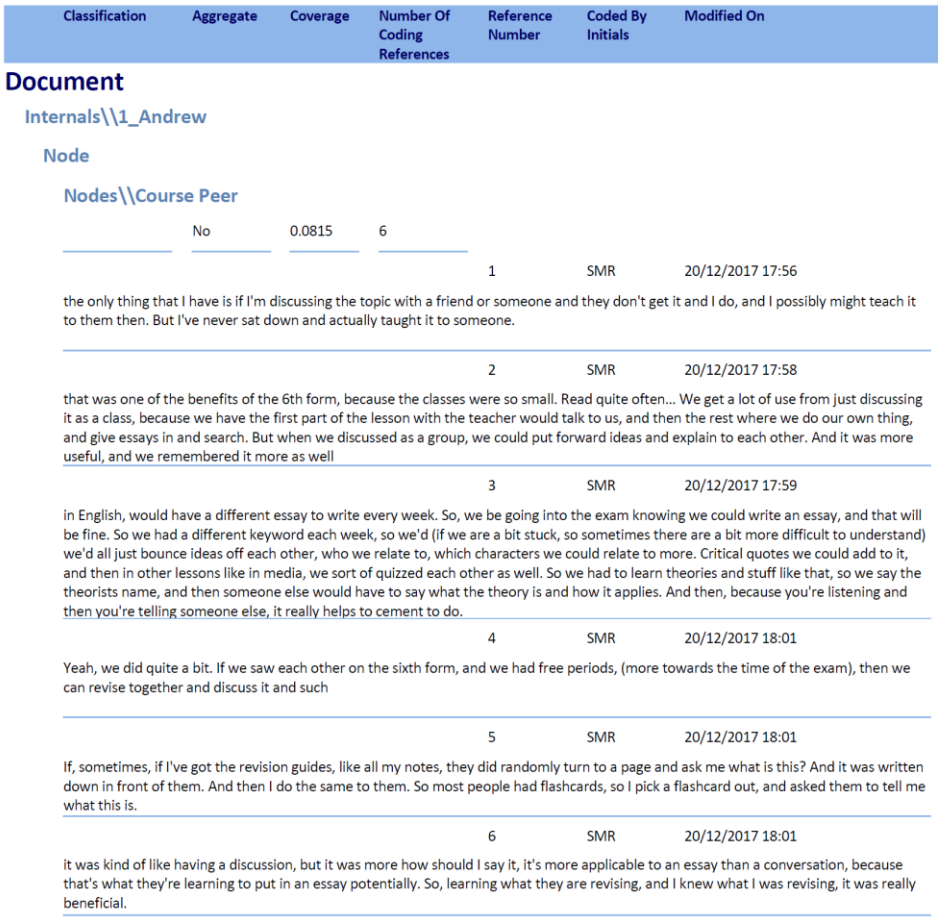
APPENDIX B4

SUMMARY OF AXIAL CODING

Axial coding was undertaken for each of the fifteen categories. Each category was coded in a small number of pre-determined codes. Figure B4.1 shows an example of codes from one Axial coding analysis.

Figure B4.1 (this page and overleaf) – Codes from Axial Coding of "Interactions with Others". Example shows codes from Andrew and Bryn Interview 1. Codes are identified by the individual(s) involved in the interaction (e.g. Course peer, Domestic Peer, Parent(s), Sibling(s).

Figure B4.1



Classification	Aggregate	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On
Document						
Internals\\1_Andrew						
Node						
Nodes\\Course Peer						
	No	0.0815	6			
				1	SMR	20/12/2017 17:56
the only thing that I have is if I'm discussing the topic with a friend or someone and they don't get it and I do, and I possibly might teach it to them then. But I've never sat down and actually taught it to someone.						
				2	SMR	20/12/2017 17:58
that was one of the benefits of the 6th form, because the classes were so small. Read quite often... We get a lot of use from just discussing it as a class, because we have the first part of the lesson with the teacher would talk to us, and then the rest where we do our own thing, and give essays in and search. But when we discussed as a group, we could put forward ideas and explain to each other. And it was more useful, and we remembered it more as well						
				3	SMR	20/12/2017 17:59
in English, would have a different essay to write every week. So, we be going into the exam knowing we could write an essay, and that will be fine. So we had a different keyword each week, so we'd (if we are a bit stuck, so sometimes there are a bit more difficult to understand) we'd all just bounce ideas off each other, who we relate to, which characters we could relate to more. Critical quotes we could add to it, and then in other lessons like in media, we sort of quizzed each other as well. So we had to learn theories and stuff like that, so we say the theorists name, and then someone else would have to say what the theory is and how it applies. And then, because you're listening and then you're telling someone else, it really helps to cement to do.						
				4	SMR	20/12/2017 18:01
Yeah, we did quite a bit. If we saw each other on the sixth form, and we had free periods, (more towards the time of the exam), then we can revise together and discuss it and such						
				5	SMR	20/12/2017 18:01
If, sometimes, if I've got the revision guides, like all my notes, they did randomly turn to a page and ask me what is this? And it was written down in front of them. And then I do the same to them. So most people had flashcards, so I pick a flashcard out, and asked them to tell me what this is.						
				6	SMR	20/12/2017 18:01
it was kind of like having a discussion, but it was more how should I say it, it's more applicable to an essay than a conversation, because that's what they're learning to put in an essay potentially. So, learning what they are revising, and I knew what I was revising, it was really beneficial.						

Figure B4.1

(continued)

Classification	Aggregate	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On
Nodes\\Teacher						
	No	0.0069	1			
				1	SMR	20/12/2017 17:55

Towards the end when it was more independent, the teachers were just there. They were there to help you on anything. And because it was such a small class, she knew what everyone was doing

Internals\\1_Bryn

Node

Nodes\\Course Peer

	No	0.0507	4			
				1	SMR	20/12/2017 18:07

because it was such a small school, it was handy that you knew everyone in the class; and then it would be quite easy to message them and say; do you want to revise this? And they were probably doing the same thing; so, you'd get together in the study room and go ove... over what you weren't sure of

				2	SMR	20/12/2017 18:08

another technique I thought was, quizzing each other; so, just saying... asking a question about the subject and then getting an answer. And then if you were wrong, then they'd... you'd just read the passage out of the book – and I thought that... that sense of being wrong, maybe sort of gave you a kick in the ass and then you thought, 'Oh, I need to learn this now'. So, you'd put everything that you didn't know down, and you'd learn it; and then you'd look back at when they were testing you and sort of you'd visualise it

				3	SMR	20/12/2017 18:08

at the start, it was probably just reading out of the book and then saying... explaining as the book said. But towards the end and closer towards the end of the year, you'd be able to put the book down and explain in your own words; and I think that was a lot of help, because in the exam that's what you have to do (explain it in your own words)

				4	SMR	20/12/2017 18:08

some questions, if we were testing each other, would be explain this; and then you'd explain it in your own words

Nodes\\Friends

	No	0.0121	1			
				1	SMR	20/12/2017 18:10

If you were with your friends. Because with the friends that I have on the course, they were actual friends rather than just classmates. So, it was probably a bit difficult when we got together to do work, because there wasn't much work going on. So, it might have been better that I had studied by myself

Nodes\\Parent(s)

	No	0.0081	1			
				1	SMR	20/12/2017 18:06

my parents did, did very different subjects in A-Level and in uni as well; so, they tried to help as much as they could, but it was just to an extent because they couldn't really relate to what I was doing.

Nodes\\Solitary

	No	0.0202	2			
				1	SMR	20/12/2017 18:09

It was mostly at home by myself then, because, the friends that I have in the village are either a year above or a year below - so, they weren't doing the, the same work as I did. But , so, I... , there wasn't much sort of team work there; it was just having a look at the books and reading by myself.

				2	SMR	20/12/2017 18:10

I wouldn't say I enjoyed studying by myself, but I thought that I could get more in studying by myself – and then there was less temptation of, sort of, moving onto different subjects that weren't school related.

Nodes\\Teacher

	No	0.0133	2			
				1	SMR	20/12/2017 18:05

our teacher encouraged us to do mind maps and I thought we did quite a few of those in class itself; so, I thought, , I'm learning quite a bit from doing these mind maps. So, that's why I resulted in doing, when actually revising by myself as well.

				2	SMR	20/12/2017 18:06

the teachers were quite a bit of help; they had, a few revision sessions before the exams.

Internals\\1_Camille

Node

Nodes\\Course Peer

	No	0.0779	4			
				1	SMR	20/12/2017 18:33

we weren't too many already in the class, and then we weren't too many who did the class and the English section. So, because our schedules were weird compared to them, we were always in, the class. I don't know, the class you go to when you don't have class on that hour and, we would either expand on what we had...learned in, in philosophy or something, like expand on a debate, expand on something like because we were really interested in that, or we would, study for a bit, and sometimes it worked, sometimes it didn't – it depended on our mood, on the day, on the people who were there, but we were always quite a close-knit, group. But still, it wasn't very effective, except when it was, like, two hours before the test

APPENDIX C

SUMMARY OF CATEGORIES FROM THE CGTh ANALYSIS

(i) **Importance of Effort:** A common finding was that the participants frequently reported the importance of using approaches that were very time-consuming. This finding was surprising, as one might have expected the participants to identify approaches that were efficient and provided them with more free time outside of studying. However, in most cases participants equated efficacy of study approaches with the effort put into them. Effort was exemplified either by taking a long time to accomplish a task with detailed diligence, an obsession with neatness, or repetition of an activity.

(ii) **Learning Cues:** Visual cues were important to most participants. Cues were typically either use of colour, images/drawings, or mind-maps. Several participants reported having highly-visual memories, enabling them to picture the information when recall was needed. The recurring nature of the use of these visual cues was noticeable in the data, but subject to variation. For example, the role of colour varied between individuals, from having very specific meanings to colour simply being used to highlight items of note.

(iii) **Learning Environment:** The study environment was universally perceived as important. This category is comprised of two super-codes related to the temporal and physical environment of study. Participants typically were aware of the need to manage and plan their study time, however, few claimed success at doing so. Management of time remained a challenge for most participants, and it was common for them to attempt a range of different strategies during the course of the year to address the need to prioritise, stay on task, co-ordinate deadlines, and manage time as a resource. The ambiance of the study environment was equally important and varied. Some participants preferred quiet spaces, such as a library or a room, others would choose to study in a communal kitchen or common space. Often it was the presence of others, the implied peer-pressure to study, that was important for maintaining focus when studying.

(iv) **Reflective Development:** Participants were typically highly reflective about their own learning development and the progressive development of their learning strategies. They were keenly aware of what seemed to work *for them,* and these effective strategies were developed through trial-and-error. The challenge to the participants came from the need to adapt these strategies to their new educational environment in HE, as they gradually discovered what the parameters of that environment were. This category aligns closely with the 'Entering the Higher Education Community of Practice' category below.

The third super-code in this category was of particular note, as it focused around participants' awareness of their own limitations. In the first interview cycle this super-code was particularly significant, with the participants typically referring to activities they were not good at, or unable to undertake. This super-code is linked strongly to the 'Negative Self-image' super-code below.

(v) **Self-regulation Strategies:** There was a strong sense from the outset that the participants were already highly-self-regulated in their learning. The coding highlighted organisational and prioritisation strategies, and iterative adoption of effective learning strategies (or at least strategies which were perceived to be effective), and so there is a strong link between this category and the Reflective Development category. A common feature of self-regulation was a rejection of structures and learning methodologies imposed by teachers, lecturers and/or parents. Rejection was common when a participant was forced to use a methodology (e.g. making mind maps or revision timetables) which was contrary to the way they felt they studied best.

(vi) **Peer Interactions:** The importance of contact and mutual support from either domestic peers in shared residences, or peers on the degree course, was evident with all participants. The relative frequency, importance and nature of these interactions differed between participants, and – more significantly – changed as they progressed through their first year of university study. The importance of domestic or social groups was more significant than academic peers on their course, especially for humanities students. These peer groups were equally important for academic support, moral support and social development.

(vii) **Personal Learning Networks:** The data clearly showed that the participants quickly developed academic and social support networks around them, both at school and at university. Personal Learning Networks included a range of individuals, technologies and groups which each participant could use as a resource as required. Likewise participants also understood where they featured within those support networks. The super-codes within this category often changed between each interview cycle, as the networks developed and the interactions between the participants and their social contacts evolved.

(viii) **Situated Learning:** This category focused around the extent to which participants actively included or excluded others in their learning activities. Super-codes within this category highlighted direct interactions, such as teaching or explaining to others as a means of reinforcing knowledge, as well as behaviours to actively avoid collaboration or peer-based learning. This duality also varied between individuals, and developed as they adapted to the new educational environment of the university.

(ix) **Entering the Higher Education Community:** A range of super-codes deal with the participants' experiences of becoming students of, or practitioners within, their discipline – 'learning the Rules of the Game'. The process of adaptation was a key focus for most participants, with earlier codes focusing more about them orientating themselves in the university environment, and codes from interview cycle 3 focusing around their adapting themselves to fit the HE CoP. Key to this category was the process of understanding the academic requirements of HE, and the concepts of critical analysis and independent learning. A key super-code, only evident in Interview Cycle 2, was a

concept of 'familiar unfamiliarity', whereby participants seemed to cling to familiar concepts as they attempted to determine the more complex requirements of HE. This code was conspicuously absent in the final interview cycle. There were disciplinary differences in how participants adapted, with chemistry students adapting more-readily than humanities.

(x) **Personal Development:** The transition process to HE involved considerable personal development –reshaping academic and social skills, and forming new peer groups. Underlying these experiences was learning to live independently (which for many participants was novel, coming from a family home environment).

(xi) **Barriers to Learning 'the Rules of the Game':** There several super-codes which identified the barriers to effective transition to HE and inclusion in the community of practice. Many super-codes focused around participants' lack of understanding of the requirements placed on them, and the frustration or disengagement caused by this. Strategic and consumerist perspectives of the degree course were revealed as common barriers to effective incorporation in the CoP, reinforcing a perceived 'them-and-us' dynamic between participants themselves, as students, and the academic environment of their discipline.

Covering areas of similarity to the previous three categories were a final collection of categories which focused on developing self-identities of the participants. Development as independent learners was closely entwined with evolving self-perceptions of the participants, as were where they placed themselves within different social groups and communities in school and university.

(xii) **Identity Development:** This category focused around the established identities of the participants at various points in their development, and the processes by which this evolved from the identity of a school pupil to one of a university student or fledgling professional. There was a strong emphasis on the degree of independence shown by the participant, and its implications. Also the feeling that developing as a person was a journey which needed to be lived, and this journey should not be circumvented or avoided.

(xiii) **Challenges to identity development:** Factors which limited identity development were also evident from the data. Participants commonly identified themselves either with negative self-images (typically describing themselves in terms of things they were *not*, or could not do). The negative self-image was reinforced by a clear identification with a defined learning style (visual or auditory learner, most commonly) and an implication that developing alternate learning strategies would be ineffective. For many participants, the experience of moving from being the top student in the class, to being only one of a large number of similar peers (a 'small fish in big pond') was also a challenge.

(xiv) **Positive Experiences:** There were also positive factors that impacted upon identity, such as satisfaction, even euphoria, that accompanied good results and effective learning. There were cases where positive reinforcement was evident from understanding a difficult subject. Self-confidence (or

at least emerging self-confidence) was a common thread through the interview cycles to differing extents for individual participants.

(xv) **Developing Long-term Strategies:** A corresponding factor to identity development, that emerged from the data, was the extent to which participants engage in planning for the longer-term. There was an interesting dichotomy here; although several participants had a clear concept of where they were going, there was a strong focus on living in the moment, and not planning for, or worrying about, the future. There was also evidential uncertainty about where their course was taking them, and so in some cases this disengagement with the future appeared to be a safety mechanism against undue stress.

APPENDIX D1

EXAMPLES OF SITUATED MAPS USED DURING THE SITUATIONAL ANALYSIS PROCESS

The situational mapping process had three major stages. Firstly the development of a 'Messy Map', a collection of concepts, individuals, or structures extracted from the data, noted down on a hardcopy A3 sheet (the original Messy Map has been lost, and so cannot be shown). The second stage is an 'Ordered Map' (Figure D1.1) is a table comprised of the elements from the Messy Map, and a re-evaluation of the data, divided into categories, and supplemented with factors form the professional experience of the researcher (as advised by Clarke, 2005). These categories are:

- ***Individual Human elements/actors*** (people who have an impact on the student, e.g. family members, friends, teachers).
- ***Non-human elements/actors*** (organisations, objects, or structures who have an impact on the student, e.g. university, school, student loans company).
- ***Collective human elements/actors*** (groups of people who have an impact on the student, e.g. peer groups, social groups, religious congregations).
- ***Implicated silent actors/actants*** (organisations or societal elements that have implied and unspoken impact on the student, e.g. jobs market, funding models, OFSTED reviews of schools).
- ***Discursive constructions of individual/collective human actors*** (discussions, decisions, or debates that have an impact on the student, e.g. choice of course, choice of university, decision to go to university, fear agenda, role of students in society).
- ***Discursive constructions of non-human actants*** (societal debates or principles, or enacted policies that have an impact on the student, e.g. Research Excellence Framework (REF), Value for money of a degree, student satisfaction).
- ***Political/Economic elements*** (political or economic decisions or policies that have an impact on the student, e.g. Graduate jobs market, EU membership referendum, funding models for HE).
- ***Sociocultural/symbolic elements*** (sociocultural issues that have an impact on the student, e.g. family role of religion, student as a customer, conventions of the discipline).
- ***Temporal elements*** (timescales and temporal factors that have an impact on the student, e.g. Impending end of the degree, time available to study, amount of contact time for teaching).

- ***Spatial elements*** (factors associated with geographical location or volume of spaces have an impact on the student, e.g. family role of religion, student as a customer, conventions of the discipline).
- ***Major issues/debates*** (people who have an impact on the student, e.g. distance from university to home, size of teaching facilities, position of libraries within the university).
- ***Related discourses*** (Discourses related to the experience of learning that impact on the student, e.g. belief in learning styles, fear of appearing stupid to peers, Year 1 not counting towards the degree).
- ***Other*** (other factors that don't fit into the above categories, but which impact upon the student).

The Ordered Map was then transferred back to the Messy Map format (Figure D1.2(a), with similar factors (e.g. individual human elements, discourses) clustered together to facilitate drawing linkages. Numerous copies of the map were then printed, and page used for an individual factor. The factor focused upon for that page was linked with drawn lines to any other factor that has an influence on it or an interaction with it. Those factors with minimal numbers of onteractions were removed after the first round of analysis and a more-simplified map (Figure D1.3) was created. The same process of drawing linkages was undertaken for the simplified map, which led to the development of Figure 6.4.

Figure D1.1

April 2017

Individual Human elements/actors	**Non-human elements/actors**
Student	University
Peers on course	School/Department
Study partner(s)	Secondary school
Best friend(s)	Government/Department for Education/ Department for Students
Partner, spouse, boy/girlfriend	Fees
Current Housemates (imposed social group)	Student Loans Company
Prospective Housemates (selected social group)Social peers	Research councils
Friends at home or from school	Employers
Parents/other generation relatives	Home Office
Siblings	
Older Siblings at University	
Lecturers	
Personal Tutor	
Seminar leads / PG Demonstrators	
School teachers	
Casual/passing acquaintances	
Collective human elements/actors	**Implicated silent actors/actants**
Study partners/groups	Jobs market and Employability Agenda
Student body at University	UK education system
Societies/social groups	OFSTED (impact on schools, subject selection pupil selection, teachers)
Religious societies/groups/congregations	Learned societies / Accrediting bodies
Students' Union	QAA, UCAS
Community of Practice for the discipline	League tables for schools (impact on selection)
Student demographic groups (e.g. International)	League tables for Universities
Lab groups/Seminar groups	Level of challenge for different qualifications
Housemate group/Flatmate group	University staff workload models
Lecturers (as a collective body)	University funding models
	Competition between secondary schools
Discursive constructions of individual/collective human actors	**Discursive constructions of non-human actants**
Choice of university	Decreased status of teachers in society
Expectations of Society	Expectations of society
Fear Agenda	Student Satisfaction
'Students as spongers'	TEF and REF
Students as 'Customers'	Justification of fee level
Value for money	Discourse around value of degrees
Identity (self)	Value for Money ("I'm paying £9000…..")
Identity (projected on/from others)	Year 1 doesn't count
Collective identity (as a student, a Cardiff student, an English student, a historian, gender etc).	Concept of SRL at University
Interplay or power relationship between staff & student	Value of vocational vs non-vocational degrees (also arts vs STEM)
Little Fish in Big Pond	Graduate employment rates
	% 1sts in module/degree

Political/Economic elements	**Sociocultural/symbolic elements**
HE role in economy	Referencing conventions
TEF vs REF (struggle for importance)	Student as Customer
Long term impact of TEF	Language issues (e.g. Welsh language).
Students'/HE role in society	US English vs UK English conventions/grammar
Political impact of HE	Identity
Fees and Loans	Gender and ethnicity
Student Debt	Imposed social groups (e.g. flat-mate groups, partners in class)
Brexit	Brexit and immigration
International politics (esp. USA)	Societal promotion of competition
Funding model for HE	Cultural conventions (difference between home and Uni, or home and UK)
Funding for schools	Religious impact
Graduate Jobs market	Rural vs Urban lifestyles and experiences
Immigration	
Student politics (and students' roles in politics)	
Temporal elements	**Spatial elements**
Degree time limit	Class size/Lecture size
Impending graduation	Distance to University from home
Future after degree	Commuter students
Age of student (age vs readiness for uni or workplace)	Location of University within a city
Rate of educational development	Proximity of peers in Halls
Age of entry to University	Library (silent social space)
Closeness to A-Levels	Teaching facilities in university
Closeness to University Exams	Size of Cardiff
Assignment deadlines	Distance of Halls of Residence/Home
Contact time (amount of)	
Available free time	
'day person' vs 'night person'	
Major issues/debates	**Related discourses**
Ways of teaching in HE	"Year 1 doesn't count"
"Why am I here?"	Rules and conventions of discipline CofP
Role of education in society	Expectation of Independent Learning
Graduate employability and availability of graduate jobs	Study skills training and expectations
Employability agenda	Transition to University
Assessment and Feedback	Student mental health, stress
Student satisfaction	Belief in VARK Learning styles
Introduction of TEF	Fear of appearing stupid
Student mental health	Dislike of collaboration
Do A-Levels prepare students for university?	Competition between learners
Value for Money of an HE experience	Becoming an independent adult
	Other
	Student 'OCD'-like preferences
	Informal learning

Figure D1.1 – Example of an Ordered Map for Situational Analysis. The ordered map is structured to divide the interactions into a series of factors that have impacted upon the student. Each factor is provided its own sector in the map, and populated with examples from the data.

Figure D1.2

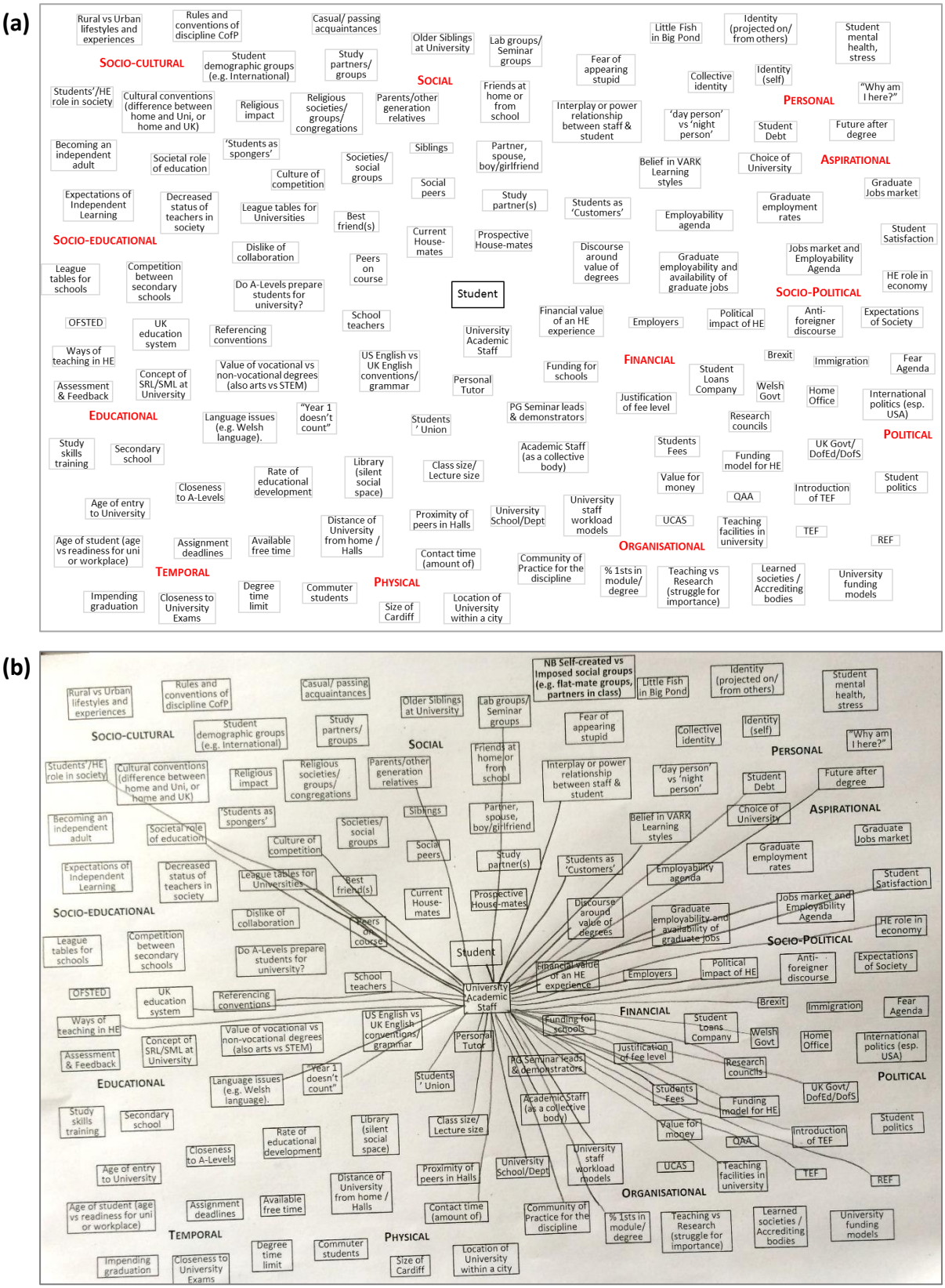


Figure D1.2 – Example of a reconstituted 'Messy Map' for Situational Analysis. The reconstituted Messy Map consists of the components from the Ordered Map. Components are arranged in areas of similarity, such as political, educational, socioeconomic factors, etc (titles shown in red font), to facilitate the drawing of interactions between factors. The student is situated at the centre of the map. (a) reconstituted Messy Map; (b) Example of a Messy Map used to show interactions between each factor, to identify key nexus points of high levels of interaction..

Figure D1.3

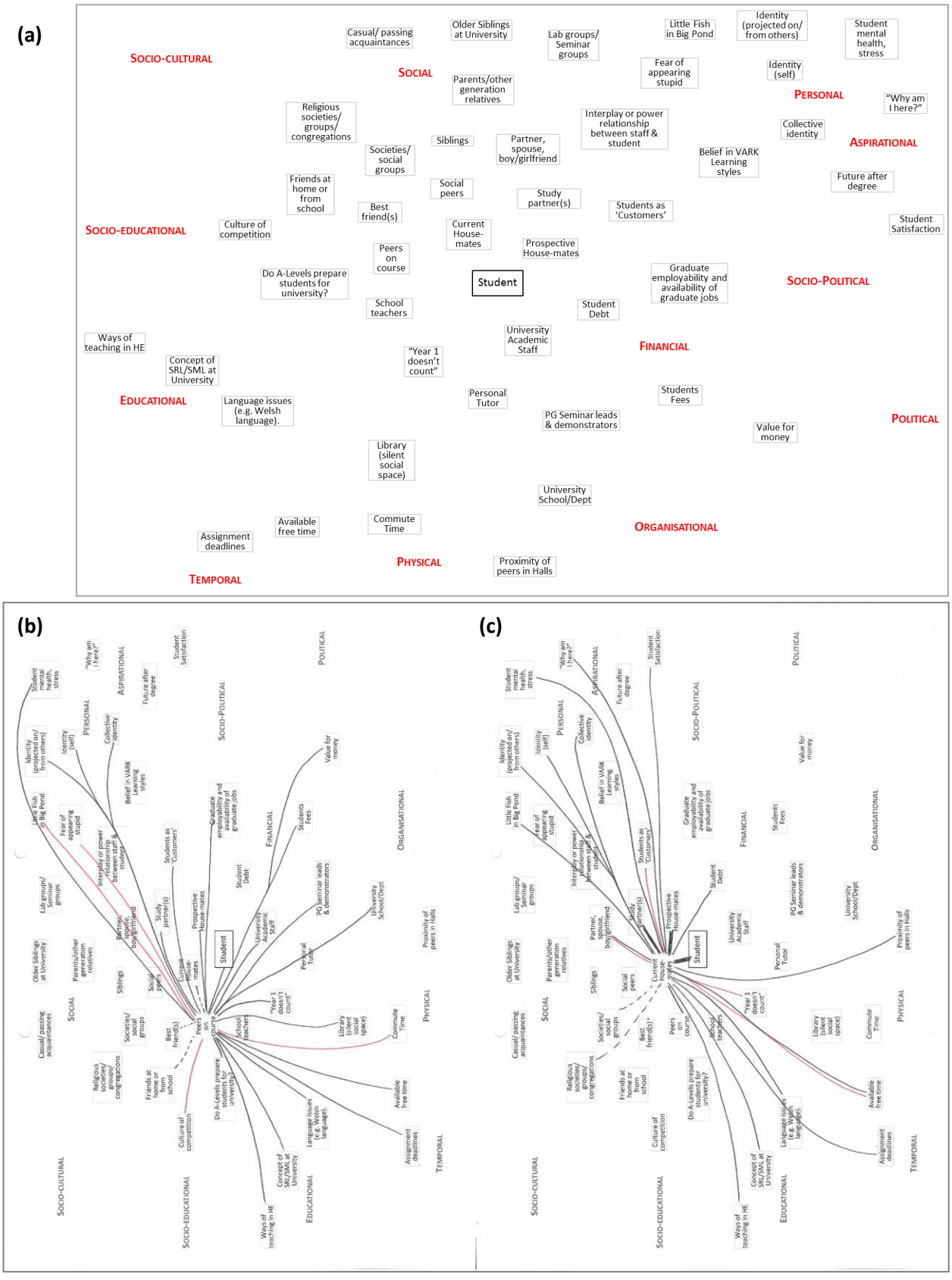


Figure D1.3 – Example of the use of a simplified reconstituted 'Messy Map' for the Situational Analysis process. The reconstituted Messy Map was simplified based on the collated findings from the analysis shown in Figure D1.2 above, with less-common interactions removed (after the first round of comparisons was undertaken). (a) Simplified reconstituted Messy Map; (b, c Example of analyses undertaken on the simplified version of the Messy Map focusing on Course Peers and Domestic Peers. Black lines = positive relationships/impacts, red line = negative relationships/impacts.